POST GRADUATE DEGREE PROGRAMME (CBCS)

in

E D U C A T I O N

SEMESTER-I

EDC-01

Educational Philosophy-1

Self-Learning Material

DIRECTORATE OF OPEN & DISTANCE LEARNING

UNIVERSITY OF KALYANI

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Message

"Education is the most powerful weapon which you can use to change the world."

—Nelson Mandela

In today's world, it simply is not enough to just earn a bachelor's degree. The Masters' Degree in Education is a respected post graduate qualification, enabling you to specialise academically in Education, or further your career in Education or another career of your choice.

This degree is a flexible course with a semester pattern and choice of papers that allows you to acquire the qualification according to your interests. You can choose to specialise in Educational Technology, Teacher Education, History of Education etc. all of which draw on the research strengths of the Faculty of Education. More specificially, the M.A. (Education) program intends to :

1. Provide learning—experiences which will enable students to understand and appreciate knowledge, structures and paradigms of education.
2. Develop professionals for effective participation in educational activities in different areas of education. In addition students are given mandatory curricular inputs to help them prepare for competitive exams like SET, NET, CTET etc.
3. To prepare professional personnel required for staffing of the Colleges of Education.
4. To prepare administrators and supervisors for schools and for positions of responsibility in the Education Department engaged in Educational Research and Educational Planning.
5. To prepare personnel for various educational services.

"Education is the manifestation of perfection already in man"

—Swami Vivekananda

Director
Directorate of Open and Distance Learning
University of Kalyani

SEMESTER – I EDC-01: EDUCATIONAL PHILOSOPHY-1		
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EDC-01

EDUCATIONAL PHILOSOPHY-1

Block-1

Education and Philosophy

Unit-1

Meaning and concept of Education and Philosophy

CONTENT STRUCTURE :

1.1.1 Introduction

1.1.2 Objectives

1.1.3 Meaning of Philosophy

1.1.4 Meaning of Education

1.1.5 Interrelationship of Philosophy and Education

1.1.6 Summing up

1.1.7 Suggested Readings

1.1.8 Assignments

1.1.1 INTRODUCTION

You are bearing with you some general ideas about two terms, 'Philosophy' and 'Education'. We hope, you like to understand these two concepts more critically as well as to extent your knowledge about '**Education**' as a discipline.

Unit 1 Intends to provide you information about meanings of philosophy and education and the interrelationship of Philosophy and Education.

1.1.2 OBJECITIVES

After careful study of this unit you will be able to-

- Be acquainted with the meaning of Philosophy.
- Be acquainted with the meaning of Education.
- State and explain the interdependence of philosophy and education.

1.1.3 MEANING OF PHILOSOPHY

At the outset let us ask the question what is the meaning of philosophy?

PHILOSOPHY : Philosophy is an eternal quest after truth. Philosophy finds its origin in wonderer curiosity. It is as old as human life. The subject matter of Philosophy is as wide as human experience.

Philosophy is a search for, an attempt at a universal explanation of the nature ofthings. It is a continuous seeking of insight into basic realities like the physicalworld, life, mind, society, knowledge, and values. Education is also a quest forknowledge and therefore, Education divorced from philosophy would become anaimless endeavour.

Francis Bacon (1561-1626), a great English philosopher considered Philosophy as the great mother of the Sciences.

The word 'philosophy' has a Greek origin; Greek word 'Philosophia' consists of two words thatis 'phileo' meaning love, and 'sophia' meaning wisdom. So, the literal meaning of Philosophy is 'loveof wisdom', Wisdom is not only knowledge. One may have knowledge, but he may not be wise. Wisdomconstitutes knowledge plus its implications on all circumstances.Here are some definitions of Philosophy which will help you to understand the term 'Philosophy' more clearly.

1. In the words of Plato "Knowledge of the true nature of different things is philosophy."

2. Dr. Radhakrishnan considers philosophy as a "logical enquiry into the nature of reality."

3. According to Henderson philosophy is a search for "a comprehensive view of nature, an attempt at universal explanation of the nature of things."

Philosophy wants to understand man in relation to the whole universe. Philosophy deals withthe nature of human mind and personality. Plato (427-347 B.C.) defined philosopher as "He who hastaste for every sort of knowledge and who is curious to learn and is never satisfied, may be justtermed as a philosopher." Philosopher is never satisfied and always running after truth. Philosophyseeks to provide a complete account of the man's world. It is reflective and critical in nature. Philosophyright from the earliest times is interested in the common problems of the mankind. It helps us to achievewisdom, which would influence our conduct of life.

By the phrase 'Philosophy of life' we mean 'outlook of life'; i.e. how we regard things, events,relationships, and the values. For example, one individual sets a very high value to acquisition of wealth,another to acquisition of health, and another to acquisition of power. Now these are there philsophiesof life. Aristotle (344-322 B.C.), the great Greek Philosopher remarked "Everyone follows a philosophy,whether he is aware of it or not."

Important aspects:

Philosophy is concerned with the three important aspects of human life and development. Theseare as follows:

(1) Metaphysics, theory of reality;

(2) Epistemology, theory of knowledge;

(3) Axiology, theory of value.

(1) Metaphysics or problems of reality is the study of existence, and deals with the questions of reality. The usual questions are: What is the nature of the universe? Is there any intelligent purpose behind this world?

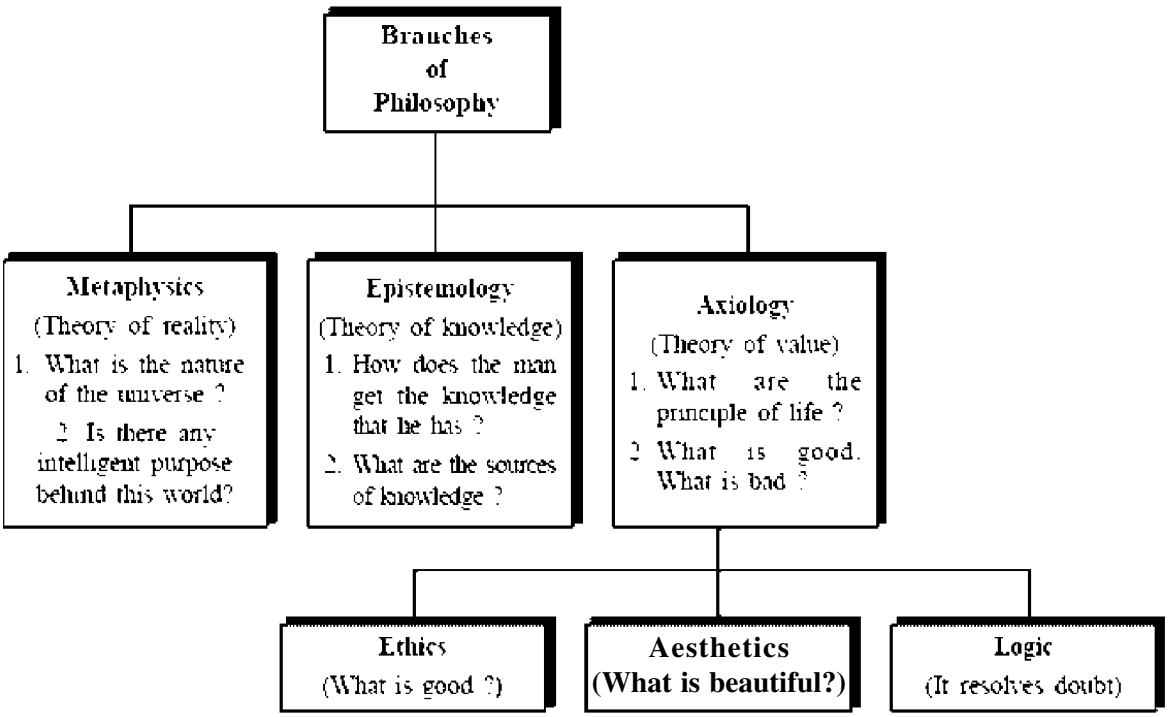
(2) Epistemology or problems of knowledge is the most fundamental branch of philosophy. Itdeals with the problems of knowledge. It discusses the following types of questions such as : How does the man get the knowledge that he has? What are the sources of knowledge?

Different philosophers have provided different answers.

(3) Axiology or problems of value is that branch of philosophy which deals with the problems of values. It has been divided into three branches.

(a) Ethics which discusses the criteria of right and wrong.

(b) Aesthetics which discusses the nature and criteria of beauty.



c) Logic which studies truth.

This branch of Axiolgy arises such questions as : What are the principles of life? What is good or bad? Philosophy is an investigation, a search on the part of man to understand the problems of reality, knowledge, and value.

Question :

Let Us Check Our Progress

Answer in brief

1. What do you understand by 'Philosophy'?
2. Write down the aspects of Philosophy.
3. What do you mean by 'Aesthetics'?

1.1.4 WHAT IS EDUCATION?

You have already learnt the meaning of philosophy. Let us now learn the meaning of education.'Education' is not a simple unitary concept. That is, it is not a concept like 'gardening' which refers toa particular type of activity. The concept of education is used in a variety of contexts and with different shades of meaning. To give a precise definition of education, therefore, is very difficult. In order tofind the real meaning let us explore the different ways in which it is used.

It should be noted that education is used both in the narrow and broader senses. In the narrowsense, education refers to schooling-the process by which society through its different educationalinstitutions specially for this purpose, deliberately transmits its cultural heritage, its accumulatedknowledge, values and skills from one generation to another. In the broader sense any act or experience that has a formative effect on the mind, character, or physical ability of an individual can be callededucation. It is in this sense that 'reading', 'traveling' or 'even leaving with someone' can be an educated experience. Education in the broader sense is a lifelong process.

Education is also thought of as a process of acquisition of knowledge. Education is used to refer both to a process and to a product. As a product education is the sum total of what is receivedthrough learning - the knowlege, skills, ideals, values that are the outcomes of learning. As a processit refers to the act of developing these skills or values in someone else.

It is supposed that the word 'education' has been derived from three Latin words such as – Educare, Educo and Educere. Their meanings are:

Latin word—Its meaning

Educare	to take care of, to bring up
Educo	to lead forth, take forward
Educere	to lead out, to draw out

The Latin word 'educare' which means to bring up, is a process of imparting to an individualcertain information and knowledge which society deems necessary. Thus, education is a process of external imposition rather than growth from within. There is a group of thinkers who believe 'that the term education has been derived from the Latin word 'Educere' which means to lead, lead out or to draw out. Education they think, means to draw out something. Some thinkers believe that the term education has been derived from two Latin words. 'e' meaning out of and 'duco' meaning 'to lead'.Education therefore means to lead out or draw out the best in man. It is the process of drawing out from within rather than imposing from without. All that the teacher has to do is to allow the child to grow, avoid interfering with his growth and remove factors that hinder growth.

The Dictionary of Education (ed. Good) defines education as "the aggregate of all the processes by which a person develops ability, attitudes, and other forms of behaviour of practical value in the society in which he lives: the social process by which people are subjected to the influence of a selected and controlled environment (especially that of the school) so that they may obtain social competence and optimum individual development.

In our own language we find many concepts referring to education. The word Shiksha and 'Vidya' are the Indian synonymous of 'education'. Shiksha is derived from the Sanskrit verbal root 'Shas' which means to 'dicipline', to control. Similarly the word Vidya is derived from the Sanskrit verbal root 'Vid' which means 'to know'. It refers to acquisition of knowledge. Hence, disciplining the mind and acquisitionof knowledge have been termed as education.

According to Swami Vivekananda (1863-1902) "education is the manifestation of perfection thatis already in man". A great Swiss educator, namely Pestalozzi (1746-1827) has expressed the meaning ofeducation in his words, "Education is the natural, hurmonious, and progressive development of man'sinnate powers". Tagore (1861-1941) has observed "Education gives us the wealth of inner light.Education means the harmonious development of all the powers of the human being — physical, social,intellectual, aesthetic and spiritual. The essential elements in the creative process are creative mind, awell-integrated self, socially useful purposes and experiences related to the interests, needs and abilities of the individual as a participant in social living. The entire process of growth and development whichis caused by learning from experience is called education.

Question :

Let Us Check Our Progress

1. What does education mean in the narrow sense?
2. Give any one definition of education?
3. What do you mean by education in the broader sense?

1.1.5 PHLOSOPHY, EDUCATION & THEIR INTERDEPENDENCE

Let us now focus our attention on the interrelationship of philosophy and education. You havelearnt the meaning of philosophy and education. Now it is very important to know their interrelationship.

The interdependence of Philosophy and education is seen from the fact that the great philosophers of all times in all societies have also been great educators and their philosophy is reflected in their educational systems. If we look on the history of education we will find galaxy of philosophers, who are educationists too. Socrates, Plato, and Aristotle who were great philosophers tremendously were concerned with education and also influenced the Western thoughts profoundly. Plato's Republics claimed by the educator as one of the greatest of their classics. Other great western philosophersLocke, Rousseau, Kant, Hegel, Dewey, etc. are examples of philosophers who have much to say about the nature, aim and methods of education. The ideas and ideals of Buddha were of great educational value. The modern Indian philosophers like Gandhi, Tagore, Aurobindo, Radhakrishnan are great educators too. So the history of education proves that philosophers have been great educationists. The interdependence can be better understood by analysing the implications of philosophical principles inthe field of education. Education and philosophy are inseparable because the ends of education arethe ends of philosophy i.e., wisdom; and the means of philosophy is the means of education i.e., inquiry,which alone can lead to wisdom. Separation of philosophy and education inhibits inquiry and frustrates wisdom.

Both the world of ideas and the world of practical activity constitute education: In order to behave intelligently in the educational process, education needs direction and guidance which philosophy can provide. Philosophy suggests a way of improving the quality of life because it helps us gain widerand deeper perspective on human existence. The relationship between education and philosophy is justlike the relationship between the lame man who is able to see, but unable to walk, and the blind manwho is able to walk, but unable to see. In order to reach the destination the blind and the lame shouldcooperate each other. The lame will show the direction and the blind will move accordingly; so alsoare our philosophy and education. Education without philosophy is blind and philosophy without education is invalid or lame.

The main task of philosophy is to determine what constitutes good life, where as the main taskof education is how to make life worth living. So philosophy and education are mutually re-constructive. They give and take from each other. Philosophy points out the way to be followed by education. James Ross says, Philosophy and education are two sides of a coin: the former is the contemplative side while the latter is the active side.

John Dewy, the famous educational philosopher of America describes the relation between philosophy and education as education is the laboratory of philosophy, where the validity of philosophical truth is tested. Education is dependent on philosophy for 'guidance' and philosophy is dependent on education for 'formulation'. Philosophy therefore, is inseparable from education. So whoever has tried to philosophise about education has been called educational philosopher or education thinker.

Philosophy determines the various aspects of education like the aims of education, curriculum, teaching method, discipline. etc with a view to help man to lead rational life.

Question :

Let Us Check Our Progress

Write your answers in about 50 words.

1. Explain relationship of philosophy and education.
2. Cite three examples that demonstrate intimate relationships ofphilosophy and education.
3. Mention the main tasks of philosophy.

1.1.6 SUMMING UP

We discussed the concept of philosophy, education and their interdependence.

Philosophy, it may be concluded, indispensable for every aspect of life and much for education which prepares the man for complete living. From different angles of the educational problem there is a demand for a philosophical foundation of education. All educational questions are ultimately questions of philosophy. It is the basis of education, All educational efforts and achievements become purposeful by philosophy. It is essential if we want to evolve a required type of personality of the

child after education. Real educational progress is the product of philosophy. Great educational advances have always been brought forth by intuitive insights of great philosophers. Now India is on the threshold of modernization. She has dedicated herself to the pursuance of the modern values of democracy, socialism, and secularism. The Constitution of India which is an expression and declaration of the highest ideals, values, and aspirations of the Indian people as a whole seeks to all its people equality, liberty, and justice, So there is an urgent need for a critical evaluation of our philosophical tradition. Such an evaluation involves reassessment and re-interpretation of the past, identification of such strands as are supportive of the new outlook and an assessment of the extent to which they can be harmonized with it. Of the many positive elements in our traditions are: devotion to duty and discipline, selfless action, belief in the oneness of all life, spirit of toleration, concern for welfare of all mankind commitment to truth and non- violence. Traditional ideas and values should not be taken as rigid and inflexible. They need to be continually reassessed and re-interpreted in the light of new experience.

1.1.7 SUGGESTED READINGS

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1.1.8 ASSIGNMENTS

1. what do you understand by Philosophy?
2. Write down the aspect of Philosophy ?
3. What do you mean by Education in the narrow and broader sense ?
4. How is philosophy related to education?

Unit - 2
Educational Philosophy

CONTENT STRUCTURE:

1.2.1 Introduction
1.2.2 Objectives
1.2.3 Meaning, nature, and scope of Educational Philosophy
1.2.4 Need for educational philosophy
1.2.5 Summing up
1.2.6 Suggested Readings
1.2.7 Assignments

1.2.1 INTRODUCTION

Unit 1 bearing with you some general ideas about two terms, 'Philosophy' and 'Education'. Wehope, you like to understand these two concepts more critically as well as to extent your knowledge about '**Education**' as a discipline.

Now Unit 2 intends to provide you information about meanings of EducationalPhilosophy. You will be able to understand nature and scope ofeducational philosophy and also need and importance of educational philosophy more critically.

1.2.2 OBJECITIVES

After careful study of this unit you will be able to-

- Discuss the nature and scope of Educational Philosophy.
- Explain the need for Educational Philosophy.

1.2.3 MEANING, NATURE, AND SCOPE OF EDUCATIONAL PHILOSOPHY

Now we are going to discuss the meaning, nature, and scope of educational philosophy.

From the above discussion we find that Philosophy deals with the goals and essentials of goodlife while education provides the means to achieve those goals of good life. Educational philosophy isa distinct but not a separate discipline. It takes its content from education and its methods fromphilosophy. The process of philosophizing about education requires an understanding of education andits problem. It can be said that educational philosophy is the application of philosophical ideas toeducational problems. Educational philosophy is a species of the genus philosophy, with the differentia that its proper scope is confined to the field of education.

Educational Philosophy is a species of the genus philosophy with the differentiathat its proper scope is confined to the field of Education.

It can be said that philosophy is the theory while education is the practical. Practice unguided by theory is aimless, inconsistent and inefficient just as theory which is not ultimately translatable into

practice, is useless and confusing. Philosophy deals with the ends while education deals with the meansand techniques of achieving those means. According to JohnDewey and his followers all philosophy is philosophy of education. John Dewey made it quite clear that in order to solve the social problem oflife the main function of philosophy is to study the related problems and present a proper view-point.Philosophy should confine its programmes to the study of social problems alone. Bertrand Russell isof the opinion that educational philosophy is a new branch or a new subject which discusses educational problem from philosophical point of view. It can be said that educational philosophy is the study of the purpose, process, nature, and ideals of education.

Educational philosophy may be different in different societies. Even in the same country educational philosophy changes time to time. So we can say that educational philosophy is society specific and time specific. In India at the ancient period the educational philosophy was "to knowthyself" or self realization. In mediaeval period educational philosophy was realization of religious aims. In British period the philosophy of education was to impart education to a few person who will serve the British ruler. In modern period Indian Constitution uphold the philosophy of democracy, socialism, and secularism.

Educational philosophy is a subject like philosophy. If we examine its historical basis we find that it is an ancient subject like philosophy because all thinkers and philosophers of all times have also been great educators.

Any adequate philosophy of education must answer three questions regarding education i.e.,

What is education?

What ought it to accomplish?

How can these aims be realized?

Philosophy of education is concerned with 'the what', 'the why', 'the how' of education. Different philosophies of education have grown out from different types of philosophies.

Educational philosophy was traditionally developed by philosophers like Aristotle, Augustine, JohnLocke, etc. in the context of their ethical theories. However, in the twentieth century philosophy of education tended to be developed in school of education in the context of foundation of education thus linking it with other parts of the discipline of education.

Scope of a subject directly follows from its definition. Therefore, the scope of educational philosophy is concerned with the problem of education. The main problems of philosophy of education include aims and ideals of education, analysis of human nature, relationship of educational values, theory of knowledge and its relationship to education, economic system and education. The place of school in educational system, the curriculum and the process of education and finally the relationship of education and social progress also.

Its scope includes a critical evaluation of the different aims of education held and propagated time to time such as character building, man making, human development, development of citizenship, utilization of leisure, training for civic life, total development of personality. Philosophy of education critically evaluates different aims and ideals of education to arrive at the most sound aim of education.

The most important part of the scope of philosophy of education is formed by the educational value. Value is typically a philosophical subject since it is abstract mental, and universal.

Education deals with knowledge. It is determined by the source, limits, criteria, and means of knowledge. The discussion of all these however, falls within the jurisdiction of epistemology, an area of philosophy. Therefore, an important area of the functioning of philosophy of education is concerned with theory of knowledge.

Educational philosophy is an important branch of applied philosophy. As a branch of philosophy, it utilizes philosophical methods for solution of philosophical problems with a philosophical attitude to arrive at philosophical conclusion. Different schools of educational philosophy are Idealism, Realism, Pragmatism, Naturalism, Humanism, Logical Positivism, Existentialism, etc. They have different philosophical opinion regarding educational aims, curriculum, textbooks, methods of teaching, discipline and teacher.

Question :

Let Us Check Our Progress

1. What are the functions of educational philosophy?
2. Name the different schools of educational philosophy.
3. Give any definition of philosophy.

1.2.4 NEED AND IMPORTANCE OF EDUCATIONAL PHILOSOPHY

You have learnt the nature of educational philosophy. It is now very relevant to know the importance and need of educational philosophy, which is also important for the educators, planners, and policy makers of education.

Education is a practical activity. Every educational practice is illumined with the backdrop of Philosophy. All modern educationists hold the view that not only should the educator be equipped with knowledge of a variety of subjects, but also that he should have his own philosophy of education, without which he cannot efficiently solve the problems that he will face in teaching from day to day. Fichte rightly pointed out that "the art of education will never attain complete clearness without philosophy." Hence, there is an interaction between the two, and either without the other is incomplete and useless. If education is a set of techniques for imparting knowledge, skills and attitudes, Philosophy is the foundation to vitalize these. Philosophy is the foundation and education is the superstructure.

There may be as many philosophical views as is the number of persons. These views have been grouped into 'ism'. These may be classified as: Idealism, Naturalism, Pragmatism, Logical Positivism, Humanism, Marxism, and Existentialism. These are school of educational philosophy which we mentioned previously. Each educational philosophy from its own view-point makes education significant. There are five general aspects of education viz. aims, curriculum, methods of education, discipline and teacher. The impact of philosophy has been felt in all those aspects. These are shown below:

We can not think of education without aim. As is the philosophy of a society so is the aim of education. The aims and objectives of education are decided and determined by the society according to the philosophy of a particular period of time.

In independent India, Philosophy enshrined in the Preamble of its Constitution. Educational aims accordingly draw their inspiration from it. The philosophy of Communism influenced the aims of education in China and Cuba.

It is Philosophy which also decides what subjects and activities to be included in the curriculum for realizing the particular aims of education. The philosophical approach to life is the guiding factor in the determination of curriculum. Gandhiji's basic education was an expression of his philosophy. The National Policy on Education 1986 lays stress on a core curriculum keeping in view the needs of emotional and national integration of our country. Various philosophies like Humanism, Idealism, Pragmatism, and Naturalism have influenced curriculum in varying digress.

There is close relationship between philosophy and methodology of teaching. The Naturalists emphasize on the child-centered method of education. They guarantee maximum freedom of the child. Education in the idealistic system gives importance on the impact of teacher's personality. The Pragmatists give importance on the learning by doing in social setting.

Philosophy has a great bearing on discipline in educational institutions. In a democratic setup, discipline is viewed as an inner discipline as well as social discipline based on group work. Repression and suppression is un-psychological. Different philosophies differ in their concept of discipline. Idealists are in favour of strict self-discipline and the impact of impression of the teacher on his students. The Naturalists believe in discipline through complete freedom. There is no question of force and control. The Pragmatists believe in social discipline. Children should be left free in order to develop freely and harmoniously. Realism wants to discipline the learner through objectivity.

What should be the appropriate textbook is determined by life values fixed by philosophy. If the life values of the prevailing philosophy are related in the content material of the textbook then they are considered to be the appropriate textbooks. So the contents of textbooks must mirror the philosophy or way of life of the people. In a socialist society textbooks emphasize socialist philosophy. In India since independence there has been a great stress on emotional integration and national unity. Accordingly, textbooks are being screened from time to time to ensure that they include only that matter which promotes emotional integration and national unity.

The need for educational philosophy is apparent when we look at the teacher. In fact teacher himself is a first grade philosopher. In other words, the teacher himself has a philosophy of his own. He must have a consistent and sound philosophy in accordance with the philosophy of the nation to which he belongs. That teacher can create patriotic, resourceful, and enterprising citizens devoted to national service and international goodwill. A teacher with fatalistic negative philosophy can not help the students for development. A teacher would not be able to develop democratic ideals in his students without democratic philosophy. Hence, he must posses a good understanding of all the philosophies of life and chooses good and wholesome elements from them to form his own philosophy.

It is hoped educational philosophy should help the educational administrators, educational planners and policy makers. Democratic philosophy lays emphasis in running different educational programmers of the educational institutions.

So we may conclude that from different angles of educational problems, there is a demand for educational philosophy. We must have a philosophy of life and education.

We may again say that the art of education will never attain complete clearness without philosophy.

Question :

Let Us Check Our Progress

1. Why do people need educational philosophy?
2. What is the relation between educational philosophy and the teacher?
3. What should be the foundation of education in your opinion?

1.2.5 SUMMING UP

We discussed the nature and importance of educational philosophy. We observed that the educational philosophy is very vital and most important in the teaching, learning system of a country.

Philosophy, it may be concluded, indispensable for every aspect of life and much for education which prepares the man for complete living. From different angles of the educational problem there is a demand for a philosophical foundation of education. All educational questions are ultimately questions of philosophy. It is the basis of education, All educational efforts and achievements become purposeful by philosophy. It is essential if we want to evolve a required type of personality of the child after education. Real educational progress is the product of philosophy. Great educational advances have always been brought forth by intuitive insights of great philosophers.

Now India is on the threshold of modernization. She has dedicated herself to the pursuance of the modern values of democracy, socialism, and secularism. The Constitution of India which is an expression and declaration of the highest ideals, values, and aspirations of the Indian people as a whole seeks to all its people equality, liberty, and justice, So there is an urgent need for a critical evaluation of our philosophical tradition. Such an evaluation involves reassessment and re-interpretation of the past, identification of such strands as are supportive of the new outlook and an assessment of the extent to which they can be harmonized with it. Of the many positive elements in our traditions are: devotion to duty and discipline, selfless action, belief in the oneness of all life, spirit of toleration, concern for welfare of all mankind commitment to truth and non- violence. Traditional ideas and values should not be taken as rigid and inflexible. They need to be continually reassessed and re-interpreted in the light of new experience.

1.2.6 SUGGESTED READINGS

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1.2.7 ASSIGNMENTS

1. What is the nature of educational philosophy?

2. How does educational philosophy influence:

   (i) aims of education.

   (ii) curriculum, and

   (iii) discipline

Block-2
Indian Philosophy
Unit -1
Introduction to Indian Philosophy

CONTENT STRUCTURE :

2.1.1 Introduction

2.1.2 Objectives

2.1.3 Meaning and Nature of Indian philosophy

2.1.4 Roots of philosophical systems

2.1.5 Classification of the Indian philosophical systems

2.1.6 Common characteristics of the Indian philosophical systems

2.1.7 Indian philosophy of education

2.1.8 Summing up

2.1.9 Suggested Readings

2.1.10 Assignments

2.1.1 INTRODUCTION

After completing Block 1 we hope you understand some general ideas about two terms, 'Philosophy' and 'Education' and these two concepts more critically as well as to extent your knowledge about '**Education**' as a discipline.

Now Block 2 unit 1 intends to provide you information about Indian Philosophy. You will be able to understand nature and scope of educational philosophy and also need and importance of educational philosophy more critically. In the present Unit, we will also focus on the nature of the Indian Philosophy and Indian Philosophy of Education.

2.1.2 OBJECITIVES

After careful study of this module you will be able to-

- Be acquainted with the meaning ofIndian Philosophy.
- Describe the nature of the Indian Philosophy.
- Explain Indian Philosophy of Education.

2.1.3 MEANING AND NATURE OF INDIAN PHILOSOPHY:

Now we shall discuss the nature of Indian philosophy, roots of Indian philosophy, and common characters of the Indian philosophical systems. You will also obtain an idea of Indian philosophy of education.

India, as you know has one of the oldest and largest traditions of philosophical thinking in the world. The tradition covers the Vedic period dating as far back as five thousand years ago.

The etymological meaning of the word 'philosophy' is, you know, 'love of learning'. It signifies a natural and necessary urge in human beings to know themselves and the world in which they live and move. Western Philosophy has more or less true to the etymological meaning of philosophy which is being essentially an intellectual quest for truth.

Indian philosophy has been, however, intensely spiritual and has always emphasized the need of practical realization of truth. As philosophy aims at knowledge of truth, it is termed in Indian literature 'the vision of Truth' (Darshana). The word 'darshan' means 'vision' and also the instrument of vision. It stands for the direct, immediate and intuitive vision of reality, the actual perception of truth, and also includes the means which leads to this realization. 'See the self' is the keynote of all schools of Indian Philosophy.

The origin of Indian philosophy may be easily traced in the Vedas. Indian philosophy as an autonomous system, has developed practically unaffected by external influences. Indian philosophy denotes the philosophical speculations of all Indian thinkers, ancient or modern, Hindus or Bouddhas, Jainas, theists, or atheists. It is not the philosophy of the followers of a particular religion. In Indian philosophy you will find also the views of atheists and materialists, like the Charvakas, and unorthodox thinkers like the Bauddhas and the Jainas, along with those of the otherodox Hindu thinkers.

Though there are many different schools with different views, yet each school took care to learn the views of all the others and did not come to any conclusion before considering thoroughly what others had to say. This spirit led to the formation of a method of philosophical discussion. Indian philosophy discusses the different problems of Metaphysics, Ethics, Logic, Psychology, and Epistemology, but generally it does not discuss them separately as Western philosophers do. Every problem is discussed by the Indian philosophers from all possible approaches metaphysical, ethical, logical, psychological, and epistemological. This tendency has been called by some thinkers as the synthetic outlook of Indian Philosophy.

2.1.4 ROOTS OF PHILOSOPHICAL SYSTEMS

In Veda one finds the germs of the thought currents of later Indian philosophy. The Vedas represent different phases of religious thoughts like polytheism, henotheism, monotheism, and monism. The name 'Veda' (knowledge) stands for the Mantras and the Brahmanas. Mantra means a layman address to some god or goddess. The collection of the Mantras is called Samhitas. The Brahmanas deal with the rules and regulations laid down for the performance of the rites and sacrifices. The appendages to these Brahmanas are called Aranyakas because mainly they are composed to the calmness of the forests. The Aranyakas mark the transition from the ritualistic to the philosophic thought. The concluding portions of the Aranyakas are called the Upanishads. These are intensely philosophical.

The aim of Indian philosophy is not to solve the mysteries of life but to discover away out of its misery and it gives utmost importance for the determination of theideas and ways of life rather than formulation of theoretical views of the universe.

The Mantra and the Brahmanas are called the Karma-Kanda or the portion dealing with the sacrificial actions and the Aranyakas and the Upanishad (means sitting down near) are called the Jnana- Kanda or the portion dealing with knowledge. The Upanishads also known as the Vedanta because they are the essence, the cream, the light of the vedic philosophy. There are more than one hundred Upanishads. The Bhagawad Gita is the essence of the philosophy of Upanishads. Upanishads are so deep and extensive that it is difficult for ordinary man hence, the Gita alone is helpful to the ordinary man in understanding his duties. The Gita has a very important place in Indian philosophy.

2.1.5 CLASSIFICATION OF THE INDIAN PHILOSOPHICAL SYSTEMS

On the basis of respect for the Vedas or otherwise, Indian philosophical system have been divided into two classes viz, Astic (orthodox) and Nastic (heterodox). The orthodox schools recognize the authority of the Vedas; the heterodox schools do not recognize their authority.

Orthodox schools includes six systems of Indian philosophy which are collectively known as Sad Darshan. These are Mimansa, Vedanta, Samkhya, Yoga, Nyaya, and Vaisesika. We shall get more detailed information about each of the systems in Module - 2, Paper 1.

Now, in the orthodox schools there are two types of Philosophical systems : (i) Those which aredirectly based upon on the Vedic scriptures. These includes Mimamsa and Vedanta. (ii) Those which are not directly based on the Vedic Scriptures but have an independent basis. These include Samkhya. Yoga, Nyaya, and Vaisesika. The heterodox class of Indian philosophical systems includes the Charvakas, the Jainas, and Bouddha systems. These do not believe in the testimony of the Vedas. The classification of the Indian Philosophical Systems is shown with the following diagram.

2.1.6 COMMON CHARACTERS OF THE INDIAN PHILOSOPHICAL SYSTEMS

There are, as you know, six orthodox and three heterodox schools in the Indian philosophy. All these schools of philosophy are characterized by a fundamental unity. Following are the common characters of the Indian philosophical system.

1. All schools regard philosophy as a practical necessity. The aim of philosophical schools in India is not merely the satisfaction of intellectual curiosity, but mainly the acquisition of an enlightened life. The task of philosophy therefore, does not end in mere theoretical speculation, it must show its application to life.

2. Every system, except the Charvaka, is moved to philosophical speculation by a spiritual disquiet at the sight of sorrows and evils in the world and life. Annihilation of the three kinds of pains—adhyatmika (physical and mental sufferings produced by natural and intra-organiccauses), adhibhautika (physical and mental sufferings produced by natural and extra-organiccauses) and adhidaivika (physical and mental sufferings produced by super natural and extra-organic causes) and realization of the supreme happiness in the end and sharavana(hearing the truth), manana (intellectual conviction after critical analysis) and nididhyasana(practical realization) are the means in almost all the school of Indian philosophy.

3. Moksha or liberation is the aim of life in all Indian schools of philosophy except Charvaka. Liberation or Moksa enables a man to free himself from the shackles of ignorance and from the bondage of worldly misery. It is a state of perfect bliss.

4. Another common view is that ignorance of reality is the cause of man's bondage and sufferings and liberation from these cannot be achieved without knowledge of reality i.e., the real nature of the world and the self. By bondage, it is commonly meant the process of birth and rebirth and the consequent miseries to which an individual is subject. Liberation or mukti means therefore, the stoppage of this process.

5. All the Indian schools of philosophy believe in the theory of Karma. According to it, the results of action (Karmaphala) are always with us in the form of impressions (Samskara) and they direct the course of life. Thus, the world is a stage where everbody is preordained to perform his part according to his Karma.

6. It is common belief of Indian philosophy that human beings should have to be reborn in different bodies due to the bondage of Karma.

7. All the Indian thinkers regard that ignorance can be removed by right knowledge. Meditation and self control are the pre-requisites to right knowledge. Self control is necessary for concentration of mind and for making them effective in life.

8. In Indian philosophy the word Purusharthas are values which human beings seek either for their own sake or as a means to the achievement of a further end. Arranged in a graded order they are artha, kama, dharma, and moksha. Dharma and moksha being spiritual values are higher than the physical values of artha and kama. Man ought to constantly pursue the higher values without abandoning the lower ones. The lower ones are to be sought for their own sake but as a means for realizing the higher values.

2.1.7 INDIAN PHILOSOPHY OF EDUCATION

Let us now explain Indian philosophy of education.

It is indeed impossible to separate between Indian religion, philosophy, and education. The Indian teacher was holy man as well as a man of wisdom. He taught that attachment to the senses was to be overcome and that worldly strivings are to be subordinated to spiritual ideals. This eventually laid down the concept and practice of Para Vidya (religious knowledge) concerned with the Brahman and Self. The Brahmins (priests and educated elites), considered that all other types of knowledge were Apara Vidya (lower type of knowledge or the technical, agricultural, and vocational education) which should not be practiced by the Brahmins and the educated people. The ancient Indian system of education was restricted to the upper caste people and the Sudras were not allowed to get the Para Vidya.

Indian philosophy of education is rooted in Indian culture. The modern Indian thinkers of education like Swami Vivekananda, Sri Aurabindo, Dayananda, Rabindranath, M. K. Gandhi, and Sarvapalli Radhakrishnan follow the traditional Indian educational thoughts modifying and adjusting it in

contemporary situation. This group of thinkers represent the Indian spirit in contemporary Indian philosophy of education. Among the most important trends in contemporary Indian philosophy of education are Revivalism, Rationalism, Integralism, Nationalism, Idealism, Realism, and Pragmatism.

The names of the philosophers, we mentioned above, recommend that contemporary Indian education should follow the ancient Indian, values, and models of social relationship, methods of teaching, etc. however, the means of education should change. The modern means of education, the audio-visual instruments, the apparatus of modern science should be borrowed everwhere. They want to revive the past.

The influence of western thinking upon modern Indian thinkers is most explicit in the trend towards rationalism. All the thinkers traditionalist as well as West oriented agree about the value of reason in man's life and education.

The most important trend in Indian philosophy of education is Humanism. Humanism is the philosophy in which man occupies central place. Humanism was born in India in Upanishadic thoughts. The Upanishadic trend in modern philosophy of education may be seen in Tagore and Vivekananda's interpretation of the aim of education as man making. We shall get more of the educational philosophy of Tagore, Vivekananda, Gandhi and Aurobindo in the next Unit of this Module.

Modern Indian thinkers have abvocated a multisided scheme of education including education for physical, mental, social, moral, and religious development of the male and female. To formulate such a scheme of education these philosophers borrowed both from ancient Indian wisdom and modern western scientific knowledge. This was the basis of International Universities founded by Tagore and Sri Aurobinda.

The most powerful expression of the nationalist tendency in education among the Indian thinkers maybe found in the educational theory of Swami Vivekananda and SriAurobindo. Both these thinkers called patriotism the highest religion. Their reformist schemes in education were inspired by love of the fellow countrymen.

According to Indian thinkers education enlightens the total behaviour of an individual and finally helps in the realization of the self. They followed idealistic philosophy of education. Indian thinkersgave a very high place for moral education. Morality, is not based on supernatural foundation, rather itexcludes the concept of divine anger and divine providence. It also pointed out that a best way to resist evil is through non-violence. A gospel which Gandhi used successfully in modern times.

Modern Indian philosophy of education has to be pragmatist. In the field of education the pragmatic trend has led to give emphasis upon economic cultural and ethical progress of the individual so that they may develop characters of world citizen. This philosophers were very much conversant with the socioeconomic problems of Indian masses, their poverty and illiteracy. Therefore, while drawing the details of their schemes of education they have paid attention for making education a means of livelihood.

Despite the excellent spiritual concept of Indian philosophy and thought the creative process of education was definitely hindered by caste system. by extreme poverty of the general mass because

of social-economical discrimination and because of the disinterest in agriculture, in scientific knowledge, and in technology. These latter areas of education led Western countries to great economic development but in India we could not develop the socio economic infrastructure for the development of the mass. There is no doubt that India pioneered a creative approach towards spiritualism but we lacked the basic necessities of human existence like democratic education, adequate food, and nutrition, health care, and technological development. After independence, there was a definitive attempt to change the educational scenario for the amelioration of these drawbacks. The current philosophy of education adopted in our Constitution is the following :

1) Democratic education, i.e. education for all not hindered by caste, creed, religion, or gender.

2) Secular education independent of religious bias.

3) Socialistic pattern, social justice, and equal opportunity for all of the society.

The International Commission on Education with professor JacuesDelors as chairman was organized by UNESCO. The Commission (Delors Commission) submitted its report (1996) named as "Learning: The Treasure Within" as the fundamental philosophy of education with 21st Century. The educational philosophy presented here in the background of globalization and especially globalization of education. This report considered four fundamental pillars of education and they are: (i) Learning to know, (ii) Learning to Do, (iii) Learning to Live Together, and (iv) Learning to Be.

The First pillar is 'Learning to Know' or '*Gyana Yoga*' (Indian Philosophy) which means getting the knowledge. In this backdrop of expanding knowledge scenario of the world the Learning to know is not only acquisition of knowledge but also to develop skills how to learn so many useful knowledge effectively and within a short time i.e., learning to learn.

The Second pillar is 'Learning to Do'. This means *Karma Yoga.* This include learning the skill to apply the knowedge gained for human welfare. It should not be miss-construed only as vocational education. In the modern technology oriented society including India we need technology trained skilled workers for handling modern technique like Information Technology. Biotechnology, Environmental Studies, and Nanotechnology.

The Third Pillar is 'Learning to Live Together' which means *Saha Yoga.* This means let us all work together, let us all live together, let us all achieve together. Learning to Live Together involves building bridges between different societies, different cultures, and different countries and not building walls, barricade, wars, and estruction of the other countries, Here students will learn social values, the values of co-operation, harmony, and democratic values. Educational philosophy of this pillar is that let us all (man, animal, and all living organism) live together without causing any damage to the environment and the society.

The Fourth Pillar is 'Learning to Be' is most exciting. This can be considered as 'AtmanamRiddhi.' It emphasizes total development of a person to the fullest potentiality of the individual. Vivekananda considered this as drawing out the best in man. In the language of the Commission "So as better to develop one's personality and be able to act with greater autonomy judgment and personal responsibility. These four fundamental philosophical paradigms of education has been accepted by the Ministry of Human Resource Development, Government of India.

Question :

Let Us Check Our Progress

1. Why the heterodox schools of philosophy are called nastika?
2. What is Moksha?
3. What is Veda?

2.1.8 SUMMING UP

We discussed the concept of Indian philosophy and its relation to education. We observed that the educational philosophy is very vital and most important in the teaching, learning system of a country.

Philosophy, it may be concluded, indispensable for every aspect of life and much for education which prepares the man for complete living. From different angles of the educational problem there is a demand for a philosophical foundation of education. All educational questions are ultimately questions of philosophy. It is the basis of education, All educational efforts and achievements become purposeful by philosophy. It is essential if we want to evolve a required type of personality of the child after education. Real educational progress is the product of philosophy. Great educational advances have always been brought forth by intuitive insights of great philosophers. Now India is on the threshold of modernization. She has dedicated herself to the pursuance of the modern values of democracy, socialism, and secularism. The Constitution of India which is an expression and declaration of the highest ideals, values, and aspirations of the Indian people as a whole seeks to all its people equality, liberty, and justice, So there is an urgent need for a critical evaluation of our philosophical tradition. Such an evaluation involves reassessment and re-interpretation of the past, identification of such strands as are supportive of the new outlook and an assessment of the extent to which they can be harmonized with it. Of the many positive elements in our traditions are: devotion to duty and discipline, selfless action, belief in the oneness of all life, spirit of toleration, concern for welfare of all mankind commitment to truth and non- violence. Traditional ideas and valuesshould not be taken as rigid and inflexible. They need to be continually reassessed and re-interpretedin the light of new experience.

The significance of Indian philosophy lies in the utmost importance given to the determination of the ideals and way of life rather than formulation of theoretical views of the universe. Indian philosophy is not individualistic and pessimistic. Though Indian philosophy points out relentlessly to the miseries we suffer, it also suggests a message of hope showing of overcoming the sorrows. So it is also of optimistic nature.

Education should aim at the all-round development of child's personality by rebuilding it around the Four Pillars of Education as suggested by Delors' Commission, Learning to know, Learning to Do, Learning to Live Together, and Learning to Be.

2.1.9 SUGGESTED READINGS

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2.1.10 ASSIGNMENTS

1. Discuss the common characters of the Indian philosophical systems.

2. State the relationship of Indian philosophy and education.

3. Name and analyze the four pillars of education as suggested by International Commission on Education.

Unit 2

Nyaya School of Philosophy

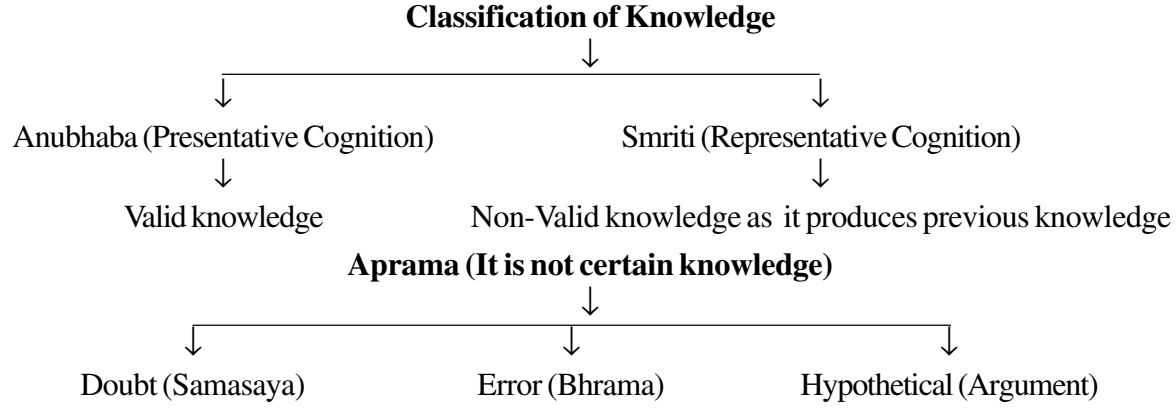
CONTENT STRUCTURE:

2.2.1 : Introduction
2.2.2 : Objectives
2.2.3 : Nyaya Philosophy
2.2.4 : Metaphysics of Nyaya Philosophy
2.2.5 : The Nyaya theory of knowledge - Epistemology
2.2.6 : Axiology: Self and Liberation
2.2.7 : The Educational Implications
2.2.8 : Let us sum up
2.2.9 : Suggested Readings
2.2.10 : Assignments

2.2.1 : INTRODUCTION:

Now we are going to discuss different schools of philosophy and its educational implications. We know, philosophy and education is interrelated and interdependent. Education is sourced from philosophical truths. The people used to take education from different subjects like Kavya (literature), Nataka (drama), Alandara (the torric), Tarka (logic) and Vyakrana (grammar). The basic objective of this education system is to develop quality of life. Here the education system is life centric. Life have been exposed through philosophical principles for the attainment of highest truth where philosophy and education superimpose to each other. Indian schools of philosophy contribute to humanize their education system by their life long education process, where philosophy and education go hand in hand. Indian schools of philosophy are divided broadly in two categories, namely orthodox (astika) and heterodox (nastika). The astika believes in the authority of Vedas. The nastika does not consider the Vedas as infallible.

Before going to discuss schools of philosophy let us consider the classification of knowledge according to Indian Philosophy —



From the Nyaya Philosophy it will be clear that how presentative cognition is possible through different sources of knowledge. Here knowledge is possible through the interaction of objects with sense organs.

Philosophy is a system. The systematic structure of philosophical though is unfold into three subsystems such as :

1. Epistemology - theory of knowledge,
2. Metaphysics - deals with reality of the world, and
3. Axilogy - related to the values of different philosophical schools.

Education as a discipline we try to elaborate our ideas regarding the epistemological dimension of schools of philosophy as because it will help to extract educational objectives and other necessary principles.

2.2.2: OBJECTIVES

After complited this unit you will be able :

- To extract educational thoughts from Nyaya Philosophy.
- To apply the concept of Nyaya Philosophy in educational systems.
- To study the epistemological views of Nyaya schools of philosophy.

2.2.3 : NYAYA PHILOSOPHY :

The Nyaya and Vaisesika Philosophy are the alike philosophy admitting pluralistic realism.

For explaining reality, they admitted reality of God, the finite souls, physial things, atoms of earth, water, fire and air, space time and ether.They admit the same views regarding axiological stand point.Both the philosophy able to differentiate distinctness of finite souls and physical objects.

Besides their similarity they differ in the following grounds:

1. Nyaya emphasizes Epistemology and logic and vaisesika given thirst on metaphysical aspects.

2. Nyaya philosophy recognizes four means of valid knowledge perception, inference, comparison and testimony but the vaisesika recognizes perception and inference as valid source of knowledge.

3. The Nyaya advocates sixteen categories while vaisesika recognizes seven categories.Kanada considered six categories for explaining reality. They are the Substance (dravya), quality (guna), action or motion (karma), generality (samanya), particularity (visesa), Inherence (samavaya). Later on non existence was added as seventh category.

Nyaya advocates sixteen categories for explaining reality given below:

(1) The instruments of valid knowledge (pramana) are perception, inference, comparison and testimony.

(2) The objects of valid knowledge (prameya) are self, body, sense-organs, objects, knowledge, manas, voluntary actions, faults, transmigration, fruits of actions, pain and liberation. Self comprises God and finite souls. Objects are the physical elements and their sensible qualities.

(3) Doubt (samsaya) is indefinite knowledge of an object as either one or ' the other, in which the mind oscillates between two alternatives.

(4) Motive (prayojana) is the end of voluntary actions, which is the attainment of good or the rejection of evil.

(5) An example (drstanta) is an instance in which a probans is found to be accompanied by a probandum, and which is admitted to be ' valid by a disputant and an opponent.

(6) A tenet (siddhanta) is proved by pramanas and accepted as true.

(7) The members (avayava) of a demonstrative inference are proposition, reason, exemplification, application, and conclusion.

(8) Hypothetical reasoning (tarka) favours one of the two alternative hypotheses by showing the absurd consequences of the other.

(9) Ascertainment (nirnaya) of the real character of an object is due to the consideration of a disputant's argument for a thesis and an opponent's counter argument for an antithesis.

(10) Discussion (Vida) is a logical debate between a disputant and an opponent with the help of five-membered inferences for the ascertainment of truth without a desire for victory.

(11) Wrangle (jalpa) is a debate actuated by a desire for victory, in which sophistical arguments are employed to vanquish an opponent.

(12) Cavil (vitanda) is a wrangle in which a person merely refutes a disputant's thesis but does not establish his antithesis.

(13) Faulty reasons (hetvabhasa) are non-reasons which appear to be valid reasons and correspond to fallacies of the middle term in western logic.

(l4) Quibble (chala) is refutation of an argument by taking a word in a sense different from what is intended by the speaker.

(15) Futility (jati) is sophistical refutation of an argument on the ground of mere similarity or dissimilarity of the subject with an example.

(16) Ground of defeat (nigrahasthana) is sophistical refutation due to non-comprehension of miscomprehension of the real character of an object. Ref: Indian Philosophy: Jadunath Sinha

Reasoning in harmony with perception and Vedic testimony yields the knowledge of reality which leads to liberation. It should be stated in the form of five members, employ valid reasons, and avoid faulty reasons. Hypothetical reasoning is subordinate to it and conducive to the ascertainment of truth; Ascertainment is preceded by doubt, hypothetical reasoning, logical inference, and discussion. Wrangle and cavil are the means of protecting the knowledge of reality from attacks. Quibble, futility and ground of defeat are the means of sophistical refutation of an opponent's antithesis, which should be avoided in Establishing one's thesis. Liberation is the highest end.'

The methodology of the Nyaya consists of enunciation (uddesa), definition (laksana) and examination (pariksa). A subject is first enunciated, then defined, and finally examined by valid reasoning. Enunciation is the statement of a subject in a. general way. It comprises division (vibhaga)

which is the enumeration of its different kinds. A subject in general is stated first, and then its subdivisions are stated.

2.2.4 : METAPHYSICS OF NYAYA PHILOSOPHY :

Nyaya theory of causation is known as 'astkaryavada' or 'armbhavada'. They viewed that effect is produced by a cause but the effect and the cause are not one and the same. The effect is a new product comes to the existence which was not their earlier in the cause. Hence, every effect is a new product which was not found previously in the cause. For example, a pot is made by clay.Here 'clay' is the cause and 'pot' is its effect. According to Nyayikas, pot is a fresh creation, a new beginning which did not exist before in the clay. In this way they uphold the theory 'asatkaryavada'.

Nyaya defend pluralistic realism and believing in metaphysics through the conception of Padartha having different categories are substance, quality, action, universal, inherence and absence. They will be discussed individually below.

1. Substance

The Nyaya view of the reality is alike as the vaisesika. It is composed by five physical elements,earth, water,fire,air and ether.

Metaphysically Nyaya believes in Pluralistic realism. They perceived the plurality of the universe through Substances which are the essential component of Nyaya metaphysics as other categories.

a. Paradigmatic substances include the indestructible atoms of earth, water, air and fire;

b. composite substances like pots and trees;

c. inner "selves" (*atman*) which are the eternal, reincarnating souls; and God, a unique *atman*.

The Nayaya provide a number of arguments in support of a non-material self. A standard argument runs as follows: Things like desire, cognition, experiences of pleasure and pain and volition are qualities. All qualities inhere in substances. Therefore, there is a substance to which desire and the rest belong. This conclusion is then followed by an argument from elimination. None of the material elements like earth or water are the bearers of desire and the rest.

Nyaya's response is to defend the existence of substances generally and selves in particular. It argues that composite substances have capacities beyond the mere collection of their parts . Moreover, Nyaya argues that the Buddhist reduction, if carried out consistently, would lead to an absurdity. We can see composite substances, but we cannot see entities like atoms, which exist below our perceptual threshold. But if substances are nothing but heaps of micro objects, which themselves can be reduced, and so on, then we should not be able to perceive substances at all. Thus, there must be a unified identity for individual substances which undergirds their availability for perceptual experience.

2. Quality

Qualities (*guGa*), are attributes which qualify substances. Unlike universals they are not repeatable. Odour, taste, colour touch and sound are the qualities of physical elements.

3. Action

Like qualities, actions (*karma*) inhere in substances and are non-repeatable tropes. But they have causal capacities which qualities lack, particularly the ability to engender conjunction and disjunction between substances.

4. Universal

According to Encyclopedia of Philosophy Naiyayikas argue that universals are required to account for common experiences of a recurring character, for the functioning of language, and to undergird causal regularities in nature (which are held to be relations between universals). As its theory of universals is developed, Nyaya recognizes entities which are like universals, but which are, for theoretical reasons, excluded from their ranks (*upadhi*). Udayana would famously chart the reasons for such exclusion. These are: (i) A true universal must be capable of more than one instance. *Spacehood* would not be a true universal, as it can only have one instance. (ii) Two universals which have the same exact instances are in fact the same universal, simply under two designations. (iii) Should two apparent universals share an instance, while one is not entirely subsumed within the other, both are mere *upadhis*. This criterion, which is the most controversial of the "universal-blockers," suggests that the operative notion of universal here is something akin to natural kinds. (iv) Any supposed universal that would, if accepted, lead to an infinite regress (for example *universal-hood*), is not accepted. (v) There is no universal for individuators (see below), as their ontic function is to introduce primitive differentiation. (vi) There is no universal for inherence (see below), as this would engender a vicious infinite regress: inherence would require further inherence between it and its universal "inherencehood", and so on.

5. Inherence

Inherence is a relation which is central to Nyaya's ontology, by which qualities, actions, universals, and individuators relate to substances, by which universals relate to qualities and actions, and by which wholes relate to their parts. In the first instance, the brown color of a cow inheres in the cow. In the second, the universal brownness inheres in the quality trope brown. In the third, my car, a substance, is a single entity, which inheres in its various parts. Thus, your touching just one part of my car is enough to justify the claim "you touched my car" *simpliciter*. Nyaya contends that inherence is a self-linking property. It does not rely on other instances of inherence in order to "glue" it to the two elements which it relates.

6. Absence

The ontological reality of absence or negation is denial of an absolutely non-existent entity. Uddyotakara famously argues that negation is often perceptible: looking at my desk, I see the absence of a coffee mug, and such absence is "located" on the surface my desk. In this spirit, absence is generally thought of as a qualifier (*viœecana*) of some object or property, which is the qualificand (*viœecya*). The four basic kinds of absences accepted by Nyaya in its mature period are prior absence (of something before it is created), absence-by-destruction (of an object after it is destroyed), absolute absence (of something for some locus where it could never exist), and mutual absence (between two separately existing objects).

7. Causation

The Nyaya philosophy differs from Sankhya doctrine of Satkaryabad**.** The Nayaya philosophy advocates Asatkaryabad. The preexistant of cause is not supported by Nyaya. Preexistance is not possible in case of produced effect. According to J.N.Sinha "There can be no relation between an existent cause and a non-existent effect. The Nyaya replies that an effect is non-existent before its

production and becomes existent after its production, so that it can inhere in its material cause when it is produced."

2.2.5 : THE NYAYA THEORY OF KNOWLEDGE - EPISTEMOLOGY

The Nyaya Philosophy was founded by the great sage Goutama. It is primarily concerned with the conditions of correct thinking and the means of acquiring a true knowledge of reality. The ultimate reality of this- philosophy deals with the objects through which knowledge is possible because all knowledge in any way related to objects but with an independent entity. In this reason Nyaya Philosophy described as pluralistic realism. Knowledge or Cognition is the manifestation of objects through our senses. In Nyaya Philosophy objects are nine —

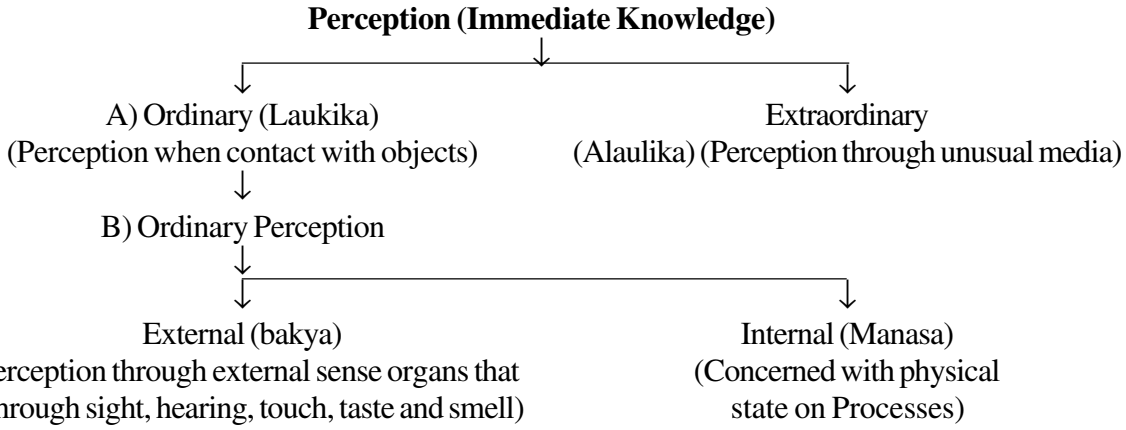
(1) Prthibi (earth), (2) Ap (water), (3) Tejas (fire), (4) Vayu (air), (5) Akasa, (6) Kala (Time), (7) Dik (Space), (8) Ataman (Self), (9) Manas (Mind). The different objects (dravyas) with their attributes can explain the universe and that is the fundamental aspects of acquiring true knowledge in Nyaya Philosophy.

The Nyaya theory of reality is based on the Nyaya theory of Knowledge. There are four distinct and separate sources of true knowledge. They are (1) Perception, (2) Inference, (3) Comparison and (4) Testimony.

Now we are going to discuss different sources of knowledge from Nyaya Philosophy—

(1) Perception : Perception is immediate Cognition. It is a form of knowledge which manifests by contact of a sense organ with an object.

Classification of Perception



The ordinary or Laukika Perceptions are of six forms - Visual, auditory, tactual, gustatory, alfactory and the internal or mental.

The extraordinary or alaulika perception are of three kinds - Samanyalaksana, Janaalaksana, Yaogaja. Three modes of ordinary Perceptions

(i) The First is Nirvikalpa or indeterminate which is cognition of things without any explicit interaction or characterization.

(ii) The second is Savikalpaka or determinate in which the object is judged as passed by some characters.

(iii) The third is Pratyabhijna i.e. recognition in its literacy meaning. It is a recognition of some object i.e. a cognition which was cognized before.

In another classification it is divided into three kinds of inference —

(1) Kevalanuayi (Cause and effect positive relationship)

(2) Kevalavyatireki (Besides causes and effect relationship)

(3) Anavayavatireki (both Positive and Negative relationship present here)

Comparison

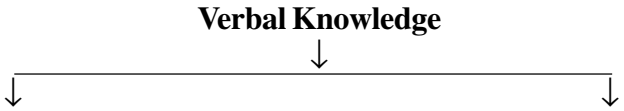
Comparison is the third source of valid knowledge which means to place things together to estimate their similarity and dissimilarity. It is the relationship between a name and things.

For example, a man who does not know what is a buffalo may be told that it is an animal like the cow. If the man meets faces such an animal in a place and can able to recognize it as a buffalo will be due to comparison with his previous knowledge of analogy between two things.

Testimony (Sabda)

Testimony or Sabda means Verbal knowledge which can communicate information to other. In Nyaya philosophy it is considered as a Pramana as an independent entity. The Nyaya admits verbal statement is valid when it works from a trustworthy person.

Verbal knowledge may be classified in two ways —



1) Drstartba (Relating to perceptible objects) 2) Adrstartha (Relating to imperceptible objects)

Testimony or Sabda are of two kinds according to another classification :

(1) The scriptual - It is the words of GOD. It is thus perfect and infallible by its very nature.

(2) The Secular - It is not valid knowledge. It is the testimony of human being and may be true or false. Only that which proceeds from trustworthy person is valued.

Inference

The conception literary means a cognition or knowledge which follows another knowledge (anu means after and mana means knowledge). To explain the conception of inference we can consider the following syllogism:

The hill is fiery, because it smokes and whatever smokes is fiery. Here we pass from perception of smoke in -the hill to the knowledge of the existence of the fire in it. On the ground of our previous knowledge of the universal relation between smoke and fire, it ascertains the presence of fire due to smoke as it confirms the presence of smoke is the medium through which attributes of fire is being confirmed.

The constituent of the above syllogism is given below

(1) The hill is the minor term i.e. subject under consideration.

(2) Fire is the major term i.e. which we have to prove.

(3) Smoke is the middle term indicates the presence of fire.

The first step (The hill is fiery) in inference is the apprehension of the hetu (smoke) in the Pakasa. The second step (Because the hill is smokey) is recollection of the universal relation between hetu and Sadhya (Smoke and Fire). The last step is the cognition of Sashya (fire) as related to Pakasa.

Gautama suggests to three types of Inferences —

(1) Puravat (Reasoning based on resemblance)

(2) Sesavat (Reasoning based on .elimination)

(3) Samayatodrasta (Reasoning based on inner support)

Besides this, we have two kinds of classification for inference m Nyaya—

(1) Svartha (Inference for self)

(2) Parartha (Inference for others)

These are the four valid sources through which knowledge can be attained. The greatest contribution of Nyaya Philosophy is in its methodology which is almost accepted by the other systems.

The Nyaya view is undoubtedly a natural and necessary platform for the evolution of thought anjj its practice for humanizing the betterment of self and society.

2.2.6:AXIOLOGY

1. Liberation is absolute cessation of pain and sufferings according to Nayaya Philosophy.

2. True knowledge of the self ultimately leads to liberation. It destroyes egoism and able to differentiate of the self with the body.

3. Liberation can not be achieved by the performance of duties only.The practice of yoga, austerities, the performance of duties and abstension from sins subsidery to the acquisition of true knowledge.

4. According to Nyaya, the self can neither be identified with mind (manas) nor can be identified with pure consciousness, but understood as consciousness belonging to an individual/subject.This is so because mind is atomic and unperceivable and hence devoid from perceivablequalities. On the other hand, consciousness belongs to the individual self but not same as self.

5. Thus, consciousness is not the self but only an attribute of the self. It is an accidental attribute of the self. The self in its original state has no consciousness and hence devoid of cognition and knowledge. But when it comes to contact with sense organs it acquires consciousness.

6. Liberation is the state refrain from all kinds of sufferings and bondage those arises because of the self's association with body and sense organs. Nyayikas uphold association and attachment are the sources of pain and suffering.

Hence, as long as self is attached with body and sense organs, it goes through the cycles of birth and death. This implies Nyayikas believe in law of karma. Liberation, according to Nyaya, can be achieved when there is cessation of karmic chain or karmic influx. It is a state where self is detached from body and sense organs.

7. Voluntary actions only are the objects of moral judgements. The Nyaya seems to advocate the doctrine of self determinism. The self freely wills and acts to realze its own good.

The Nyaya recognizes three kinds of actions leading to moral judgement;

1. Bodily action- a. Charity
   b. Succouring the distressed
   c. Social Service
2. Verbal action- a. Truthfulness
   b. Benificial speech
   c. Agreeable speech
   d. Study of the Scriptures
3. Mental action: a. compassion
   b. dispassion for worldly enjoyment
   c. faith in future life

The Concept of God

According to the Nyaya Philosophy, God is the creator, sustainer and destroyer of the universe.He is the efficient, but not the material cause of the universe. The material cause of this universe is the eternal atoms of earth, water, fire, and air. He who desires the universe remains in the state of stability and tranquility. He has the real knowledge of all objects and occurrences. Thus, he is treated as an omnipresent and omniscient being.

2.2.7 : THE EDUCATIONAL IMPLICATIONS:

Aims : Emphasis should be given :

(1) Development of perception.

(2) Development of argumentations through cause and effect relationship.

(3) To promote verbal knowledge through real objects.

(4) To develop reasoning ability among learners.

(5) Learners will be able to compare different sources of knowledge.

(6) Development of creative thinking by applying the process of inference.

(7) Development of values through proper cognition.

(8) The Nyaya epistemology deals with the nature of valid knowledge, its instruments, extrinsic validity and invalidity of knowledge and the tests of truth.

(9) The Nyaya definitions of knowledge are realistic. Truth is correspondence of an apprehension with its object.

Curriculum : According to Nyaya Philosophy curriculum should be based on realistic approach. To know the world through the objects is the ultimate reality of this philosophy. So the curriculum must follow the basic principles of the realistic world and the values of life.

Methodology : Education is provided through discussion method. It helps learners to determine reasoning ability. Both inductive and deductive reasoning are used during argumentation to prove the; logic of any particular topic.

Question:

Let Us Check Our Progress

1) In Nyaya Philosophy what are the different sources of knowledge.
2) Mention the different educational objectives according to Nyaya Philosophy.

2.2.8 : LET US SUM UP:

The sage Goutama is the founder of the Nyaya Philosophy. This school unlike other schools of Indian philosophy concerns on the valid reasoning to acquire knowledge of the reality.

Epistemology: According to the Nyaya Philosophy, knowledge manifests with objects. There are two sorts of knowledge, valid and invalid. Valid knowledge is further divided into four; perception, inference, comparison, and verbal testimony whereas, invalid knowledge comprises memory, doubt, error, and tarka. **Perception**: It is the knowledge arises due to the association among self, mind, sense organs and objects. Perception is of two sorts: Ordinary and Extraordinary. **Inference:** There are there premises and three different terms required for an inferential argument. The premises are respectively named as; major premise, minor premise and conclusion. The three different terms are; major term, minor term, and the middle term. Vyapti relation subsists in an inferential argument. **Comparison**: Knowledge arises out of the relation between a name and the object it denotes is regarded as comparison. **Sabda**: Sabda is a valid source of knowledge. The Nyaya explains sabda is a reliable statement of anyone. Sabda is divided into two kinds: a) Drustartha and Adrustartha b) Laukika and Alaukika. **Theory of Causation:** The Nyaya Philosophy upholds astkaryavada which states that effect is not same as the cause. Effect is a new creation or a new bringing of its existence. The effect did not exist in the material cause prior to its production. **Self and Liberation:** There are innumerable self exists in the universe. Since the self possesses consciousness, it is trapped by the law of karma. Hence, suffering and pain are the obvious phenomenon. To get rid from all sorts of sufferings the self seeks liberation. Liberation can be achieved when there will be cessation of law of karma. **God:** God is the creator, sustainer and destroyer of the universe. He regulates the earth, solar systems and the movements of planets and becomes identified as an omnipresent and omniscience being in the cosmos. According to Nyayikas, the world is created out of the four eternal atoms as its material cause. These are; space, time, mind and soul. God is being the efficient cause of universe is responsible for its maintenance, and destruction. Thus God, as the first efficient cause of the universal forces, is the creator of the world. God is one, infinite, eternal, and the universe of space and time, of mind and soul, does not limit him. God is said to possess six perfections: infinite glory, absolute sovereignty, unqualified virtue, supreme beauty, perfect knowledge, and complete detachment. The Nyaya philosophy offers an argument to establish the existence of God known as causal argument. On the line of this argument, it is stated that the entire universe is constituted of enumerable elements both subtle and gross. A human being by possessing limited knowledge cannot be the creator of the vast universe. This implies the creator is one who is beyond space and time, must be eternal and devoid of all limitations. And, all these features are therein Supreme Being or God. Hence, God is the creator or designer of the universe.

2.2.9 SUGGESTED READINGS:

- Barlingay, S.S. (1965), *A Modern Introduction to Indian Logic*. Delhi: National Publishing House,.
- Chatterjee, S.C. (1950), *The Nyaya Theory of Knowledge*. Calcutta: University of Calcutta Press,.
- Vidyabhusana, S.C.(1971),*A History of Indian Logic.* Delhi: Motilal Banarsidass Publication,.
- Sinha J.(1952),Indian Philosophy-vol –I & vol- II, Motilal Banarsidass Publishers pvt.Ldt, Delhi.
- Encyclopaedia of Philosophy

2.2.10ASSIGNMENT

1. Briefly discuss the Metaphysical view of Nyaya Philosophy.
2. What do you understand Theory of Knowledge through Nyaya Philosophy?
3. What do you mean the Axiology of Nyaya Philosophy?
4. Describe the Educational implication of Nyaya Philosophy.

Unit 3
SAMKHYA OR SANKHYA SCHOOL OF PHILOSOPHY

Content Structure

2.3.1: Introduction
2.3.2: Objectives
2.3.3: Samkhya Philosophy
2.3.4 : Metaphysics of Samkhya Philosophy
2.3.5 : Epistemology of Samkhya Philosophy
2.3.6 : Axiology: of Samkhya Philosophy
2.3.7 : The Educational Implications
2.3.8: Let us sum up
2.3.9: Suggested Readings
2.3.10: Assignments

2.3.1 : INTRODUCTION

In this unit you will find the SaAkhya's theory of causation, distinction between purusa and prak[ti, discussion on the gunas of prakriti; sattva, rajas and tamas, and briefly a description of Sankhya Philosophy in terms of knowledge, reality and values.

There are two views on the origin of this school. Some are believed that the word SaAkhya is derived from the word 'SaAkhya' which means number as well as right knowledge. Right knowledge is about understanding the reality by specifying the number of ultimate constituents of the universe. Others viewed that SaAkhya means 'perfect knowledge' and that is about the reality. With these introductions now let us know SaAkhya's metaphysics.

2.3.2: OBJECTIVES

After complited this unit you will be able :

- To extract educational thoughts from Samkhya Philosophy.
- To state the Metaphysical view of Samkhya Philosophy
- To study the epistemological views of Samyakha schools of philosophy.
- To apply the concept of Samkhya Philosophy in educational systems.

2.3.3 : SAMKHYA PHILOSOPHY

The word samkhya means according to Wikipedia empirical or relating to numbers. Although the term had been used in the general sense of metaphysical knowledge before, in technical usage it refers to the Samkhya school of thought that evolved into a cohesive philosophical system in early centuries. The Samkhya system is called so because it 'enumerates' twenty five Tattvas or true principles; and its chief object is to effect the final emancipation of the twenty-fifth Tattva, i.e. the puruca or soul.

2.3.4 :METAPHYSICS : SAMKHYA PHILOSOPHY:

Metaphysically Samkhya Philosophy is regarded as dualistic realism. It believes two ultimate realities Prakṛti and Purusa. But that realty is plural . They differ form each other, as like, subject and object. Purusa is having subjective reality and Prakṛti can be characterized by objective realty.

The Samkhya replies that Prakriti is the ultimate cause of all objects, including our mind, body and sense organs. The worldly creation is being expressed through cause effect relationship. Cause and effect are two inseparable components stand for all sorts of creation in the cosmos. Hence, all objects of the world are bounded in the chain of cause-effect relation. This relation Samkhya named as 'satkaryavada' and populated as 'theory of causation'.

Theory of Causation-Sat karyavada

1. The Samkhya theory of evolution of the cosmos out of prakrti is based upon its theory of causation. The Samkhya maintains that the effect pre-exists in the cause in a potential condition ; the effect is a modification (parinama) of the cause ; it is a manifestation, development, or redistribution of the cause. The effect is not a new beginning (arambha) as the NyayaVaisesika holds. It is not a new creation. It is not non-existent (asat) in the cause. It exists (sat) in the cause prior to its manifestation.

2. So the Samkhya advocates the doctrine of Satkayavada as distinguished from the Nyaya-Vaisesika doctrine of 'Asatkaryavada or Arambhavada. The Advaita Vedanta also holds that the effect pre-exists in the cause, and so advocates the doctrine of Satkaryavada. But the Samkhya maintains that the effect and the cause are equally real, the former being a modification (parinama) of the latter, while the Advaita Vedanta maintains that the effect is an unreal appearance (vivarta) of the cause which is real. The Brahman is the ultimate reality ; it is the substratum (adhisthana) of the world appearance. In this sense, it is the ultimate cause of all apprances (vivarta) which have only empirical reality.

3. The Samkhya, on the other hand, holds that the cause and the effect both have ontological reality ,—the cause being the unmanifest condition of the effect, and the effect being the manifest condition of the cause: The Samkhya advocates Parinamabada while the Advaita Vedanta advocates Vivartavada, both of which are diiferent forms of Satkaryavada.

The effect is existent in the cause ; because what is nonexistent can never be brought into existence ; because a determinate relation subsists between the material cause and its effect ; because all effects are not produced in all places, at all times ; because a competent cause only can produce an effect for which it is competent ; and because the effect possesses the nature of the cause.

Production is manifestation (avirbhava). Destruction is disappearance (tirobhava). It is absorption into the cause (karanalaya). It is passing into a latent condition. Production is transition from an implicit to an explicit condition. Destruction is transition from an explicit to an implicit condition. Production is unfoldment (abhivyakti). Destruction is enfoldment. Production is development. Destruction is envelopment. Production is evolution. Destruction is dissolution. Gold is transformed into ornaments. Ornaments are melted into gold. Clay is transformed into jars. Jars are powdered into clay. There is neither creation of the non-existent nor destruction of the existent. This view is

supported by the Gita which says: "There is no creation of the non-existent, there is no destruction of the existent." So production is not creation of a nonexistent entity, but manifestation of a pre-existent latent effect.

The effect is identical with the cause in essence. The Samkhya Offers the following arguments to prove the identity of the cause and the effect:

(l) The effect is not different from its material cause, since it is a property of the cause and inheres in it. A cloth is not different from the threads which constitute it; it is a property of the threads and inheres in them. If an object is different from another is essence, it can never inhere in it. A cow is different from a horse. So the cow cannot inhere in the horse. But a cloth inheres in the threads; so it is not different from them in essence.

(2) There is the causal relation between the material cause and the effect constituted by it. So they are not different from each other in essence. The causal relation can never subsist between two objects which essentially differ from each other. There is no causal relation between a jar and a cloth, which are essentially different from each other. But the causal relation subsists between a cloth and the threads. So they cannot differ from each other in essence.

(3) If two objects are different form each other, they can be conjoined with each other, for instance, a pool and a tree, and they can exist separately from each other, for instance, the Himalayas and the Vindhyas. But there is neither conjunction nor separate existence of a cloth and the constituent threads. So they are not different from each other in essence. The material cause and the effect cannot be brought into conjunction with each other; nor are they capable of separate existence. Hence the material cause and the effect are not different from each other in essence.

(4) The material cause and the effect are identical with each other in essence, because there is quantitative equality between them. The threads and the cloth are equal to each other in weight. There is quantitative equivalence between them. The weight of the cloth does not differ from that of the constituent threads. This fact conclusively proves the essential identity between the material cause and the effect.

Prakrti is made of essence (sattva), energy (rajas), and inertia (tamas). They can neither be created nor annihilated. The cause contains these three elements. The effect also contains them. It is a mere redistribution of these three elements in another form. The Law of Causation is a form of the Law of Conservation of Energy or Persistence of Force.

Ref: J.N. Sinha.

Prakṛti

Prakṛti is the ultimate cause of the complex and manifold product of the universe. It is regarded as the first cause. All effects of the universe are based upon it. Being the first element of the universe, Prakṛti itself is uncaused, eternal, and all pervading.

Individual things are non-eternal and dissolved into material cause . But prakriti is the ultimate cause which is eternal into which the whole world is dissolved.

Objects are the effects of Prakṛti. These are dependant, relative, many and non-eternal because they are created and destroyed. But Prakṛti, on the other hand, has neither beginning nor end. It is

unborn, independent, absolute, one, eternal and beyond creation and destruction. Objects are limited within the space-time continuum but Prakṛti is beyond of it. Objects are manifest and composite but Prakṛti is unmanifest and without parts. Thus, Vyasa says that Prakṛti is both 'is' and 'is-not

There are five arguments offered by Isvarakrishna for the existence of Prakṛti. These are as follows;

(i) The world is constituted of manifold of objects. The existence of all the objects must have a cause. This is so because they themselves can't be the cause of their creation. Further, they are limited, dependent, relative and have an end. Hence, the cause which creates them should be unlimited, exists beyond creation and destruction, independent and eternal. Such a cause is the Prakṛti.

(ii) The world is an amalgam of all varieties of objects. However, some common qualities are found among all the objects. As a result, pleasure, pain, and indifference subsist among all varieties of objects. This implies that there should be a common cause which possesses these three qualities (pleasure, pain and indifference) and share in all the objects once they created. This cause is Prakṛti.

(iii) The activity is generated in the potent cause. All effects arise out of causes in which they were present in an unmanifest form. Evolution means the manifestation of that which is involved. The world of objects which are effect must therefore be implicitly contained in some world cause.

(iv) Every cause has its effect. Thus, cause and effect are distinct from each other although the effect exists in its material cause prior to its production (satkaryavada). By implication therefore, the universe must have a cause. This cause unmanifests the universe in its totality. This cause in nothing but the Prakṛti.

(v) Samkhya satkaryavada accepts the cause-effect relation as an inherence form which implies every effect inheres in its material cause. This holds that if the effect rolls back toward its cause, then it will dissolve in its cause. This helps to maintain the homogeneity in the universe. To balance universe from where everything manifold is regarded as Prakṛti.

Gunas of Prakṛti:

The gunas are the ultimate elements of constructing prakriti. Prakriti is the combination of sattva, rajas and tamas. Sattva has the function of manifestation. Rajas has the function of activity and Tamas has the function of retardation.

(vi) **Sattva:** Sattva has the function of manifestation. The tendency towards conscious manifestation in the senses, the mind and the intellect; the luminosity of light and the power of reflection in a mirror or crystal are all due to the operation of the element of Sattva in the constitution of things.Sattva manifests an object to consciousness.

(vii) **Rajas:** Rajas has the function of activity. It is active because of its mobility and stimulation. It is also the nature of pain. Rajas makes an object move and act.It is the principle of activity.

(viii) **Tamas:** Tamas has the function of restraint. It is opposed to the Sattva gunas because it is heavy, laziness, drowsiness, sleep and alike. It produces ignorance and darkness and obstructs activity.Tamas is the inertia ,resistance or restraint.

Sattva, Rajas, and Tamas contradict as well as cooperate among each other to produce an object. These three gunas are present in all the objects of the world. None of them exist alone.

Among them each guna tries to dominate the other two. Hence, they can't exist in a tranquility state. As a result, they can't remain pure for a single moment. Since they are changing continuously, distortion is their nature.

Purusa

Purusa or self is an eternal reality. Purusa is the subject of knowledge. It never be an object because, the existence of object s can be proved in some ways whereas, non-existence can't be proved in anyways. Purusa is neither the body, nor the mind (manas), neither ego (ahaAkaara) nor intellect (buddhi). It is not the substance which has the quality of consciousness. It is itself pure-consciousness. It is the basis of all knowledge and is the supreme knower. It can't be the object of knowledge. It is the observer, eternally free, the impartial spectator and peaceful. It is beyond the space-time continuum, change, and activity. It is the self enlightened, self-proved and hence, causasui. It is all pervading, formless, and eternal. Its existence can't be doubted because in its absence, all knowledge even doubt is not possible. It has been described as, devoid of three gunas, negative, inactive, solitary witness, observer, knower and of the nature of illumination. According to SaAkhya Philosophy, the purusa is of the nature of pure consciousness and hence beyond the limits of Prakṛti. It is free from distortions. It's objects changes but it itself never changes. It is above self-arrogance, aversion and attachment.

There are five arguments Samkhya has given for establishing the existence of purusa. These are as follows;

(a) All the worldly objects are meant for some one. This is so because the unconscious Prakṛti can't make use of them. Hence, all these substances are for Purusa or self. Prakṛti evolves itself in order to serve the Purusa's end. The three gunas, Prakṛti, and the subtle body, all are served to the Purusa.

(b) Substances of the universe are composed of three gunas. The purusa is the witness of three gunas and he is beyond from these gunas.

(c) Purusa is a pure consciousness which is beyond our experience and analysis. It is the substratum of all knowledge both positive and negative. There can be no experience without him. This is so because he is the sole authority of all experiential knowledge.

(d) Since Prak[ti is unconscious, it can't enjoy her creation. Hence, a conscious element is needed to make use of them. Prak[ti is the one to be enjoyed (bhogya) and so there must be an enjoyer (bhokta). This argument supports the existence of Purusa.

(e) There are persons who try to get relieved from all sorts of sufferings of the world. The desire for liberation and emancipation implies the existence of a person who can try for and obtain liberation. Hence, it is enforced to accept the existence of Purusa.

On the account of SaAkhya, there are pluralities of self or purusa. All these Purusas are identical in their essences and they are embedded with consciousness. Hence, consciousness is found in all the selves. This view is similar to Jainism, and Mimansa because they believe in the plurality of selves.

Evolution

Samkhya philosophy recognizes Twentyfive principles of reality. The Prakṛti alone can't create the world because it is material and unmanifest. All evolutes are manifested in the form of prakriti. In

the same manner the Purusa can't create the world independently because it is inactive. Hence, the contact between Prakṛti and Purusa is necessary for the evolution to explain the reality and reason for its creation.

The Prakriti is the first cause of all the effects of the universe. Evolution is transition from potential to the actual, from unmanifest to manifest. It is transition from homogeneous to the heterogeneous entity. Prakriti is made by sattva, rajas and tamas.The gunas are not perceived but are expressed from their effects or modifications.

A sage named Kapila has described the order of creation which is accepted by the SaAkhya Philosophy.

The order of creation is as follows.

(i) Mahat

Mahat is the first component produced as a result of evolution. It is cosmic in its nature. it is important to mention that buddhi should not be understood as the same as consciousness. The reason is buddhi is material whereas consciousness is eternal. An important function of buddhi is to take decision which is a part of memory act. This helps to distinguish between the known and the knower. Sattva is predominately found as an attribute of buddhi. Buddhi helps to identify the soul or the atman which differs from all physical objects and their qualities.

(ii) Ahamkara

The cosmic Buddhi becomes individuated and evolves into the cosmic egoism or Ahamkara. It is the second product of evolution. Ego is identified as "I" or "mine" feelings of an individual. Every individual has buddhi, and since ahamkara is a practical element of buddhi, it is found in all individuals. Because of ego the purusa looks upon himself as an active agent, desire and strive for ends, and possesses characteristics. An individual perceives an object through sense organs. Then mind reflects on these perceptions and determines their nature. Following this, the attitude of 'mine' and 'for me' is attributed to these objects. This is nothing but regarded as 'ego'. In this product (ahamkara), all these three gunas of prakruti operates.

(iii) Manas

According to the Samkhya Philosophy, manas or mind is neither eternal nor atomic. It is constituted with parts and thus can come into contact with the different sense organs simultaneously. Mind helps to analyze and synthesize the sense-data into determinate perceptions. Being an internal sense organ, it is aware of objects belonging to the past, present, and the future.

(iv) Jñanendriyas

Jñanendriyas are known as five sense organs; nose, ears, eyes, skin, and tongue. On Samkhya views, sense is an imperceptible energy or force which exists in the perceived organs and apprehends the object. This implies, the sense is not the ears but their power of hearing. Thus, the senses are not perceptible but can infer. They are informed from the functions that they perform. The five sense organs produce knowledge of touch, colour, smell, heard, and taste. All these are born because of the Purusa and they are the result of ego or ahamkara.

(v) Karmendriyas

Karmendriyas is understood as the five organs of action which reside in mouth, ears, feet, anus, and the sex organ. They perform the functions respectively as speech, hearing, movement, excretion, and reproduction. The cause of the creation of these organs is the desire of Purusa for his experience.

(vi) Tanmatras

There are five tanmatras; sabda or sound, sparsa or touch, rupa or form, rasa or taste, and gandha or smell. All are very subtle because they are the elements of the objects. Hence, they can't be perceived but inferred. The Samkhya School viewed that the five elements; earth, water, air, fire, and ether have their origin in the five tanmatras.

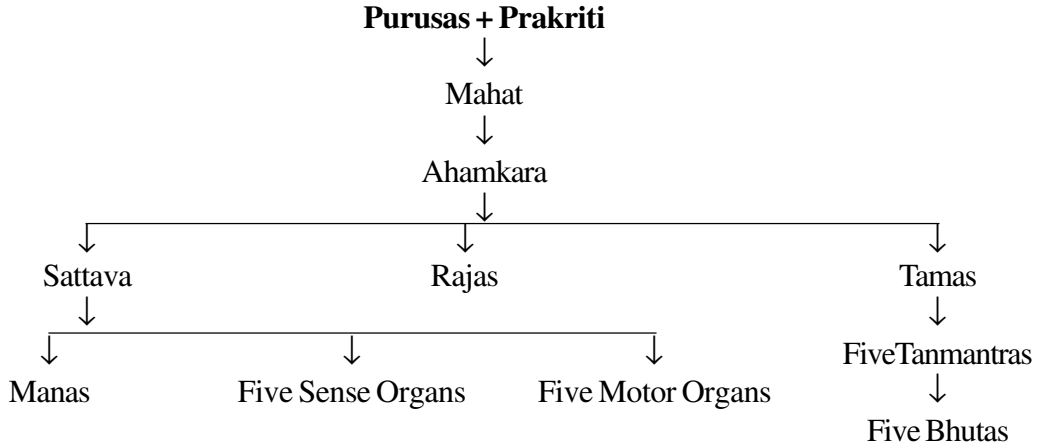
(vii) Mahabhutas

There are five mahabhutas found in the cosmos namely;

- Air or Vayu
- Fire or Agni
- Akasa or Ether
- Water or Jala
- Prithivi or Earth

Their respective qualities are; touch, colour, sound, taste, and smell. The Samkhya theory of evolution is illustrated in the following diagram for your clarity and better understanding.

The Samkhya and Yoga philosophy admits the existence of Purusas and Prakriti. Dualistic purusa and prakriti are the ultimate reality in Sankhya and Yoga philosophy. The world manifests when purusa come in contact with Prakriti. The union of Purusa and Prakriti is the reason for the evolution of the worldly things. The evolution system excluding purusas is given below:



Manas, sensory organs and other motor organs are, the instrument of attaining knowledge. Purusas is conscious part but not active being which is activated through the reflection of Mahat or buddhi. The different qualities of prakriti are unconscious objects which constitute .the material environment of the Purusa. Purusa is the cause and prakriti is the effect through which different attributes of life are expressed.

Sources of Samkhya Theory of Knowledge: Epistemology

Now we are going to discuss the sources of knowledge in the Samkhya systems.

The Samkhya theory of knowledge which explains dualistic realism. The samkhya accepts only three independent sources of valid knowledge. These are perception, inference and scriptural

testimony (sabda). The other sources of knowledge, like comparison, postulation and non-cognition, are included under these three, and not recognized as separate sources of knowledge.

Valid knowledge (Prama) is a definite and an unerring condition of some object through the modification buddhi or the intellect which reflects the consciousness of the self in it. Consciousness or intelligence really belongs to the self. But the self control immediately which apprehends the objects of the world. The self knows objects through the intellect the manas, and the senses. We have a true knowledge of objects when, through the activity of the senses and the manas, their forms are impressed on the intellect which, in its turn, reflects the high or, consciousness of the self.

In all valid knowledge there are three factors, namely, the subject (Pramata) the object (Prameya) and the ground or source of knowledge (Pramana). The modification (vritti) of the intellect, through which the self knows an object, is called Pramana. The object presented to the self through this~ modification is the Prameya. Prama or valid 'knowledge is the reflection of the self in the intellect as modified into the form of the object.

1. Perception is the direct cognition of an object through its contact with some senses. When an object like the table comes within the range of your vision, there is contact between the table and your eyes. The table produces impressions or modifications in the sense organ, which are analysed and synthesized by manas or the mind just as a mirror reflects the light of a lamp and thereby manifests other things, so the material principle of buddhi, being transparent and bright, reflects the consciousness of the self and illuminates or cognizes the objects of knowledge.

It is also called alocana or amere sensing of the object. The second kind of perception is the result or the analysis, synthesis and interpretation of sense-data by means or the mind. So it is called vivecana or a judgement of the object. It is the determinate cognition of an object as a particular kind of the thing having certain analysis and standing in certain relation to other things. The determinate perception of an object is expressed in the form of a Subject-Predicate Proposition, e.g. This is a cow, 'that rose is red'.

2. Inference is the knowledge of one term of a relation, which is not perceived through the other which is perceived and known to be invariable by related to the first.

Inference is first divided into two kinds, namely, vita and avita. It is called vita or affirmative when it is based on a universal negative proposition. The vita is subdivided into the purvavat and the samanyato-drsta. A purvavat inference is that which is based on the observed uniformity of concomitance between two things. Samanyatodrsta inference on the other hand is not based on any observation of the concomitance between the middle with such facts as are uniformly related to the major. The other kinds of inference, namely avita is what some Naiyayikas call sesavat.

3. The third pramana is Sabda or testimony. It is constituted by authoritative statements and gives the knowledge of objects which cannot be known by perception and inference. Sabda is generally said to be of two kinds, namely, laukika and vaidika. It is the testimony of sruti or the Vedas that is to be admitted as the third independent Parmana. The Vedas give us true knowledge about super sensus relatives which cannot be known by perception and inference.

2.3.6 : AXIOLOGY:

1. The self, who is eternal, pure conscious, and all pervading, due to its ignorance identifies itself with the manas, ahAkara, and mahat which are the products of Prakrti. Thus, it experiences the

worldly pain and suffering. The universe is constituted of manifold objects, and since objects are embedded with gunas and selves and even interrelated among them, suffering is unavoidable. This is so because the SaAkhya claims that wherever there is guna there is suffering. Further, they said that the life in heaven is also controlled by the gunas.

2. Samkhya philosophy starts with acceptance of universalness of three sorrows–

Spiritual (related to soul, mind and body),

Physical (related to outer world) and

Divine (related to horoscope and divinity).

According to Samkhya, emancipation or salvation is the name of riddance from sorrows.

3. Samkhya believes that our Body, Mind and Soul, generated from the combination of Purusa and Prakruti and ultimate liberation is possible after attainment of right knowledge about Purusa and Prakriti so that one can differentiate the existence of Purusa and Prakriti.

4. Alike vaisesika Nyaya believes Ignorance is the reason of our sorrows. According to Samkhya its main cause of ignorance when Purusha accept Buddhi's work as his own work, i.e. he experiences Satva, Raja and Tama properties of Prakriti, then it is called Ignorance, so that he become the consumer of happiness– sorrows otherwise he is without properties (Nirguna), he should not experience happiness–sorrows. To know original form of any material and to not accept Buddhi's work as his own work is the knowledge. Human can be dissociated from happiness–sorrows only in the status of this knowledge. Samkhya considers Yoga Sadhana way (Yama, Niyama, Aasana, Pranayama, Pratyahaara, Dharana, Dhyan and Samadhi) necessary to acquire it.

Samkhya Philosophy believes that one can follow all these who are keen for salvation. Human can control his senses only through compliance of these moral great vows and rules, can serve his mind and can follow the other 6 steps-Aasana, Pranayama, Pratyahaara, Dharana, Dhyan and Samadhi of Yoga Sadhana for liberation.

5. According to Samkhya, pain and suffering are due to non-discrimination between purusa and prakriti. The supreme good is the realization of the perfection of purusa and all ethical activity leads to this end. Virtuous behaviour and the practice of Yoga are recommended as the means to salvation. According to Samkhya, independence of God and individual souls is difficult to maintain. Both cannot co-exist. Also, when the function of productivity is assigned to prakriti, God became superfluous. Thus Samkhya philosophy does not subscribe to the existence of a supreme being.

Samkhya believes in the universality of suffering which is of three kinds:

- Adhyatmika or arising from the psychophysical nature of man
- Adhibhautika or arising from the external world
- Adhidaivika or arising from supernatural agencies

6. Bondage is caused by non-discrimination between purusa and prakriti. Knowledge and ignorance are the sole determinants of release and bondage. The supreme good is realization of the perfection of the purusa – all ethical activity leads to this end. Freedom is brought about by virtue, the practice of yoga, etc. Wrong knowledge causing bondage includes egoism, desire, hatred and fear. Unselfish activity is an indirect way to salvation. Thus, Sankhya recommends a virtuous life.

2.3.7. EDUCATIONAL IMPLICATIONS OF SAMKHYA

Sankhya has great relevance for contemporary education. If we consider the modern view of education as development, then Sankhya's postulate that development is only the unfolding of what already has potential existence needs no modification to suit today's world. Sankhya's psychological views also reflect modern learning theories. If knowledge leads to the modification of buddhi in the Sankhya system, then modern education aims at the modification of behaviour. If cognition is a function of buddhi or intellect in Sankhya, it is the formation of intellectual structure in modern education. Sankhya's theory that generalisation is the result not only of observation of elements but also non-observation of non-elements reflects the modern view of concept formation. A deeper study will yield many more similarities. Let us attempt to analyse in detail the implications of Sankhya for modern education:

Aims of education

Sankhya states the ultimate aim as attaining the perfection of purusa through discrimination, leading to its salvation. Thus the aim of education should be to create discerning individuals capable of attaining the perfection that exists within them, as Swami Vivekananda also put it.

Methods

The methods are clearly indicated:

- Thorough study of authorities but keeping an open mind and using reason to validate their theories
- Experiential learning with maximum involvement of the senses
- Activity based learning including projects, practical work, etc. enabling the development of observation and logical reasoning

Curriculum

The curriculum will involve the study of all disciplines, with stress on the natural sciences, since to understand prakriti is to discriminate between purusa and prakriti, and the arts, so as to develop an appreciation and understanding of the works of authorities. Physical sciences and the yoga will also form part of the curriculum since Sankhya believes only a healthy and focused individual can attain salvation.

Discipline

Sankhya recommends a high degree of discipline. One can deduce that it should be self-imposed.

Role of teacher

The teacher is to be a facilitator of the development of the innate potentiality of the child.

Place of student

Since Sankhya believes in the mulitiplicty of purusas, it follows that education must be individualized and child-centred.

Religious and moral education

It can be deduced that religious education will not have much importance but moral education involving the teaching of ethical values will definitely hold a central place in any system of education based on Sankhya.

2.3.7 : Summed Up As :

Educational implications of the Sankhya systems are :

(1) Self realization is the source of knowledge or cognition.

(2) Intellectual development is a significant factor for self consciousness in Sankhya Philosophy to promote oneself for acquiring knowledge.

(3) Development of Sense organs.

(4) Mental development is also another important objective to attain quality of life.

Question:

Let Us Check Our Progress

1. Define epistemology of Sankhya Philosophy.
2. Name three qualities evolved from metaphysics of Sankhya.

2.3.8: LET US SUM UP:

The Samkhya philosophy is the oldest school among all the schools of Indian Philosophy. A sage named kapila was the founder of this school. This system is dualistic because it accepts two ultimate realities, Purusa and Prakṛti. It advocates satkaryavada, which expresses effect exists in its material cause prior to its production.

On the account of Samkhya,

Prakṛti - It is eternal, unconscious, and active

Purusa- It is eternal, pure conscious, and inactive

There are three gunas found in Prakriti. These are sattva, rajas, and tamas.

Nearness between Prakriti and Purusa causes evolution. The order of creation is as follows:

(1) Mahat

(2) ahamkara

(3) Manas

(4) Five sense organs (jnanendriyas)

(5) Five organs of action (karmendriyas)

(6) Five subtle elements (tanmantras)

(7) Five physical elements. (mahabhutas)

2.3.9 : SUGGESTED READINGS:

- Chatterjee, S.G. and Dutta, D.M(1960),*An Introduction to Indian Philosophy.* Calcutta: University of Calcutta Press,.

- Hiriyanna, M.(1932),*The Essentials of Indian Philosophy.* London: George Allen and Unwin Press,
- Keith, A.B.(1918),*The Samkhya System.* Oxford: Clarendon Press,
- Sinha J.(1952),Indian Philosophy-vol –I & vol- II, Motilal Banarsidass Publishers pvt.Ldt, Delhi.
- Encyclopaedia of Philosophy
- wikipedia.org/wiki/Samkhya

2.3.10 : ASSIGNMENT:

1. Briefly discuss the Metaphysical view of Samkhya Philosophy.
2. What do you understand Theory of Knowledge (Epistemology) through Samkhya Philosophy?
3. What do you mean the Axiology of Samkhya Philosophy?
4. Describe the Educational implication of Samkhya Philosophy.

UNIT 04
YOGA SCHOOL OF PHILOSOPHY

Content Structure

2.4.1: Introduction
2.4.2: Objectives
2.4.3: Yoga Philosophy
2.4.4 : Metaphysics of Yoga Philosophy
2.4.5 : Epistemology of Yoga Philosophy
2.4.6 : Axiology: of Yoga Philosophy
2.4.7 : The Educational Implications
2.4.8: Let us sum up
2.4.9: Suggested Readings
2.4.10: Assignments

2.4.1 : Introduction :

The Yoga Philosophy is closely associated with Samkhya philosophy. The Yoga presents a practical path for the realization of the self whereas the Samkhya emphasizes the attainment of knowledge of self by means of eight fold path. Thus, it won't be incorrect to state that yoga is the practice and Samkhya is its theory. The Gita says that Yoga and Samkhya are the practical and theoretical sides of the same system.

2.4.2 : OBJECTIVES:

After complited this unit you will be able :

- To extract educational thoughts from Yoga Philosophy.
- To state the Metaphysical view of Yoga Philosophy
- To study the epistemological views of Yogaof philosophy.
- To apply the concept of Yoga in educational systems.

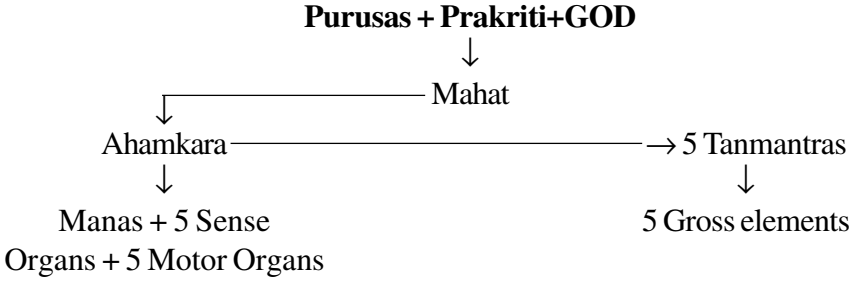
2.4.3 : YOGA PHILOSOPHY :

In the previous unit, you must have studied Samkhya philosophy in an elaborate manner. Their views on purusa, prakariti, pramanas (sources of valid knowledge), bondage, and liberation. In this unit you will be explained what are the eight fold path of yoga, how liberation can be attained, how mind gets purified, how to control bodily act, and some more issues allied to Yoga School of thought.

The Yoga philosophy speaks about the theory and practice for the realization of the ultimate truth concerning human being and the world. In Vedanta, yoga is understood as 'union', i.e. spiritual union of the individual soul with the supreme soul. This view is not explained clearly. Patanjali, who is the founder of the Yoga System says, yoga is a spiritual effort to attain perfection through the control of sense organs, gross body, subtle mind, intellect and ego. It guides to achieve the highest wisdom through spiritual realization.

2.4.4 : METAPHYSICS OF YOGA:

The yoga philosophy admits the metaphysics of samkhya. In Samkhya we are discussing the twenty five principles including Prakriti, Mahat, Ahamkara, Manas, Tenexternal sense organs, five tanmatras, five gross elements and purusas. In yoga the dualistic purusa and prakriti is connected by an another concept that is the concept of God besides twenty five principles mentioned above. The evolution system of yoga is given below:



There are two parallel evolution processes are observed. Manas, sense organs and motor organs are the instruments of attaining knowledge.

Introduction

Patanjali's Yoga-Sutras consist of four parts. These are;

(i) Samadhipada

(ii) Sadhanapada

(iii) Vibhutipada

(iv) Kaivalyapada

The first part deals with the introduction to the nature and methods of yoga in its various forms.It describes the various modifications of the organs including citta which is an internal organ of human being. The second part explains the causes of suffering and how to eradicate them. It explains about the law of karma and human bondage. The third part elucidates the concept how to achieve the supra-normal powers and in which ways yoga helps it. The last or the final part describes the nature of liberation and spiritual union with the supreme soul/self.

1. **Prakriti and Purusas :** The Yoga and Samkhya metaphysics are alike. The first one is with God and second one is without God. It is called the theistic Samkhya, while the Samkhya system is called the atheistic Samkhya.' The Yoga recognizes the reality of prakrti and its evolutes, countless purusas, and God. Prakrti is the material cause of the world. God is its efficient cause. He is not the creator of prakrti nor is he the creator of purusas. Prakriti and purusas are co-eternal with God. He disturbs the equilibrium of sattva, rajas, and tamas, and starts the evolution of prakrti. He reveals them for enlightenment of purusas at the end of each cyle. He associates and dissociates purusas and prakrti in accordance with their merits and demerits (adi'sta), and brings about evolution and dissolution of the world. He removes obstacles to the evolution of prakrti. He removes obstacles to the achievement of liberation by purusas. '

The Samkhya believes in the reality of twenty-five principles, prakrti, mahat, ahankara, manas, ten external sense-organs, five tanmatras, five gross elements, and purusas. The Yoga assumes the reality of these twenty five principles and adds the principle of God to them.

It recognizes the reality of twenty six principles. The Yoga adopts the Samhkhya ontology with slight variations. It agrees with the Samhkhya in holding that bondage is due to nondiscrimination (aviveka) between purusa and prakrti, and liberation is due to discrimination (viveka) between them. But it lays stress on the practice of yoga as an indispensable means to discriminative knowledge (vivekakhyeti). This is the special feature of theYoga system.

2. Substance and Mode

The Yoga holds that modes are modifications of a substance (dharmin), which persists in them. Vysaa defines a substance (dravya) as an aggregate of generic and specific qualities . An earthy substance has the generic quality of earthness and the specific qualities of smell, taste, colour, touch, and sound. These qualities are its modes. They subsist in it. It persists in them. Though the modes change, the substance abides. A substance (dharmin) is characterized by generic and specific qualities (samanyavieesatma), and it persists in its manifest and unmanifest modes (dharma). There are no qualities apart from a substance. There are no self-subsistent modes. They subsist in a permanent substance.

The Buddhists hold that there are only impermanent modes without any petmanent substance. They come into being and pass away. A substance is a mere aggregate of passing modes. It is identical with them. There is no permanent substance apart 'from the modes. Being is change. Change is momentary. Nothing is permanent. There is no permanent substance which persists in the midst of the changing modes. There is no permanent self apart from a stream of momentary cognitions. There is no permanent thing apart from an aggregate of changing qualities or modes.

Vyasa urges that if there were no permanent self, there would be no reaping of fruits of one's actions and there would be no recollection. If the self were a stream of cognitions, one cognition would perform an action and another would reap its fruit, and one cognition would perceive an object and another would remember it. Reaping the fruits of one's actions and recollection presuppose a permanent self. If there were no permanent thing, there would be no recognition of it (e.g., 'this is that jar'). But there is a distinct recognition of it as perceived in the past in spite of the change of its qualities or modes. This clearly proves that there is a permanent substance behind the changing modes. A substance is not identical with modes. It is not a mere aggregate of modes. The Buddhist view is wrong.'°'

The Vaisesika holds that substance is a substratum in which its qualities abide. At the first moment of its production it is devoid of qualities. It is endued with qualities at the second moment. Its qualities are destroyed when it is destroyed. So it is a permanent entity in which qualities subsist. It is different from its qualities. Substance and quality are independent categories (padertha). Generic and speciiic qualities inhere in a substance.

But the Yoga urges that though there is a permanent substance apart from its qualities or modes, it is not entirely different from them. A substance is partly different from and ' partly identical with, Its qualities. There is not only difference but also identity between them. We distinctly Perceive ; cloth as white. The cloth is different from its white colour but it is also identical with it. A substance

is identical With its generic and specific qualities . It does not possess them. They do not inhere in it. There is identity between a substance and its qualities. The substance is sometimes spoken of as the generic character (samanya), since it is common to its qualities or modes (dharma) . The qualities or modes are sometimes spoken of as the specific character (vis'esa), since they are its particular modifications.

The Yoga holds that there is identity in difference between a substance and its qualities or modes. If there were absolute difference between them, they would not be related as substance and mode. If there were absolute identity between them, a substance could not be its own mode. A cow and a horse are different from each other. So they are not related to each other as substance and mode. A horse is identical with itself. So it cannot be its own mode." But a cloth is partly different from its white colour, and partly identical with it. So a substance is partly different from and partly identical with, its modes. Vyasa says: "A quality is merely the nature of the substance ; it is the changes in the substance that are manifested by the qualities."

Substance(Dharmin) and Mode(dharma) are relative terms. The five tanmatras of sound, touch, colour, taste, and smell produce the atom of earth. So they are a dharmin in relation to earth, which is a dharma. Earth produces a jar. so earth is a dharmin in relation to a jar, which is a dharma.'

3. Whole and Part

An object of perception is a complex product of atoms. It is a whole composed of parts. The Yoga regards the whole (avayavin) as partly different from, and partly identical with, its parts (aveyava). If the whole were different from its parts or atoms, it could not subsist in them, and share in their nature. If it were identical with them, it would be subtle and manifold like its constituent atoms. So it is neither entirely different from, nor entirely identical with, its constituent parts or atoms. If the whole were different from its parts, it could not be their product. If it were identical with them, they could not produce it. So the whole is partly different from, and partly identical with, its parts. There is identity in difference between them.

4. Different Kinds of Modifications

Sattva, rajas, and tamas are the constituents of all phenomena in the world. They are the constituents of all physical and mental phenomena. All aspects are particular arrangements of the gunas. They undergo modifications and produce various effects.

Modification is the production or appearance of one quality in a stable substance on the destruction or disappearance of another quality in it. Substance persists in the midst of its changing qualities. They constitute its nature whose change is manifested by them.

The modification of the non-specific modes (avis'esa) into the speciiic modes (vis'esa) is called tattvantaraparinama. When egoism ahamkara is evolved from mahat or buddhi, or when the tanmatras or the sense-organs are evolved from egoism, or when the five gross elements are evolved from the five tanmatras, the modification is called tattvantaraparinama. It is the evolution of an entirely new category of existence (tattvantara). When the tanmatras are evolved from ahamkara, there is not merely a change of quality, but a change of existence. Though the tanmatras are evolved from ahamkara, the traces of ahamkara are not easily traceable in them. They acquire properties which differ widely from those of ahamkara. They are wholly different from ahamkara from which they are evolved. So when the atoms are evolved from the tanmetras, they are wholly different from the latter, since they acquire sensible properties which are absent from them.

Thus the evolution of the specific modes (vis'esa) from the non-speciiic modes (avisesa) is called tattvantaraparinama. No independent categories of existence are evolved from the specific modes. They undergo modiiications by change of quality (dharmaparinama), change of mark (laksanaparinama), and change' of state (avastheparinama).

5. Power and Causation-Satkaryavada

The Yoga advocates the theory of Satkaryavada or Parinamavada. There is no production of a non-existent thing. There is no destruction of an existent thing.A non-existent thing cannot be produced. What was existent in unmanifest condition appears in a manifest condition. Production is manifestation (avirbhava) . Destruction is envelopment (tirobhava) . A present cause contains its effect in a latent condition.' It is turned into what is already contained in its nature." Milk is turned into curd which it contained in a potential condition. All effects are particular collections of the gupas . Sattva, rajas, and tamas are the ultimate constituents of all phenomena.They are the material cause of all effects. They undergo various modifications but are neither generated nor destroyed. They appear to be generated and destroyed on account of their modes passing from the latent to the actual condition, and from the actual to the sublatent condition.

6. non-existance

The Vaisesika regards non-existence (abhava) as an independent category. He recognizes four kinds of non-existence: (1) prior non-existence ; (2) posterior non-existence ; (3) mutual non-existence ; (4) absolute non-existence. The Yoga does not recognize non-existence as a separate category. It identities nonexistence with a particular state of its locus. It agrees with Prabhakara Who denies nonexistence and identities it with its locus.

7. Particularity

The Vais'esika recognizes particularity (vis'esa) as an independent category. It is the distinguishing mark of an eternal substance. Time, space, self, manas, ether, and atoms have particularity. Complex substances like a jar and a cloth can be distinguished from each other by their parts. But one atom of earth can be distinguished from another atom of earth by its particularity (vis'esa). All eternal substances have particularities which distinguish them from one another. But the yoga rejects the category of particularity.

Ref: Indian Philosophy: J.N. Sinha

Psychology of Yoga

Stages of Citta:

The state of mind can be divided into five parts given below:

a. Ksipta (Restless)

In this stage citta is very much distributed and attached withworldly objects. For example, Citta of those intoxicated by the possession of power and money.

b. Mudha (Torpid)

In this stage, tamas dominates the other two gunas; sattva and rajas. This stage of citta is known as mudha. For example, citta of the intoxicated persons.

c. Viksipta (Distracted)

This is the third stage of citta where sattva guna dominates the other two gunas. In this stage yoga begins and citta tries to attain god or supreme soul. Due to the sattva dominance, it is found that there is temporary ceasing of the modifications of the citta.

d. Ekagra (concentrated)

In this stage, citta is fixed to some object . It is known as ekagra. For example, the flame of a candle light remains always pointing up without flicking hither and thither.

e. Niruddha (Restricted)

The fifth and final stage of citta is niruddha. In this stage the impressions remain in the citta afterthe cession of modifications. This stage is known as yoga.

Out of these five stages the last two are very helpful and hence useful in yoga. But the remaining-stages are harmful for practicing in yoga and thus, these may be removed by practice.Forms of Cittva.

The mind and its modes:

Vacaspati defined citta as internal organ of buddhi. It is composed of three gunus sattva, rajas and tamas. Cittva or mind is the evolute of prakriti.According to yoga philosophy modes are of three kin ds:

These are;

(i) Prakhya and sukha: It is the principle of illumination(prakhya) and pleasure state of sattva.

(ii) Pravrti and pain: It is the principle of activity by Rajas.

(iii) Sthiti and dellusion: It is the principle of inertia when the mind is under control of tamas.

Modifications of Cittva

Patanjali holds mind is the summation of different mental modes. These are,

(i) Pramana or valid knowledge

(ii) Viparyaya or illusion

(iii) Vikalpa or imagination

(iv) Nidra or sleep

(v) Smrti or recollection

Pramana

Like Samkhya philosophy Yoga school believes in three pramanas and they are; perception, inference andsabda (verbal testimony).

a. Perception is the valid knowledge a pprehends a real object.

b. Perception apprehends an external object directly.

c. The form of cognition corresponds to the external object because it is not commimg out from buddhi but modified in to its form.

d. Perception is having both the quality of generality and particularity.

e. Inference and testimony both apprehend generality.

Viparyaya

Viparyaya is understood as doubt. It is not valid knowledge. To posses not determinate knowledge of anobject is known as doubt.

Vikalpa

It is the knowledge in which the object is known but the object does not exist. Thus, it is treatedit as merely a verbal cognition. For example, barren women's child, horses' horn, etc.

Nidra

Yoga regards sleep as a distinct mental mode having absence of any cognitions. It is a distinct apprehension having absence of all determinate cognitions. It is a mental mode which apprehends tamas. Tamas overpowers sattva and rajas of the mind in sleep.

Smrti

Recollection or smrti is the recollection of past experiences. Recapitulation is possible through our impressions that we left on the objects while cognized. Thus in this stagesome sorts of modifications are found in cittva.

Afflictions or Klesha

There are several causes responsible for the disturbances in the citta. Among those a few are; attachment with objects of the world, cognizing the objects wrongly, inactivity, doubt, carelessness, etc. These causes arise because citta imagines itself as the agent and the enjoyer because of Purusa's reflection on it. Hence, we find the earthly sufferings (klesas).

The Yoga philosophy mentions that there are five kinds of klesas or suffering. These are;

(i) Avidya or False Knowledge

(ii) Asmita or egoism

(iii) Raga or attachment

(iv) Dwesa or aversion

(v) Abhinivesa or fear of death

Avidya arises when we cognizing the self as non-eternal and material. But the real nature of theself is bliss, eternal, and possesses pure consciousness. Asmita is wrongly identifying Purusa andPrakrti, and further, bringing them in an equal platform. But in reality, purusa and Prakrti are twodistinct entities, thus, can't be equated with each other. Raga is the craving to get worldlypleasure like power, money, etc. Dwesa is anger in the means of suffering. The last, abhinivesa isfear of death which finds among all living beings in the earth.

The Eight-Fold Path (Astanga Yoga)

We the human beings have body, sense organs, and mind, hence, it is obvious to have sensual attachment and passion towards worldly objects. As a result, we have drawn in the river of bondage and worldly sufferings. To get rid of earthly suffering and to remove the ignorance that find within us, we have to conquer our sense organs, mind and even our bodily act. To do so the citta needs to be controlled. In this respect, yoga philosophy prescribes eight-fold path which helps to control our passions and craving for worldly pleasures.

These eight fold path are as follows.

(i) Yama

(ii) Niyama

(iii) Asana

(iv) Pranayama

(v) Pratyahara

(vi) Dharana

(vii) Dhyana

(viii) Samadhi

Now let us discuss these points one after another in a sequential manner.

(i) Yama

It is the control of mind, body, and speech.

The five yamas are:

(a) *Ahimsa*: it means non-violence. Violence is the root of all evils. So absolute non-injury is required for attaining controlling of mind.

(b) *Satya*: Truthfulness in thought and speech is required for absolute control over mind. A truthful person must have valid thoughts in his mind and have a pattern of life based on truthfulness.

(c) *Asteya*: it means the principle of non-stealing. This includes not desiring on others' wealth and lack of greed from others object.

(d) *Brahmacharya*: it is known as celibacy. It is based on education life and controlling over sexual organ. Sex restraint consists in restraining the sex organ and all other sense organs with regard to its object.

(e) *Aparigraha*: Non-acceptance of gifts and abstaining from acquiring objects of enjoyment.

(ii) Niyama

Niyama consists of the following points:

(a) *Sauch*: It is very much related to cleanliness which includes both external cleaning (e.g. bath, pure diet, hair cutting and cleaning, nail cutting etc.) and internal cleaning (e.g. friendliness, empathy, happiness, smile, etc.)

(b) *Santosh*: It means contentment by satisfying with yourself whatever you attain or posses. In other word we should happy with what we are.

(c) *Tapa*: Tapa means the power of tolerance. To tolerate extreme and maximum cold and heat, one needs to do the hard practices and, this is possible throughtapa.

(d) *Swadhyaya*: To study religious scriptures to develop spiritual knowledge. It is considered as one of the good principle to possess good conduct.

(e) *Iswara Pranidhan*: We have to remember God is the supreme authority and all mighty to surrender to him which helps for the development of good conduct by yoga philosophy.

(iii) Asana

Asana related to do various bodily postures which helps toretain concentration of citta and even helps to control the body as well as mind. There arevarious types of asana.

The reason is, it not only controls the bodysuch as keeps the body flexible, increase the immunity, etc. but also keeps the body free fromdiseases and make it strong and healthy. By doing regular asana one can control the differentexternal and internal organs of the body.

(iv) Pranayam

Pranayama is understood as control of our breathing system.

It suggests that practicing pranayama through inhaling and exhaling by the controlling time of inspiration, the time of retention and the tine of expiration of breath. This helps the cittva to remain concentrate and focused.

Pranayama has three steps. These are;

(a) Puraka

(b) Kumbhak

(c) Rechak

The first step puraka conveys to take as much air as possible. It is known as inhaling. The second step Kumbhak expresses after inhaling as much air as possible tries to retain it for half of the time taken in inhaling. The third step' recaka' states that gradually exhale the air by taking the same time that your had consumed while taking inhalation.

These three steps will gradually accelerate, so that in due course of time the agent may control his/her breath which helps the citta to remain concentrate and not disturbed.

(v) Pratyahara

In this stage, one should withrraw himself/herself from sense organs for not being attracted by theworldly objects. If the mind is withdrawn from external sensible objects reversiblythe mind will follow that approach. The restraint of the external senses depends upon the restraint of mind.

(vi) Dharana

The sixth discipline is Dharana which means concentrating our mind towards a particular object. It is one of the cognitive aspect of our mental discipline.

One cannot have mental peace without proper cognition.

(vii) Dhyana

It is the continuous flow of the same cognition. Meditation is a process of fixing mind towards an object and complete exclusion of all other objects. Here we consider meditation is the complete withdrawing of all kinds of external objects.

viii) Samadhi

The eighth discipline of yoga is known as samadhi. In thisstage one can not differentiate between subject and object, realizes the true natureof the cittva that how it attains the form of the object. Here, the process of concentration andthe object becomes one and identical. This stage is known as cessation of modification of thecittva and highest level of eight fold path for attaining liberation.

2.4.5 : EPISTEMOLOGY - THE YOGA THEORY OF KNOWLEDGE

Patanjali was the founder of the yoga system. The yoga is closely allied to the Sankhya system. It is the application of the theory of the Sankhya in practical life. The yoga mostly accepts the Sankhya epistemology and admits the three Parmanas of perception, inference and scriptural testimony.

There are two kinds of perception, namely nirbikalpaka or the indeterminate and savikalpaka or the determinate. The first arises at the first moment of contact between a sense and its object, and its antecedent to all mental analysis and synthesis of the sense data.

The modification of the seif is the apprehending mental mode which is considered as valid knowledge. The self is the knower and the object apprehended through the mental mode is the reflection of valid knowledge of an object. It admits external objects are real by which mental modes are modified and reflected through valid knowledge.

Valid Knowledge (Prama) is a definite and an unerring cognition of some object through the modification of buddhi or the intellect which reflects the consciousness of the self in it. Consciousness or intelligence really belongs to the self. But the self cannot immediately apprehend the objects of the world. The self knows objects through the intellect, the manas and the senses. We have a true knowledge of objects when, through the activity of the senses and the manas, their forms are impressed on the intellect which, in its turn, reflects the light or consciousness of the self.

In all valid knowledge there are three factors, namely, the subject (Pramata), the object (Pramaya), and the ground or source knowledge (pramana). The modification (vritti) of the intellect, through which the self knows an object, is called Pramana. The object Presented to the self through the modification is the prameya. Prama or valid knowledge' is the reflections of the self in the intellect as modified into the form of the object.

Perception is the direct cognition of an object its contact with some sense. Just as a mirror reflects the light of a lamp and thereby manifests their things, so the material principle of buddhi, being transparent and bright, reflects the consciousness of the self and illuminates or cognizes, the objects of knowledge.

There are two kinds of 'Perception' namely, nirvikalpaka or the indeterminate and savikalpaka or determinate. The first arises at the first moment of contact between a sense and its object, and is antecedent to all mental analysis and synthesizes of the sense-data. It is accordingly called alocana or sensing of the object. The second kind of perception is the result of the analysis, synthesis and interpretation of sense-data by manas or the mind. So it is called vivecana or a judgment of the object.

Inference is the knowledge of one term of a relation, which is not perceived, through the other which is perceived and known to be invariably related to the first and the third component of epistemologyof Yoja is Testimoney or Verbal Communication. It considers that communication of a transtioorthy person can generate knowledge as alaike Samkhya Philosophy.

2.4.6: AXIOLOGY

1. The performance of eightfold path of yoga manifests right knowledge able to differentiate between prakriti and its evaluates. Practising yoga can liberate human being leading to focused values in the way of life.

2. The yoga enjoins the path of action and the path of knowledge for the attainment of liberation by means of kriyayoga and jnanayoga.

3. The path of mental discipline and cultivation of right knowledge can led to liberation.

4. The path of right knowledge includes yogic practices can liberate human being in terms of eight fold path given below already discussed before:

The eight fold path for axiological stand point:

We the human beings have body, sense organs, and mind, hence, it is obvious to have sensual attachment and passion towards worldly objects. As a result, we have drawn in the river of bondage and worldly sufferings. To get rid of earthly suffering and to remove the ignorance that find within us, we have to conquer our sense organs, mind and even our bodily act. To do so the citta needs to be controlled. In this respect, yoga philosophy prescribes eight-fold path which helps to control our passions and craving for worldly pleasures

(i) Yama:

It is the control of mind, body, and speech.The five yamas are:

(a) *Ahimsa*: it means non-violence. Violence is the root of all evils. So absolute non-injury is required for attaining controlling of mind.

(b) *Satya*: Truthfulness in thought and speech is required for absolute control over mind. A truthful person must have valid thoughts in his mind and have a pattern of life based on truthfulness.

(c) *Asteya*: it means the principle of non-stealing. This includes not desiring on others' wealth and lack of greed from others object.

(d) *Brahmacharya*: it is known as celibacy. It is based on education life and controlling over sexual organ. Sex restraint consists in restraining the sex organ and all other sense organs with regard to its object.

(e) *Aparigraha*: Non-acceptance of gifts and abstaining from acquiring objects of enjoyment. The humanitarian concept of yoga philosophy based on self restraint can surely leading to emancipation.

(ii) Niyama

Niyama consists of the following points:

(a) *Sauch*: It is very much related to cleanliness which includes both external cleaning (e.g. bath, pure diet, hair cutting and cleaning, nail cutting etc.) and internal cleaning (e.g. friendliness, empathy, happiness, smile, etc.

(b) *Santosh*: It means contentment by satisfying with yourself whatever you attain or posses. In other word we should happy with what we are.

(c) *Tapa*: Tapa means the power of tolerance. To tolerate extreme and maximum cold and heat, one needs to do the hard practices and, this is possible through tapa.

(d) *Swadhyaya*: To study religious scriptures to develop spiritual knowledge. It is considered as one of the good principle to possess good conduct.

(e) *Iswara Pranidhan*: We have to remember God is the supreme authority and all mighty to surrender to him which helps for the development of good conduct by yoga philosophy.

This is one kind of attaing liberation through disciplinary action as well as by the way of Karma.In the present social context Niyama is very much significant for attaing liberation.

(iii) Asana

Asana related to do various bodily postures which helps to retain concentration of citta and even helps to control the body as well as mind. There are various types of asana.

The reason is, it not only controls the body such as keeps the body flexible, increase the immunity, etc. but also keeps the body free from diseases and make it strong and healthy. By doing regular asana one can control the different external and internal organs of the body.

(iv) Pranayam

Pranayama is understood as control of our breathing system.

It suggests that practicing pranayama through inhaling and exhaling by the controlling time of inspiration, the time of retention and the tine of expiration of breath. This helps the cittva to remain concentrate and focused.

These three steps will gradually accelerate, so that in due course of time the one may control breath which helps the cittva to remain concentrate and having the individual values for modification of own Individuality.

(v) Pratyahara

In this stage, one should withrraw himself/herself from sense organs for not being attracted by the worldly objects. If the mind is withdrawn from external sensible objects reversibly the mind will follow that approach. The restraint of the external senses depends upon the restraint of mind. The practising pratyahara is a way of controlling human mind and its surroundings.

May be Quality of life enhanced by the way of different components of yoga system.

(vi) Dharana

The sixth discipline is Dharana which means concentrating our mind towards a particular object. It is one of the cognitive aspect of our mental discipline.

One cannot have mental peace without proper cognition. According to Indian School of Philosophy knowledge is power for emancipating soul and through dharana one can upgrade for better way of life and values too.

(vii) Dhyana

It is the continuous flow of the same cognition. Meditation is a process of fixing mind towards an object and complete exclusion of all other objects. Here we consider meditation is the complete withdrawing of all kinds of external objects and one can develop inner senses through meditation.

(viii) Samadhi

The eighth discipline of yoga is known as samadhi. In this stage one can not differentiate between subject and object, realizes the true nature of the cittva that how it attains the form of the object. Here, the process of concentration and the object becomes one and identical. This stage is known as cessation of modification of the cittva and highest level of eight-fold path for attaining liberation.

2.4.7 : EDUCATIONAL IMPLICATIONS ACCORDING TO YOGA PHILOSOPHY

Some educational implications of the Yoga systems are :

- Pragmatic view of life is supported by yoga philosophy. Educational objectives should be application based and activity oriented.
- Physical development is given priority for concentrating oneself for gathering knowledge.
- Moral development is being given highest priority in yoga philosophy reflected through the eightfold path to be followed in educational measures.
- Self realization is the ultimate target in Yoga Philosophy. So educational objectives are also based on to develop self potentiality.

Methodology - Moral training will be given for mental and physical development for awakening cognition. Methodology should be activity based.

Question:

Let Us Check Our Progress

(1) What is perception according to Yoga philosophy?

(2) Mention two educational objectives of Yoga philosophy

2.4.8 : LET US SUM UP

We have understood that the Nyaya, Sankhya and Yoga schools of philosophy and their educational implications. Basic sources of epistemological views are almost common in the mentioned schools. We have also learnt that perception, inference and testimony are common to all the three schools. In Nyaya Philosophy additionally comparison is regarded as a basic source of knowledge. Metaphysically Sankhya and Yoga is almost same. Both believe in the existence of Purusa and Prakriti. Actually Yoga philosophy is the application of Sankhya philosophy. Besides, Purusa and Prakriti, Yoga admits the concepts of GOD. Nyaya philosophy advocates independent entity of objects through which reality can be explained. Objectives of all the schools are to realize self for upgrading oneself to a higher order. It is the education through which it can come into practice.

2.4.9 : SUGGESTED READINGS

(1) M. Hiriyanna — Outlines of Indian Philosophy, 1944,
M. B. Publishers Pvt. Ltd. - Delhi.

(2) Jadunath Sinha — Indian Philosophy.
M. B. Publishers Pvt. Ltd. Delhi - 2017

(3) S. Radhakrishnan — Indian Philosophy.

(4) B. S. Bloom — Taxonomy of Educational Objectives.

(5) IGNOU Study Material.

2.4.10 ASSIGNMENTS

(1) Discuss critically epistemology of the Yoga philosophy.

(2) 'The Yoga philosophy is the application of Sankhya System' —Explain.

(3) Elucidate Educational implications of the Yoga and the Yoga philosophy.

Unit-5
Buddhism

Content Structure:

2.5.1. Introduction
2.5.2. Learning Objectives
2.5.3. Meaning and Concept of Buddhism
2.5.4. Basic Principles of Buddhism
2.5.5. Metaphysics, Epistemology and Axiology Of Buddhism
2.5.5.1 Buddhism's Four Noble Truths
2.5.5.2: Eight-Fold Path of Buddhism
2.5.6: Educational Implications of Buddhism
2.5.7: Let Us Sum Up
2.5.8: Suggested Readings
2.5.9: Assignment

2.5.1. INTRODUCTION

Starting in India some twenty-five hundred years ago, Buddhist monks and nuns almost immediately from the inception of the dispensation began to "to wander forth for the welfare and weal of the many, out of compassion for the world," commencing one of the greatest missionary movements in world religious history. Over the next millennium, Buddhism spread from India throughout the Asian continent, from the shores of the Caspian Sea in the west, to the Inner Asian steppes in the north, the Japanese isles in the east, and the Indonesian archipelago in the south. In the modern era, Buddhism has even begun to build a significant presence in the Americas and Europe among both immigrant and local populations, transforming it into a religion with truly global reach.

In this unit we will briefly discuss about Buddhi Philosophy Through its Metaphysical, Epistemological and Axiological aspects. We will also discuss the Educational significances of this great philosophical thought.

2.5.2. LEARNING OBJECTIVES

After going through this unit you will be able to, -

1. Describe the basic principles of Buddhism;
2. Give metaphysical, epistemological and Axiological description of Buddhi Philosophy;
3. Explain the educational significances of Buddhism.

2.5.3. MEANING AND CONCEPT OF BUDDHISM

India is the birthplace of Buddhism though it is developed in India's neighboring countries Sinhal, Burma , Shayam , Jawa, Tibbat . China , Korea , Mangolia and Japan. Initially this thought was also

developed in the form of religion. Son of Shakya Ganadhipati Shudhodhan, Siddharth (Gautam Buddha, 567–487 B.C.) was its propagandist.

Siddharth was tinted since his birth. It has been found that Siddharth when used to see old, diseased and dead, he got sorrowful from the sufferings of human and one day he sacrificed his kingdom, family, wife and son and left.

He wondered what else there was to life and demanded to see the outside world. After six years of study and meditation he finally found 'the middle path' and was enlightened. After enlightenment, the Buddha spent the rest of his life teaching the principles of Buddhism — called the Dhamma, or Truth — until his death at the age of 80.

Since then millions of people around the world have followed the pure spiritual path he revealed. The Buddhist way of life of peace, loving kindness and wisdom is just as relevant today as it was in ancient India. Buddha explained that all our problems and suffering arise from confused and negative states of mind, and that all our happiness and good fortune arise from peaceful and positive states of mind. He taught methods for gradually overcoming our negative minds such as anger, jealousy and ignorance, and developing our positive minds such as love, compassion and wisdom. Through this we will come to experience lasting peace and happiness. These methods work for anyone, in any country, in any age. Once we have gained experience of them for ourselves we can pass them on to others so they too can enjoy the same benefits.

Buddhism is against the traditional thought of Indian Philosophy. In Upanisadas the eternal Atman is considered to be alone real. It is identical with Brahama. It is the transcendental reality (Sat), Consciousness (Cit) and Bliss (Ananda). But Buddha teaches the opposite truth. Everything is impermanent (anitya). There is no Permanent self (anataman). All is suffering. The self is an impermanent mind-body complex. The world is dynamic. The soul is fluid. It grows and develops. It is an impermanent self with no personal identity. Buddha believes to depend upon authority but gives no reason. He lays the foundation of the kingdom of righteousness.

2.5.4. BASIC PRINCIPLES OF BUDDHISM

Buddhism is different from many other faith traditions in that it is not centered on the relationship between human and hih god. Buddhism is a religion without GOD like Jainism. It believes in transmigration and future life, though it does not believe in the permanent self.

It emphasizes the law of Karma or moral causation. It aims at the extinction of suffering by extinguishing desire. It aims at inner and outer purity of life, the purity of the heart, and the purity of external conduct. It rejects rites, ceremonies, sacrifices and penances. It stresses like Jainism the ethics of ahimsa, non injury in thought, word and deed. It enjoins extraction of egoism and ignorance.

It aims at enlightenment and nirvana on earth. Nirvana is insight, peace and selfless will. Buddhism is a religion of self help. Liberations does not depend on the grace of GOD. It has to be wrought by one's own moral efforts.

Basic principles of Buddhism are placed below :

(1) Enlightenment is the goal of Buddhism. It aims at removal of ignorance and achievement through enlightenment.

(2) The world is without beginning or end. All phenomenon are subject to the law of Causation. There is no first cause.

(3) All is transitory, impermanent.

(4) There is no being. There is only becoming.

(5) There is no permanent ego or self. There is only an impermanent stream of consciousness.

(6) Transmigration is due to Karma. Actions in empirical life produce Karma. Transmigration leads to suffering.

(7) Ignorance is the cause of suffering.

(8) Eightfold Noble Path and the perfections destroy ignorance.

Buddhism is more than a religion; it is a tradition that focuses on personal spiritual development. To many, it is more of a philosophy and a humanistic way of life which can be summed up as striving to lead a moral life; being aware of one's thoughts and actions; and developing wisdom, compassion and understanding.

2.5.5. METAPHYSICS, EPISTEMOLOGY AND AXIOLOGY OF BUDDHISM

In order to understand any philosophical thinking, it is necessary to understand its metaphysics, epistemology and axiology. Therefore, we will try to understand these three about Buddhism.

- **Metaphysics of Buddhism :**

As far as it is concerned with Buddha, he did bot spend his energy in elaborating the metaphysics. He clarified that in relation to the topic of beings and world, and soul and god, nothing can be said in definite form, and in order to make human life successful and acquiring nirvana, his knowledge is of no help, therefore it is useless to think over them. On the topic of world, he just said this much that in this world no object is everlasting and not altogether mortal. On the topic of world, his moral is known as 'Pratitysamutpad'.

Buddhist philosophy begins with nirvana, the end of enlightenment. It translates as 'to blow out' or 'to extinguish,' and that can call into question exactly what kind of religion promises its followers that this is their reward for devotion. But the idea of total nonexistence is connected to self-awareness and infinite being.

And this is just what later metaphysics suggested. Nagarjuna is perhaps the greatest Buddhist philosopher after the Buddha. His Mulamadhyamakakarika (Fundamental Verses of the Middle Way) was a text which was to exert a profound influence on all subsequent Buddhisms. And in this, he appears to say that some things are simply ineffable.

Some of the Buddha's teachings appear to be about the nature of reality, however. He taught that everything is interrelated. He taught that the phenomenal world follows natural laws. He taught that the ordinary appearance of things is an illusion.

The Buddha's main concern was to eliminate suffering, to find a cure for the pain of human existence. In this respect he has been compared to a physician, and his teaching has been compared to a medical or psychological prescription. Like a physician, he observed the symptoms — the disease that human kind was suffering from; next he gave a diagnosis - the cause of the disease; then he gave the prognosis — it could be cured; finally he gave the prescription — the method by which the condition could be cured.

His first teaching, the Four Noble Truths, follows this pattern.

- First, the insight that "life is dukkha." Dukkha is variously translated as suffering, pain, impermanence; it is the unsatisfactory quality of life which is targeted here — life is often beset with sorrow and trouble, and even at its best, is never completely fulfilling. We always want more happiness, less pain. But this 'wanting more' is itself the problem:
- The second noble truth teaches that the pain of life is caused by 'tanha' — our cravings, our attachments, our selfish grasping after pleasure and avoiding pain. Is there something else possible?
- The third noble truth says yes; a complete release from attachment and dukkha is possible, a liberation from pain and rebirth.
- The fourth noble truth tells how to attain this liberation; it describes the Noble Eightfold Path leading to Nirvana, the utter extinction of the pain of existence.

Another main teaching of Buddhist metaphysics is known as the Three Marks of Existence.

- The first is Anitta, impermanence: all things are transitory, nothing lasts.
- The second is No-Self or No-Soul: human beings, and all of existence, is without a soul or self. There is no eternal, unchanging part of us, like the Hindu idea of Atman; there is no eternal, unchanging aspect of the universe, like the Hindu idea of Brahman. The entire idea of self is seen as an illusion, one which causes immeasurable suffering; this false idea gives rise to the consequent tendency to try to protect the self or ego and to preserve its interests, which is futile since nothing is permanent anyway.
- The third mark of existence is that of Dukkha, suffering.All of existence, not just human existence but even the highest states of meditation, are forms of suffering, ultimately inadequate and unsatisfactory.

The three marks of existence can be seen as the basis for the four noble truths above; in turn the three marks of existence may be seen to come out of an even more fundamental Buddhist theory, that of Pratityasamutpada: Dependent Origination, or Interdependent Co-arising. This theory says that

- all things are cause and are caused by other things;
- all of existence is conditioned, nothing exists independently, and
- there is no First Cause. There was no beginning to the chain of causality;
- it is useless to speculate how phenomenal existence started. However,
- it can be ended, and that is the ultimate goal of Buddhism - the ultimate liberation of all creatures from the pain of existence.

If Buddhism can be seen as a process of personal development, one may well ask: what is a person, if not a soul or self? In keeping with the ideas of dependent origination, Buddhism views a person as a changing configuration of five factors :

- First there is the world of physical form; the body and all material objects, including the sense organs.
- Second there is the factor of sensation or feeling; here are found the five senses as well as mind, which in Buddhism is considered a sense organ. The mind senses thoughts and ideas much the same as the eye senses light or the ear senses air pressure.
- Thirdly, there is the factor of perception; here is the faculty which recognizes physical and mental objects. Fourth there is the factor variously called impulses or mental formulations; here is volition and attention, the faculty of will, the force of habits.
- Lastly, there is the faculty of consciousness or awareness. In Buddhism consciousness is not something apart from the other factors, but rather interacting with them and dependent on them for its existence; there is no arising of consciousness without conditions. Here we see no idea of personhood as constancy, but rather a fleeting, changing assortment or process of various interacting factors. A major aim of Buddhism is first to become aware of this process, and then to eliminate it by eradicating its causes.

Many other metaphysical questions were put to the Buddha during his life; he did not answer them all. He eschewed the more abstract and speculative metaphysical pondering, and discouraged such questions as hindrances on the path. Such questions as what is Nirvana like, what preceded existence, etc., were often met by silence or what may have seemed like mysterious obscurity. Asked what happens to an Arhant, an enlightened one, upon his death, the Buddha was said to have replied: "What happens to the footprints of the birds in the air." Nirvana means 'extinction' and he likened the death of an arhant to the extinction of a flame when the fuel (karma) runs out. He evidently felt that many such questions were arising out of a false attachment to self, and that they distracted one from the main business of eliminating suffering.

- **Epistemology of Buddhism:**

Buddhist epistemology recognizes only two pramanas as valid. They are pratyaksa and anumana. The Buddha was 'pragmatic' in his conception of truth whatever was useful in overcoming evil and suffering that the Buddha considered to be true. Of course, the Buddha resembles the modern pragmatist in prescribing utility as the criterion or test of truth. But he differs from the modern pragmatist in his conception of utility itself. Unlike in modern pragmatism, the Buddha's conception of utility has a transcendental as against a mundane reference. By utility the Buddha meant whatever

is useful in overcoming the evil and sorrow inherent in existence. Again, Buddhism explicitly emphasizes reason and excludes whatever is not positively that is, perceptually known. Accordingly, the Buddha rejected the authority of Vedic tradition, especially as regards ritual. Vedic rituals were prima facie neither perceptually significant nor in accord with reason.

The Buddha's epistemology has been compared to empiricism, in the sense that it was based on experience of the world through the senses. The Buddha taught that empirical observation through the six sense fields (ayatanas) was the proper way of verifying any knowledge claims. Some suttas go further, stating that "the All", or everything that exists, are these six sense spheres and that anyone who attempts to describe another "All" will be unable to do so because "it lies beyond range". This sutta seems to indicate that for the Buddha, things in themselves are beyond our epistemological reach.

a. The Extremes of Dogmatism and Skepticism

While the Buddha's view of the spiritual path is traditionally described as a middle way between the extremes of self-indulgence and self-mortification, the Buddha's epistemology can be interpreted as a middle way between the extremes of dogmatism and skepticism.

Epistemologically speaking, Brahmanism emphasized the triple knowledge of the Vedas, and dogmatic faith in their content: "in regard to the ancient Brahmanic hymns that have come down through oral transmission and in the scriptural collections, the Brahmins come to the definite conclusion: 'Only this is true, anything else is wrong' ".

The extreme of skepticism is represented in the Pali Nikayas by some members of the Śramanic movement, which consisted of numerous groups of spiritual seekers and wandering philosophers. The Sanskrit word "*śramana*" means "those who make an effort," and probably refers to those who practice a spiritual discipline requiring individual effort, not just rituals performed by others. In order to become a śramana it was necessary to renounce one's life as householder and enter into an itinerant life, which entailed the observance of celibacy and a simple life devoted to spiritual cultivation. Most śramanas lived in forests or in secluded places wandering from village to village where they preached and received alms in exchange.

The Śramanic movement was extremely diverse in terms of doctrines and practices. Most śramanas believed in free will as well as the efficacy of moral conduct and spiritual practices in order to attain liberation from the cycle of reincarnations. However, there was a minority of śramanas who denied the existence of the after life, free will, and the usefulness of ethical conduct and other spiritual practices. Probably as a reaction to these two opposite standpoints, some śramanas adopted a skeptic attitude denying the possibility of knowledge about such matters. Skeptics are described by the Buddha as replying questions by evasion, and as engaging in verbal wriggling, in eel-wriggling (amaravikkhepa): "I don't say it is like this. And I don't say it is like that. And I don't say it is otherwise. And I don't say it is not so. And I don't say it is not not so".

For instance, even if there is no life after death and if good actions do not produce good consequences, still a moral person is praised in this life by the wise, whereas the immoral person is censured by society. However, if there is life after death and good action produce happy consequences, a moral person is praised in this life, and after death he or she goes to heaven. On the

contrary, the immoral person is censured in this life, and after death he or she goes to hell. Therefore, it is better to believe that moral actions produce good consequences even if we do not have personal experience of karma and rebirth.

Faith in the Buddha, his teachings, and his disciples, is highly regarded in the Pali Nikayas: it is the first of the five factors of striving , and a necessary condition to practice the spiritual path. Buddhist faith, however, is not unconditional or an end in and of itself but rather a means towards direct knowledge that must be based on critical examination, supported by reasons, and eventually verified or rooted in vision.

Another common interpretation of the advice to the Kalamas is that for the Buddha of the Pali Nikayas only personal experience provides reliable knowledge. However, this is misleading because analogical and inferential reasoning are widely used by the Buddha and his disciples to teach others as well as in debates with non-Buddhists. Similarly, analytical or philosophical meditation is a common practice for the attainment of liberation through wisdom. Personal experience, like any other means of knowledge is to be critically examined. Except in the case of Buddhas and liberated beings, personal experience is always tainted by affective and cognitive prejudices.

Here, the epistemology of the Buddha is a special form of realism that allows both for the direct perception of reality and the constructions of those less realized. Only Buddhas and liberated beings perceive the world directly; that is, they see the Dharma, whose regularity and stability remains independent of the existence of Buddhas. Unenlightened beings, on the other hand, see the world indirectly through a veil of negative emotions and erroneous views. Some texts go so far as to suggest that the world is not simply seen indirectly, but rather that it is literally constructed by our emotional dispositions. For instance, in the *Majjhima Nikaya*, the Buddha explicitly states that "what one feels, one perceives" (YaC vedeti, taC sañjanati). That is, our knowledge is formed by our feelings. The influence of feelings in our ways of knowing can also be inferred from the twelve-link chain of dependent arising, which explains the arising and cessation of suffering. The second link, saEkhara, or formations, conditions the arising of the third link, consciousness. The term saEkhara literally means "put together," connoting the constructive role of the mental factors that fall into this category, many of them affective in nature.

Higher Knowledge and the Question of Empiricism

Contemplative experiences are of two main types: meditative absorptions or abstractions (jhana), and higher or direct knowledge (abhiñña). There are six classes of higher or direct knowledge: the first one refers to a variety of supernatural powers including levitation and walking on water; in this sense, it is better understood as a know-how type of knowledge. The second higher knowledge is literally called "divine ear element" or clairaudience. The third higher knowledge is usually translated as telepathy, though it means simply the ability to know the underlying mental state of others, not the reading of their minds and thoughts.

The next three types of higher knowledge are especially important because they were experienced by the Buddha the night of his enlightenment, and because they are the Buddhist counterparts to the triple knowledge of the Vedas. The fourth higher knowledge is retrocognition or knowledge of past lives, which entails a direct experience of the process of rebirth. The fifth is the divine eye or

clairvoyance; that is, direct experience of the process of karma, or as the texts put it, the passing away and reappearing of beings in accordance with their past actions. The sixth is knowledge of the destruction of taints, which implies experiential knowledge of the four noble truths and the process of liberation.

Some scholars have interpreted the Buddha's emphasis on direct experience and the verifiable nature of Buddhist faith as a form of radical empiricism (Kalupahana 1992), and logical empiricism (Jayatilleke 1963). According to the empiricist interpretation, Buddhist faith is always subsequent to critically verifying the available empirical evidence. All doctrines taught by the Buddha are empirically verifiable if one takes the time and effort to attain higher or direct knowledge, interpreted as extraordinary sense experience. For instance, the triple knowledge of enlightenment implies a direct experience of the processes of karma, rebirth, and the four noble truths. Critiques of the empiricist interpretation point out that, at least at the beginning of the path, Buddhist faith is not always based on empirical evidence, and that the purpose of extraordinary knowledge is not to verify the doctrines of karma, rebirth, and the four noble truths (Hoffman 1982, 1987).

Whether or not the Buddha's epistemology can be considered empiricist depends on what we mean by empiricism and experience. The opposition between rationalism and empiricism and the sharp distinction between senses and reason is foreign to Buddhism.

Axiology and ethics of Buddhism

The Buddha's ethics are based on the eliminate suffering and on the premise of the law of karma. Buddhist ethics have been termed eudaimonic (with their goal being well-being) and also compared to virtue ethics (this approach began with Damien Keown). Keown writes that Buddhist Nirvana is analogous to the Aristotelian Eudaimonia, and that Buddhist moral acts and virtues derive their value from how they lead us to or act as an aspect of the nirvanic life.

The Buddha outlined five precepts (no killing, stealing, sexual misconduct, lying, or drinking alcohol) which were to be followed by his disciples, lay and monastic. There are various reasons the Buddha gave as to why someone should be ethical.

- First, the universe is structured in such a way that if someone intentionally commits a misdeed, a bad karmic fruit will be the result (and vice versa). However the important word here is intentionally, for the Buddha, karma is nothing else but intention/volition, and hence unintentionally harming someone does not create bad karmic results.
- This idea leads into the second moral justification of the Buddha; intentionally performing negative actions reinforces and propagates mental defilements which keep persons bound to the cycle of rebirth and interfere with the process of liberation, and hence intentionally performing good karmic actions is participating in mental purification which leads to nirvana, the highest happiness.
- The third axiological and ethical consideration takes the view of not-self and our natural desire to end our suffering to its logical conclusion. Since there is no self, there is no reason to prefer our own welfare over that of others because there is no ultimate grounding for the differentiation of "my" suffering and someone else's. Instead an enlightened person would just work to end suffering tout court, without thinking of the conventional concept of persons. According to this argument, anyone who is selfish does so out of ignorance of the true nature of personal identity and irrationality.

- Early Buddhist ethics includes more than lists of precepts and more than the section on ethical training of the eightfold noble path; that is, Buddhist ethics cannot be reduced to

➢ right action (abstaining from killing, stealing, lying),

➢ right speech (abstaining from false, divisive, harsh, and useless speech), and

➢ right livelihood (abstaining from professions that harm living beings).

Besides bodily and verbal actions, the Pali Nikayas discuss a variety of mental actions including thoughts, motivations, emotions, and perspectives. In fact, it is the ethics of mental actions that constitutes the main concern of the Buddha's teaching.

- Early Buddhist ethics encompasses the entire spiritual path, that is, bodily, verbal, and mental actions. The factors of the eightfold noble path dealing with wisdom and concentration (right view, right intentions, rights effort, right concentration, right mindfulness) relate to different types of mental actions. The term "right" (samma) in this context does not mean the opposite of "wrong," but rather "perfect" or "complete;" that is, it denotes the best or the most effective actions to attain liberation. This, however, does not imply that the Buddha advocates the most perfect form of ethical conduct for all his disciples.

The most common interpretations of Buddhist axiology and ethics view its nature as either a form of agent-based virtue ethics or as a sophisticated kind of consequentialism. The concern for virtue cultivation is certainly prevalent in Buddhism, and evidently the internal mental state or motivation underlying actions is extremely important to determine the overall goodness of actions, which is the most important factor for advanced practitioners. Similarly, the concern for the consequences of actions, whether or not they lead to the happiness or the suffering of oneself and others, also pervades the Pali Nikayas. However, the goodness of actions in the Pali Nikayas does not depend exclusively on either the goodness of motivations or the goodness of consequences. Respect to status and duty, observance of rules and precepts, as well as the intrinsic goodness of certain external bodily and verbal actions are equally necessary to assess the goodness of at least certain actions. Since the foundations of right action in the Pali Nikayas are irreducible to one overarching principle, value or criterion of goodness, early Buddhist ethics is pluralistic in a metaethical sense. Given the unique combination of deontological, consequentialist, and virtue ethical trends found in the Pali Nikayas, early Buddhist ethics should be understood in its own terms as a sui generis normative theory inassimilable to Western ethical traditions.

In order to be freed from the lust of life and materialism, he discovered the Eight-Fold path of the Aryas. The Eightfold Path is expressed as the roads to the cessation of suffering and to enlightenment for the purpose of personal happiness and the happiness of all others for values and liberation. They are:

1. **Right understanding** for realization of life (samma dhitti);
2. **Right thought** for realization of life (samma sankappa);
3. **Right speech** for realization of life (samma vacha);
4. **Right Action** for realization of life (samma kammantha);
5. **Right Livelihood** for realization of life (samma ajeeva);

6. **Right Effort** for realization of life (samma vayayama);
7. **Right Awareness** for realization of life (samma mathi);
8. **Right Concentration** for realization of life (samma samadhi).

The above eight paths consist of conduct, concentration and knowledge harmoniously cultivated. In Indian philosophy knowledge and morality are thought inseparable simply because morality or doing of good, depends on the knowledge of what is good, about which all philosophers would agree, but also because perfection of knowledge is regarded as impossible without morality perfection, control of passions and prejudices. Buddha explicitly states in one of his discourses that virtue and wisdom purify each other and the two are inseparable. In the eight fold path one starts with 'right' views - a mere intellectual apprehension of the four fold truth. The mind is not yet purged of the previous wrong ideas and the passions or wrong-emotions arising therefore; moreover, old habits of thinking, speaking and acting also continue still.

In a word, conflicting forces the new good ones and the old bad ones - create; in terms of modern psychology, a divided personality. The seven steps beginning with right resolve furnish a continuous discipline for resolving this conflict by reforming the old personality. Repeated contemplation of what is true and good, training of the will and emotion accordingly, through steadfast determination and passionless behaviour, gradually achieve the harmonious personality in which thought and will and emotion are all thoroughly cultured and purified in the light of truth.

The Buddhist philosophy is that form of Indian Philosophy which doesn't see the universe as having originated as an object neither a result of spirituality, but considers it rather Goal-headed and ensuant. It doesn't accept the concept of Spirit and the God and expresses the sole destination of a human life as the attainment of Nirvana, which can be attained by the Four-Holy Truths, the Eight-fold Path and the Three Gems.

The last step of perfect concentration is thus made possible by the removal of all obstacles. The result of this unhampered concentration is perfect insight or wisdom, to which the riddle of existence stands, is clearly revealed once for all. Then ignorance and desire are cut out from their roots and the source of misery vanishes. Perfect wisdom, perfect goodness and perfect equality and complete relief from suffering are simultaneously attained.

2.5.6: EDUCATIONAL IMPLICATIONS OF BUDDHISM

Buddhism has a great contribution in planning and establishing the structure of education in our country. Even today it helps us to solve our problems related to education. Following is a description of its effects on education.

(i) Aims and Objectives of Education

According to Buddhism human life has two sides—one is worldly and the other is godly. From worldly view, Buddhists have emphasized on the development of human body, brain, nature and values and professional and with godly view they believe for acquiring nirvana, four arya's truth, 'arya ashtang' path and 'triratan' are must. According to them this should be the objective of education. In todays language we can see and understand them in the following form —

1. Physical development,
2. End to ignorance and gain of knowledge,

3. Education of social conduct,
4. Conservation of human culture,
5. Moral and character development,
6. Professional development,
7. Attainment of nirvana (free from the worldly sorrows).

According to Buddhism existence is impermanent. All things, mental and physical, are transitory. There is no being. There is only becoming. Education is the way to make oneself becoming.

(ii) Curriculum of education

Buddhists have divided the complete education into three levels—first, upper and Buddhist education. At the first level, a book called 'sidharast' is taught with the helo of which language 'Pali' is taught. Side by side mathematic numerals are also taught. After this reading and writing of laguage is taught. After getting the general knowledge of language, five sciences (word education, sculpture education, medical education, motive and religious education) is started to being taught and the general knowledge of Buddhism is given. According to them the Moral education is not taught in words, rather taught in a practical way.

At the level of upper education, firstly grammar, religion, astrology, medical and philosophy was taught and after that specific education used to start.

(iii) Teaching techniques

According to the Buddhists there are three ways to learn—body, heart and consciousness. Their clarification is that students of different age groups are different from the view of their body, heart and consciousness, that is why the teaching techniques should also be different for them. They developed different teaching techniques for students of different age groups.

Here we present the description of various teaching techniques developed by the Buddhists.

1. Repetition technique
2. Performance and practice technique
3. Explanation technique
4. Lecture technique
5. Debate and reasoning technique
6. Forum
7. Conferences technique,
8. Self-study technique—this technique was first developed by the Buddhists monks only.

iv. Buddhism and Discipline

In the religion of Buddhism, both the student and the teachers have been given tough ethical conditions and both of them have been ordered to follow them strictly. For the teachers, have been instructed to follow the knowledge of four aryas and arya ashtang path and also triratan, for the general students there are set 10 rules which are instructed to be followed.

In Buddhism where the teachers have been instructed to keep an eye on the behaviour of the students, students have also been instructed to keep an eye on the behaviour of their teachers.

(v) School and Buddhism

Buddhist education is given at monastries and recreational places. Only these were the schools, high schools and universities of that time. These schools were home to Buddhist groups. The power of the group was greater than all. The group used to undertake the expenditures of the students and the teachers. They used to create the rules for the behaviour of the teachers as well as the students, which they had to follow strictly. Buddhist were in the favor of creating different schools for different types of education, but in any type of school they wanted to see the teachers and students in compliance with the shashtras. This is how they were in the favor of strict arrangements in the schools.

Question :

Let Us Check Our Progress

a. The four noble truth are ——————————————————————

b. Object is everlasting and not altogether mortal this Buddhist theory known as ————-

c. The general students there are set ——— rules which are instructed to be followed.

2.5.7: LET US SUM UP

Buddhism has been described as a very pragmatic Philosophy. It does not indulge in metaphysical speculation about first causes; there is no theology, no worship of a deity or deification of the Buddha. Buddhism takes a very straightforward look at our human condition; nothing is based on wishful thinking, at all. Everything that the Buddha taught was based on his own observation of the way things are. Everything that he taught can be verified by our own observation of the way things are.

The eightfold path consists of moral conduct, concentration and insight. Insight includes right belief and right resolve. Moral conduct comprises right speech, right conduct and right livelihood. Concentration comprehends right effort, right mindfulness and right Concentration.

The eightfold Path is the best way to freedom from suffering. It leads to complete extension of suffering. Buddhism is pessimism in so far as it looks upon life as suffering. But it is optimism in so far as it aims at extinction of suffering in this life. These are the basic aims of education as well as of life.

According to Buddhism Education is a developmental process as it believes in transient causation. Causation itself is development or transformation, education also being a dynamic process is the source of one's development technique. Education, then, facilitates individual development — continuous journey for attaining wisdom, perfect, knowledge in all its entirety.

2.5.8: SUGGESTED READINGS

1. Philosophical and Social Bases of Education—Mathur, S.S., Vinod Pustak Mandir.
2. Philosophical Bases of Education—Sharma, Yogendra Kumar, Madhulika Sharma.
3. Buddhaghosa, Visuddhimagga, Vol. 1, p. 36.
4 Buddism in India- Gail Omvedt, Sage Publication, New Delhi.

2.5.9: ASSIGNMENT

1. What do you mean by Buddhism? Please clarify.
2. Describe the fundamentals of Buddhism.
3. Write short note on 'Buddha Philosophy and Education'.

Unit: 6
PHILOSOPHY OF JAINISM

CONTENT STRUCTURE :

2.6.1 : Introduction

2.6.2 : Objectives

2.6.3 : Concept of Jainism.

2.6.4 : Metaphysics of Jainism

2.6.5 : Epistemology of Jainism

2.6.6 : Ethics of Jainism

2.6.7 : Educational Implications of Jainism.

2.6.8 : Let Sum up

2.6.9 : Suggested Readings

2.6.10: Assignments

2.6.1 : INTRODUCTION

This unit introduces the Philosophy of Jainism.. Therefore, this unit informs the Jaina metaphysics, epistemology and Axiology. Like other Indian systems, Jaina system also deals with the sources of knowledge. The Jaina metaphysics is realistic and relativistic pluralism. The Jaina holds that reality consists of the manyness of reality. Therefore, the Jaina metaphysics is known as anekanatavada.On the other hand Jaina epistemology talks of the three sources of knowledge, perception, inference and testimony. Apart from this, it holds that it is not possible for ordinary people to know all the qualities of a thing. It indicates that people can know only some qualities. That is why, people can get relative knowledge. This relative knowledge of a thing is called syadvada. So, syadvada is the relativity theory of knowledge. So, metaphysics and epistemology are the two aspects of the same teaching in Jaina system.

Jain philosophy attempts to explain the rationale of being and existence, the nature of the Universe and its constituents, the nature of bondage and the means to achieve liberation.

2.6.2 : OBJECTIVES :

After completing this unit you will be able to:

To state the core Ideas of Jaina Philosophy

To discuss the Metaphysical aspect of Jainism

To explain the Epistemology of Jaina Philosophy

Be acquainted with the educational implication of Jaina Philosophy

2.6.3 : CONCEPT OF JAINISM

Jainism is a heterodox system in the sense that it is non-Vedic, ascetic and monastic in character. It is quite independent of the Brahmanical system. Jainism does not acknowledge the authority of Vedic tradition. It is a system, which believes in non-theistic. Many scholars attempt to describe it, as an atheistic, religion discussing its origin and antiquity of Jainism. Jainism represents an important branch of Sramanic system of ancient India.

A Brief Account of Jainism

The origin of the Jaina faith can be traced out in the pre-historic time. The Jaina system believes in 24 Tirthankaras or the liberated propagators of the faith. Mahavira, the last Tirthankara, is not regarded as the founder of the system, because even before him Jaina teachings were existent. Although Mahavira is not regarded as the founder of the system, still his teachings gave a new outlook to Jaina system. Mahavira, who is also known as Vardhamana, was contemporary to Gautam Buddha.

Jainism emphatically asserts that every soul is capable of attaining perfection if it wilfully exerts in that direction. But the real situation is that from time eternal the soul is bound with matter and it is the aim of every person to get the soul rid of matter so that soul can assume its true state. This spiritual emancipation requires the knowledge of the beatific condition and of the causes which stand in the way of its attainment. To find out these causes it is necessary to understand what are the existing elements or substances of nature and mode of their interaction.

Basic Ideas of Jainism:

Jainism believes that the whole universe can be divided into two categories, viz., Jiva, i.e., soul and Ajiva, i. e. non-soul. These two - Jiva and Ajiva - exhaust between them all that exists in the universe and Jaina philosophy is based on the nature and interaction of these two elements. It can be said in short that the living and the non-living, by coming into contact with each other, forge certain energies which bring about birth, death and various experiences of life; this process could be stopped, and the energies already forged destroyed, by a course of discipline leading to salvation.

A close analysis of this brief statement shows that it involves following seven propositions.

1. Firstly, that there is something called the living.
2. Secondly, that there is something called the nonliving.
3. Thirdly, that the two (i. e. the living and nonliving) come into contact with each other.
4. Fourthly, that the contact leads to the production of some energies.
5. Fifthly, that the process of this contact could be stopped.
6. Sixthly, that the existing energies could also be exhausted; and
7. Lastly, that salvation could be achieved.

These seven propositions are called the seven tattvas or realities in Jainism.

Tattvas of Jainism:

These seven tattvas are termed as follows:

1. Jiva (i. e. Living substance)
2. Ajiva (i. e. matter or non-living substance)
3. Asrava (i. e., the influx of Karmic matter in the soul
4. Bandha (i. e., bondage of soul by Karmic matter)
5. Samvara (i. e., the stopping of Asrava)
6. Nirjara (i. e., the gradual removal of Karmic matter).
7. Moksha (i. e., the attainment of perfect freedom or salvation).

It is clear that the first two of the tattvas deal with the nature and enumeration of the external substances of nature and the remaining five tattvas deal with the interaction between these two substances, viz., Jiva, i. e., spirit and Ajiva, i. e., matter.

1. Jiva:

As regards the characteristics of Jiva, i.e., the soul, it is stated that there is an infinite number of souls; in fact, the whole world is literally filled with them. The souls are substances and as such they are eternal. Again, their characteristic mark is intelligence, which can never be destroyed. Further, the soul is ever all perfect, all powerful; but by ignorance it identifies itself with the matter and hence its degradation and troubles start.

Furthermore, souls are of two kinds, viz.,

1. Samsari, i. e., mundane souls and
2. Siddha or Mukta, i. e. liberated souls.

Out of these, the samsari jivas, i. e. the mundane souls, are the embodied souls of living beings in the world and are still subject to the cycle of Births and Deaths and the Siddha or Mukta Jivas are the liberated souls and as such

1. they will not be embodied in future,
2. they have accomplished absolute purity,
3. they dwell in the state of perfection at the top of the universe,
4. they have no more to do with worldly affairs,
5. they have reached Mukti or Nirvana or Nivrtti, i. e. liberation, and in their condition they have four enjoyments, viz., Ananta-darsana, i.e.,. unlimited perception, Ananta-jnana, i. e., perfect knowledge, Ananta-Virya, i.e., infinite power, and Ananta- sukha, i.e., unbounded happiness.

In addition, from the Metaphysical point of view the difference between the Samsari-Jiva, i.e., the mundane soul, and the Mukta Jiva i.e. the liberated soul, consists in the fact that the former is permeated with subtle matter known as Karma, while the latter is absolutely pure and free from any material alloy.

2. Ajiva:

Jaina philosophy starts with a perfect division of the universe into living and non-living substances, Jiva and Ajiva. The non-soul substances are of five kinds, viz.,

1. Pudgala, i.e., matter,
2. Dharma, i.e., medium of motion,
3. Adharma, i.e., medium of rest,
4. Akasa, i.e., space, and
5. Kala i.e., time

These six living and non-living substances are called Dravyas in Jaina Philosophy.

A Dravya has got three characteristics. First, Dravya has the quality of existence. Secondly, it has the quality of permanence through origination and destruction. Thirdly, it is the substratum of attributes and modes.

The Dravya is thus un-created and indestructible, its essential qualities remain the same and it is only its Paryaya or mode or condition, that can and does change.

3. Asrava :

The third principle Asrava signifies the influx of Karmic matter into the constitution of the soul. Combination of Karmic matter with Jiva is due to Yoga. Yoga is the activity of mind, speech and body. Thus Yoga is the channel of Asrava. The physical matter which is actually drawn to the soul cannot be perceived by the senses as it is very fine.

4. Bandha :

When the Karmic matter enters the soul, both get imperceptibly mixed with each other. Bandha or bondage is the assimilation of matter which is fit to form Karmas by the soul as it is associated with passions. The union of spirit and matter does not imply a complete annihilation of their natural properties, but only a suspension of their function, in varying degree, according to the quality and quantity of the material absorbed.

Thus, the effect of the fusion of the spirit and matter is manifested in the form of a compound personality which partakes of the nature of both, without actually destroying either.

5. Samvara :

Effective states of desire and aversion, and activity of thought, speech or body are the conditions that attract Karmas, good and bad, towards the soul. When those conditions are removed, there will be no Karmas approaching the Jiva, that is complete Samvara — a sort of protective wall shutting out all the Karmas is established round the self.

Thus Samvara is the stoppage of inflow of Karmic matter into the soul. There are several ways through which the stoppage could be effected.

6. Nirjara :

Nirjara means the falling away of Karmic matter from the soul. The soul will be rendered free by the automatic falling out of the Karmas when they become ripe. But this is a lengthy process. The falling away may be deliberately brought through the practice of austerities.

Thus, Nirjara is of two kinds. The natural maturing of a Karma and its separation from the soul is called Savipaka Nirjara and inducing a Karma to leave the soul, before it gets ripened by means of ascetic practices is called Avipaka Nirjara.

7. Moksha :

Moksha or liberation is the freedom from all Karmic matter, owing to the non-existence of the cause of bondage and the shedding of all the Karmas. Thus complete freedom of the soul from Karmic matter is called Moksha.

2.6.4 : METAPHYSICS OF JAINISM:

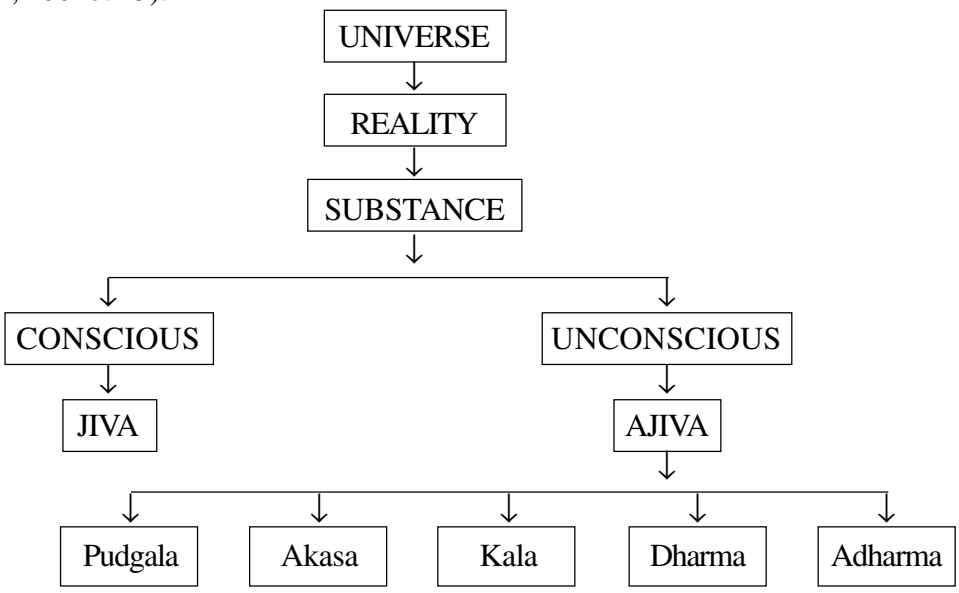
The Jaina metaphysics holds that reality possesses innumerable qualities. So, an object possesses infinite number of characteristics of its own. Therefore, it is not possible for ordinary people to comprehend all the qualities of a thing. People can know only some qualities. Therefore, the Jaina metaphysics is relativistic pluralism. It is also called anekantavada in the sense that an object or a thing includes infinite number of characteristics. Ordinary people cannot cover all the aspects of a thing. So, different standpoints or statements of a thing is called anekantavada.

Again, Jaina metaphysics is relativistic in the sense that no statement or a standpoint of a thing can claim to be absolute. Therefore, all truths are relative in comparison to others. Every standpoints or statements are partially true. So, the Jaina metaphysics is called anekantavada or many ness of reality.

The six constituent of the existence of Realities

Soul or Consciousness	Jiva	Living Substance
Matter	Pudgala	Non-living Subatance
Space	Akasa	Non-living Substance
Time	Kala	Non-living Substance
Principle of motion	Dharma	Non-living Substance
Principle of rest	Adharma	Non-living Substance

Source: (Shah, 2004b: 45).



Doctrine of Anekantvada

Anekantavada is one of the most important and basic doctrines of Jainism. It refers to the principles of pluralism and multiplicity of viewpoints, the notion that truth and reality are perceived differently from diverse points of view, and that no single point of view is the complete truth.

This is to contrast attempts to proclaim absolute truth with adhgajanyayah, which can be illustrated through the parable of the "Blind Men and an Elephant". In this story, each blind man felt a different part of an elephant (trunk, leg, ear, etc.). All the men claimed to understand and explain the true appearance of the elephant, but could only partly succeed, due to their limited perspectives. This principle is more formally stated by observing that objects are infinite in their qualities and modes of existence, so they cannot be completely grasped in all aspects and manifestations by finite human perception. According to the Jains, only the Kevalins - the omniscient beings - can comprehend objects in all aspects and manifestations; others are only capable of partial knowledge. Consequently, no single, specific, human view can claim to represent absolute truth.

Origins of Anekantavada:

The origins of anekantavada can be traced back to the teachings of Mahavira (599-527 BCE), the 24th Jain Tirthankara. The dialectical concepts of syadvada (conditioned viewpoints) and nayavada (partial viewpoints) arose from anekantavada, providing it with more detailed logical structure and expression. The Sanskrit compound an-eka-anta-vada literally means "doctrine of non-exclusivity"; it is translated into English as "scepticism" or "non-absolutism". An-ekanta "uncertainty, non-exclusivity" is the opposite of ekanta (eka+anta) "exclusiveness, absoluteness, necessity".

[source:.wikipedia.org/wiki/Jain_philosophy]

Anekantvada described the whole world as manifold, an ever-changing reality, an infinite of view points depending on the time, place, nature and state of the one who is the viewer and that which viewed. Truth can't be grasped from any particular view point alone. Truth is the sum total of all different view points. Truth is to be understood in a very comprehensive way through observing the different views of reality in their proper perspective, and analyzing the primary and secondary standpoints, giving them due consideration.

Anekantvada emphasizes that the truth is many sided. Reality can be looked at from various angles. Anekantvada consists in a many-sided approach to the study of the problems of knowledge of reality. It emphasizes a catholic outlook towards all that we see and experience. Intellectual tolerance is the foundation of this doctrine. It arose as an antidote to the one-sided error and absolute approach to the study of truth and reality. It arose out of the intellectual confusion of the conflicting views of the different people and religious men on the problem of the nature of reality. It presents a complete and synoptic picture of reality from multiple points of view. The doctrine of Anekantvada affirms that the different facets of reality have to be observed from various points of view by the predications of affirmation, negation and indescribability in order to understand it in all its completeness and true comprehensive way.

Application of Anekantavada:

Anekantavada teaches us that the kingdom of truth can be reached through different ways. It also teaches us that we should not impose our own thoughts or views on others, but should try to

reconcile with the thoughts or view points of others. This principle, therefore, if earnestly put into practice shows us

- how to remove our short sighted, selfish and partial outlook.
- how to remove discord and disharmony and establish concord and harmony in life,
- how to respect candid opinions of all free thinkers of the world,

and, therefore, the roots of modern democracy could be traced in this Jaina principle. It establishes

- unity in diversity.
- It promises reconciliation of divergent or conflicting statements, thoughts, ideologies, systems, religions etc.
- It can be a great instrument to peaceful co existence and unity in the world.

In short Jainism has advocated for all the best virtues required for peaceful and happy living for all the living beings and also required for the liberation of the soul from the cycle of birth and death. Jainism has thought of every possible situation in life, has elaborately analyzed them and has guided the followers of all categories towards the right path.

Check Your Progress I

Note: Use the space provided for your answer

1) Give a short note on Syadvada or the Jaina theory of judgment?

.....

.....

2) What is the sevenfold classification of predications in Syadvada?

.....

2.6.5 : EPISTEMOLOGY OF JAINISM:

The Jainas admit three sources of knowledge. They are respectively: Perception, inference and testimony. The Jaina shows that inference produces valid knowledge when it obeys the logical rules of correctness. Like inference, testimony also produces valid knowledge when it is the report of a reliable authority. From these sources of knowledge, it can be held that Jainas admit two kinds of knowledge. They are immediate and mediate or direct and indirect.

The Jainas admit the twofold classification of knowledge — immediate and mediate. But they point out that what is ordinary regarded as immediate knowledge is only relatively immediate perception of external or internal object through the senses or mind is immediate as compared with inference. Still such knowledge cannot be said to be absolutely immediate, because even here the soul knows through the medium of something else.

In addition to such ordinary or empirical immediate knowledge, there is also really or absolutely immediate knowledge, which a soul attains, by removing its Karma obstacles. In such knowledge the souls consciousness becomes immediately related to objects, without the medium of senses, etc., simply by the removal of the Karmas that prevented it from reaching those objects.

There are three kinds of really immediate knowledge -

(1) Avadhijana — When a person has partially destroyed and allayed the influences of Karmas, he acquires the power of knowing objects which have forms but are too distant or minute or obscure to be observed by the senses or manas. Such immediate knowledge by the unaided soul is, however, limited as its objects are limited and therefore, it is called avadhijana.

(2) Manah-parayaya — When a person has overcome harted, jealousy, etc, he can have direct access to the present and past thoughts of others. This knowledge is called manah-Parayaya (entering a mind).

(3) Kevalajana — When all Karmas that obstructed knowledge are completely removed from the soul, there arises in it absolute knowledge or omnia science. This is called Kevalajana. Only the liberated souls have such knowledge.

According to Jaina system, knowledge is again, divided into two kinds.

- Pramana
- Naya

Pramana: The first one is Pramana. It imeans knowledge of a thing as it is. PramaGa are of five kinds:

- Mati or "sensory knowledge",
- Sruta or "scriptural knowledge",
- Avadhi or "clairvoyance",
- Manahparyaya or "telepathy", and
- Kevala or "omniscience"

Naya: The second one is Naya. It means the knowledge of a thing in its relation. Naya means a standpoint of thought about a thing. Nyaya, as a pramana, holds that we can get partial knowledge of a thing. So, Partial knowledge of different aspects of a thing is called Naya. It is not at all possible to get complete knowledge of a thing. Therefore, according to Jaina, truth is relative to our different standpoints of thought about a thing.

The Jainas point out that the different kinds of immediate and mediate knowledge that we possess about objects show that every object has innumerable characters. It is viewed that an omniscient person is capable to obtain an immediate knowledge of an object in all its aspects but an imperfect being can not do so. Such partial knowledge about someone is called 'naya'. Judgment based on such partial knowledge is also called a 'naya'. Judgment about any object is, therefore, true only in reference to the standpoint occupied and the aspect of the object considered.

The Jainas insist that every judgment should be qualified by some word like 'somehow' or 'in some respect', so that limitations of this judgment and the possibility of other alternative judgments from other points of view may be always clearly borne in mind. It implies, then, a principle — certainty under some conditions, i.e. the judgmental approach is perhaps open or flexible.

Doctrine of Syadvada:

Syadvada is the theory of relativity of knowledge. It is also called saptabhangi naya or the seven fold judgment. The word 'syat' literally means 'may be', 'probable', 'perhaps'. Therefore, it is also

known as the probability theory of knowledge. Jainism through the theory of 'syadvada' holds that reality has infinite number of characteristics. People cannot know all the characteristics of a thing. Therefore, human knowledge regarding the absolute nature of a thing is probable. People can get partial knowledge of a thing. This indicates that Jainism advocates the probability theory of knowledge. But it does not mean that Jainism leads to skepticism or the impossibility of knowledge. Reality has infinite characteristics. It is not possible to bring out the complete nature of reality from one standpoint or angle. Therefore, all judgments are relative or conditional in relation to other judgments from different standpoints or perspectives.

The theory of Syadvada holds that all judgments are conditional, relative and limited. No judgment can be absolutely wrong or true. This indicates that judgments are partially true or partially false. It means that all affirmative judgments presuppose negations as well as all negative judgments presuppose affirmation. Affirmation and negation are the two edges of a judgment.

In case of explaining the nature of Syadvada, Jainas put forward a story of the six blind men and an elephant. The blind men put their hands on the different parts of the elephants in order to describe the whole animal. The first blind man who touched the ear of the elephant opined that the elephant was like a- country made fan. The second blind man who caught the leg of the elephant viewed that the elephant was like pillar. The third blind man who touched the trunk of the elephant said that the elephant was like a python. The fourth blind man who caught the tail of the elephant viewed that the elephant was like a rope. The fifth one who touched the side said the elephant was like a wall. The last one who touched forehead opined that the elephant was like the breast. From the story of the six blind men and an elephant it is derived that each blind man thought that his explanation regarding the elephant was correct. But he, who can see the animal, can view that each explanation regarding the elephant was partially correct. Therefore, the syadvada theory of the jainas shows that our judgments or standpoints bring out the different aspects of reality. Our judgments express only partial truth. No judgments are absolutely true. The word 'syat' should be incorporated to all judgments to point out the conditional character of judgments. The Jainas distinguish seven kinds of Judgment including these two and the Jaina logic recognizes the following seven kinds of conditional judgments:-

(1) Somehow, S is P (Syat asli)

(2) Somehow, S is not P (Syat nasti)

(3) Somehow, S is P, and is also not P (Syat astica, nastica)

(4) Somehow, S is indescribable (Syat avaktavyam).

(5) Somehow, S is P and is also indescribable (Syat asli ca, avaktavyamca).

(6) Somehow, S is not P, and is also indescribable (Syat nastica, avklavyamca),

(7) Somehow, S is P, and is also not P, and also indescribable (syat astica, nastica, avaktavyam ca)

Now, we can explain the seven fold judgments of syadvada:

1. Syadasti (Perhaps S is): This is an affirmative judgment. From the point of its own substance, place, time, and nature, a thing exists. The pot exists as an earthen substance possessing red colour in summer at Guwahati.

2. Syannasti (Perhaps Sis not): This is a negative judgment. From the point of view of substance, place, time, and nature, a thing does not exist as other things. The pot does not exist as watery substance possessing dark colour in spring at Nagaon.

3. Syadasti nasti (Perhaps S is, is not): The third is an affirmative and negative judgment in succession. The pot exists as its own substance in its own place at a particular time with its own nature. It does not exist as substance in another place at another time with another quality.

4. Syadavaktavyam (perhaps, S is indescribable): This is simultaneously both affirmative judgment, and negative judgment. The presence nature of the pot as an earthen substance with its red colour and absence of its watery substance with dark colour inhere in a substance. But it cannot be expressed. But in another sense it cannot be absolutely indescribable. Like the concept of maya of Advaita Vedanta it includes both the thesis and the anti-thesis at the same time.

5. Syadasti cha avaktavyam (perhaps, S is and indescribable): This is an affirmative judgment combined with simultaneous affirmative judgment and negative judgment. This indicates that when a predicate is affirmed of a thing with reference to its substance, place, time, and nature, and a predicate is affirmed of it as decribed above and denied of other things as different substances in other places and times and with different natures simultaneously. Hence, we get affirmation and indescribability.

6. Syadnnasti cha avaktavyam (perhaps S is and indescribable): This is a negative judgment combined with simultaneous affirmative and negative judgment. It shows that when a predicate is denied of other substances in different places at other times and with different natures and a predicate is simultaneously affirmed of the thing and denied of other things. Hence, we get negation and indescribability.

7. Syadasti cha nasti cha avaktavyam: (Perhaps S is, is not, and indescribable) This is successive affirmative judgment and negative judgment combined with simultaneous affirmative and negative judgment. It indicates that when a predicate is affirmed of a thing as its own substance in its own place at its own time and with own nature, and the same predicate is denied of other substances in other places at other times and with other natures. So, affirmation and denial are made simultaneously. Here, we get affirmation, negation, and indescribability.

From these seven fold judgments it is clear that an affirmative judgment holds that a thing exists in its own substance, its own place, its own time, and with its own nature. On the other hand, a negative judgment holds that a thing is non-existent in its other substances, other places, other times, and with other natures. The five other judgments are the combinations of affirmative and negative judgment. Affirmation implies negation and negation implies affirmation. It shows that a thing is existent with its own nature and non-existent with other natures. Therefore, it is clear that Jaina's concept of Syadvada advocates relative pluralism or a many-sided of reality.

[source : kkhsou.in. philosophy.jainism]

Seven Forms of Syadvada:

The Jaina doctrine of Syadvada is the system of safeguards which aims at maintaining the proper consistency in metaphysical thought. It proceeds to unravel the theory of contradiction and points out that contradictory speech is resolvable ultimately in seven limbs or forms, as follows:

(1) Affirmance (of a proposition)

(2) Denial (of a proposition)

(3) Indescribability (simultaneous affirmance and denial)

(4) Affirmance + denial

(5) Affirmance + indescribability

(6) Denial + indescribability

(7) Affirmanace + denial + indescribability

From the epistemological standpoint we can know only some characters of an object; this is called 'Syadvada'. Again, from the metaphysical standpoint this is called anekantavada, because an object has infinite number of characteristics. Indeed, the two doctrines like Syadvada and Anekantavada are the two sides of the same coin. We commit a mistake in Jaina metaphysics when we regard a statement or a standpoint as an ultimate or absolute view regarding an object. Then we commit a fallacy of ekantatavada.

Check Your Progress I

Note: Use the space provided for your answer

1) Write a short note on Jaina epistemology?

.....

3) What is Kevala: Omniscience and Mati: Sensuous Cognition?

.....

2.6.6 : ETHICS OF JAINISM

To govern the conduct of man in the society, ethics is emphatically considered to be a very important code of rules by all the great religions of the world. Ethics is the foundation of all religions indicating the relationship between man and the universe, and his goal in life. Jaina ethics is not merely only a way of thought but also away of life. It forms the general basis among the basic principles of Jaina philosophy.

The central problem in Jaina ethics is liberation from misery. It finds greater emphasis among the religions of India because of their peculiar doctrine of Karma. Jainism believes that moral effort is sufficient for human progress. It doesn't consider personal God as necessary to fulfil all the desired demand of morality. The necessary is the isolation of the soul from the bondage of Karma. Therefore, in Jainism ethics assumes an over-riding importance over all other aspects of the religious life.

Ethical discipline is considered as the most glorious part and occupied an essential aspect in Jainism. In Jaina ethics, there is no conflict between man's duty to himself and society. It gives more important stress to make an individual a worthy social being, who can live as a responsible person with well-behaved within its environment and outside. To institute the highest good society is the highest good accomplishment of the individual. Man's good conduct to the society is the normal field of ethics.

According to Jainism, the soul has to be evolved to the duty of helping others. This is the relation of man and his goal in life. This ethical doctrine is well graded in Jainism to suit the ability and

environment of an individual. Elaborating the Jaina ethics in great detail and depth on the basis of metaphysical background, it can be viewed that there is the

- self ijiva) and
- the nonself (ajiva);
- there is flow of karmic matter (*asrava*)
- from the nonself into the self, thus causing bondage (*bandha*).
- This flow must be checked (*samvara*) and
- the already collected karmic matter must be shed to attain liberation (*moksa*).

Thus, the formulation of Jaina ethical theory is stranded in Jaina metapysics. The Jaina metaphysical outlook is known as *Anekantavada* or non-absolutism. However, it is to be noticed that Jaina ethics is not only depending on the background of metaphysics but on epistemology also. According to Jainism, the universe is uncreated and real by virtue of its being existential and is, therefore, eternal everlasting, with a beginning and without an end.

The Concept of God in Jainism:

Jainism believes that universe and all its substances or entities are eternal. It has no beginning or end with respect to time. Universe runs own its own accord by its own cosmic laws. All the substances change or modify their forms continuously. Nothing can be destroyed or created in the universe. There is no need of some one to create or manage the affairs of the universe. Hence Jainism does not believe in God as a creator, survivor, and destroyer of the universe.

However Jainism does believe in God, not as a creator, but as a perfect being. When a person destroys all his karmas, he becomes a liberated soul. He lives in a perfect blissful state in Moksha forever. The liberated soul possesses infinite knowledge, infinite vision, infinite power, and infinite bliss. This living being is a God of Jain religion.

Every living being has a potential to become God. Hence Jains do not have one God, but Jain Gods are innumerable and their number is continuously increasing as more living beings attain liberation.

The Concept of Soul in Jainism:

The concept of soul has an enormous influence upon all the religious systems. It has become a curious important philosophical analysis in the history of human thought. According to Jainism, soul is an substantive reality. It is pure consciousness,that is to say, in other words, an embodiment of infinite knowledge, and a totally different kind of substance from matter.

Jainism believes in plurality of soul. It means that every living being has its own individual soul. Not only human beings and animals, even trees, plants, bacteria and microscopic organism have souls. According to Jainism, the differentiating characteristic of a living being is its being a substratum of the faculty of cognition, which is only a manifestation of consciousness. All living beings, whether big or small, has a soul. All souls are equal. Every soul from the lowest to the highest possesses consciousness. The degrees of consciousness may vary according to the obstacles of karma. The lowest souls which inhabit material atoms appear to be lifeless and unconscious, but in fact life and consciousness are present in them though in a dormant form. Purest consciousness is found in the emancipated souls, where there is no shred of karma. All souls are really alike. The degrees of consciousness are due merely to the karmic obstacles" (Sharma, 1987:).

Jainism believes that the soul is absolute and permanent.. The soul has the capability to obtain freedom elevating upwards to liberation through the destruction of its karma. Every soul in its essence and inherent nature possesses four infinities. Theseinfinities are infinite knowledge, infinite intuition, nfinite bliss and infinite power.Under some conditions, these characteristic are obscured by karma. Jainism, with itsexplicit believes that soul is potentially pure in its inherent form. The following arethe qualities of soul :.

(1) The faculty of omniscience (*Kevala-jnana*)

(2) The faculty of absolute undifferentiated cognition (*kevala-darsana*)

(3) The superiority overjoy and grief *(avyababha)*

(4) The possession of complete religious truth *(samyaktva*) and irreproachable moral conduct (*caritra*)

(5) The possession of eternal life *(aksayasthiti)*

(6) Complete formlessness *(amurtatva)*

(7) Complete equality in rank with other *jivas*

(8) Unrestricted energy (*virya*)

According to Jainism, there is infinite number of souls in the universe. The Jainas believe that each body possesses a different soul. It is held that one body can be occupied by more than one soul, but one soul cannot occupy more than one body. The soul is graded into five levels according to which form it takes in its earthly existence. They are:

❖ **Lowest level**: Those souls possess only one sense - 'the sense of touch', are grouped in this level. These include the elements themselves, earth, water, air, and fire and vegetable kingdom.

❖ **Second level:** Those souls of possessing two senses - 'the sense of touch and taste are grouped in this level of soul. These include worms and shell creatures.

❖ **Third level:** Those souls which are having three senses - 'the sense of touch, taste and smell' are put under this level of soul. These include ants, bugs and moths.

❖ **Fourth level:** Those souls which are having four senses - the sense of touch, taste, smell and sight are put under this level. These include wasps, locusts and butterflies.

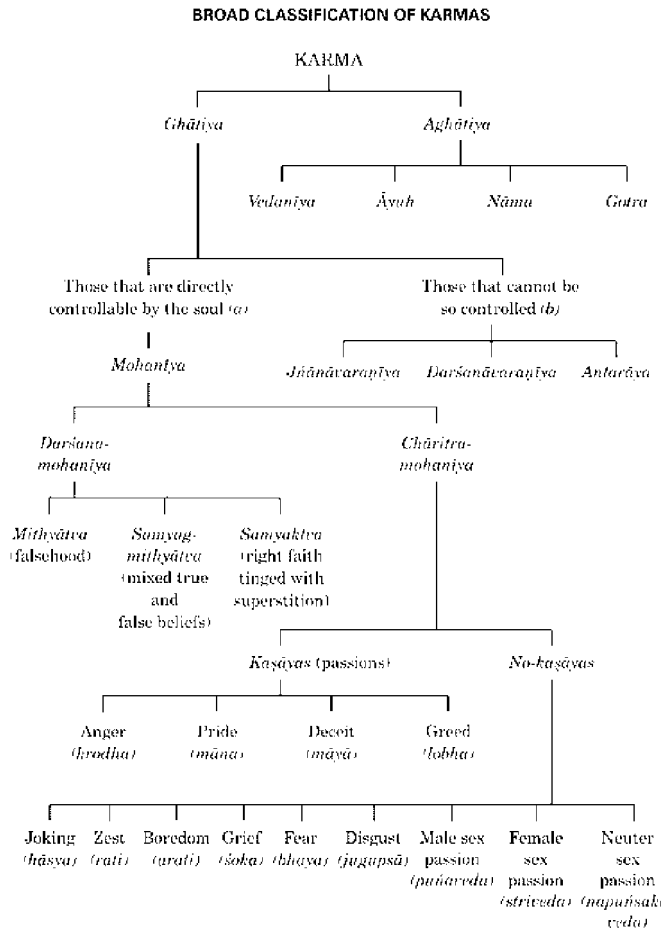
❖ **Fifth level (Highest level):** At the lowest highest level are the souls having all five senses - the sense of touch, taste, smell, sight and hearing. These include four types of creatures - infernal beings, higher animals, human beings and heavenly beings.

The journey of soul from one level of consciousness to another, and from one grade to another, up or down the scale, depends on the inexorable law of Karma.

The Concept of Karma in Jainism:

In Jainism, karma is the basic principle to reach the highest level. Karma is thought of as a kind of pollution, that taints the soul with various colors. Based on its karma, a soul undergoes rebirth and impersonate in various states of existence—like heavens or hells, or as humans or animals.

The Jain theory seeks to explain the karmic process by specifying the various causes of karmic influx and bondage (bandha), placing equal emphasis on deeds themselves, and the intentions behind those deeds. The Jain karmic theory attaches great responsibility to individual actions, and eliminates



Source :wikimedia.org/wikipedia/commons/4/40/Types_of_Karma.JPG

reliance on supposed existence of divine kindness.The Jain doctrine also holds that it is possible for us to both modify our karma, and to obtain release from it, through the austerities and purity of conduct. There are many types of karma. However they are broadly classified into the following eight categories:

- **Mohniya karma:** It generates delusion in the soul in regard to its own true nature, and makes it identify itself with other external substances.
- **Jnana varaniya karma:** It covers the soul's power of perfect knowledge.
- **Darasna varaniya karma:** It covers the soul's power of perfect visions.
- **Antaraya karma:** It obstructs the natural quality or energy of the soul such as charity and will power. This prevents the soul from attaining liberation. It also prevents a living being from doing something good and enjoyable.
- **Vedniya karma:** It obscures the blissful nature of the soul, and thereby produces pleasure and pain.
- **Nama karma:** It obscures the non corporeal existence of the soul, and produces the body with its limitations, qualities, faculties, etc.
- **Gotra karma:** It obscures the soul's characteristics of equanimity, and determines the family, social standing, and personality.
- **Ayu karma:** It determines the span of life in one birth, thus obscuring soul's nature of eternal existence.

While traveling on the path of spiritual progress, a person destroys all eight types of his karmas in the following sequence:

First Mohaniya (delusion), then Jnana varaniya (knowledge), Darasna varaniya (vision), and Antaraya (natural qualities) all three together. At this time, he attains Keval gnan and he is known as Arihant, which is also known as Tirthankara, Jina, Arhat, Kevali, or Nirgantha. Lastly the remaining four karmas namely Vedniya (pleasure and pain of the body), Nama (body), Gotra (social standing), and Ayu (life span) are destroyed. At this time, he attains total liberation and he is known as Siddha.

Thus Jainism believes in the right faith, right knowledge, right conduct, non injury, truthfulness, non stealing, celibacy and non adultery, non acquisition of wealth, amity, appreciation, compassion, equanimity, forgiveness, humility, straightforwardness, purity of mind, control of senses, mercy,

penance, renunciation, greedlessness, chastity, respect for other's view points, etc. In short Jainism has advocated for all the best virtues required for peaceful and happy living for all the living beings and also required for the liberation of the soul from the cycle of birth and death. Jainism has thought of every possible situation in life, has elaborately analyzed them and has guided the followers of all categories towards the right path.

2.6.7 : EDUCATIONAL IMPLICATIONS OF JAINISM

(1) The Jainas contends that a cognition can apprehend an object, only when it apprehends itself. Knowledge like a lamp, illuminates itself as well as an external object.

(2) Valid knowledge is of two kinds, immediate knowledge or perception and mediate or indirect knowledge. Education must lay stress on each of these two with due proportion.

(3) The result of valid knowledge is cessation of ignorance, avoidance of evil, selection of good, and indifference. It is partly distinct and partly non-distinct from valid knowledge. The person who has valid knowledge removes his ignorance, avoids evil, selects good, and **becomes** indifferent on account of knowledge of truth. Attainment of valid knowledge is the aimeducation.

(4) Inference is the another source of valid knowledge. There are two kinds of inference — inference for ourself and inference for others. In inference for ourself a person perceives the reason, remembers the inseparable connection between the reason and the inferable object determined by induction. It should be one of the processes of learning about self and others.

(5) Testimony is the knowledge of objects derived from the words of reliable persons. It is the verbal knowledge through which valid knowledge can be realized. Teachers' expertise is recognized and teachers are expected to be professionally up-dated.

(6) Absolute judgments are possible in Ekanta or one-sided systems. But these are not possible in the Anekanta philosophy of the Jaina. All objects are multiform (Anikatana) according to it. From their many-sided nature, it follows that all Judgments are relative. They are true under certain conditions. They are conditional or hypothetical. No Judgments are absolutely true. This is Syadvada or the doctrine of relativity of Judgment. The Jainas develop their educational system through this cause-effect relationship. The relativistic approach in understanding an object / concept in learning, speaks for radical pedagogy of modern era; it is driven by free thinking and an object is viewed from multiple perspectives.

(7) The soul is actually united with Karma and entangled in boudage. All knowledge, feeling and volition are produced from within by removing the veil of Karma. It speaks for efforts and action in learning.

(8) According to Jaina Philosophy matter is knowable, enjoyable and corporeal. This is friendly to the discipline-oriented curriculum and advocates for empiricism, etc

Question:

Let Us Check Our Progress

1. What are the four noble truths of Buddhism?
2. Why Jainism is called relative pluralism?
3. What are the different sources of knowledge according to Buddhism and Jainism?

2.6.8 : LET US SUM UP:

Jain philosophy attempts to explain the rationale of being and existence, the nature of the Universe and its constituents, the nature of bondage and the means to achieve liberation.. The metaphysics of Jain philosophy deals with the fundamental distinction between the living and non-living beings. The epistemology of Jainism is non-absolutistic and is with the specific logic of syadvada.They are respectively.

- Jainas admit perception, inference and testimony as the sources of knowledge.
- Jainas divide knowledge into two kinds: Pramana and Naya.
- Naya means knowledge of a thing in its relation.
- Pramana means knowledge of a thing as such or as it is.
- Jaina metaphysics holds that all judgments are relative.
- From the epistemological standpoint knowledge is relative in the sense that we can know only partial nature of reality. It is called syadvada.
- From the meaphysical standpoint reality has innumerable characteristics. It is called anekantavada.
- Syadvada is the theory of relativity of knowledge. It is also called sevenfold judgment.
- Jaina ethics is not merely only a way of thought but also away of life.
- Jainism does not believe in God as a creator, survivor, and destroyer of the universe.
- Jainism believes in plurality of soul. It means that every living being has its own individual soul. Not only human beings and animals, even trees, plants, bacteria and microscopic organism have souls
- The Jain karmic theory attaches great responsibility to individual actions, and eliminates reliance on supposed existence of divine kindness.

2.6.9 : SUGGESTED READINGS:

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2.6.10: ASSIGNMENTS:

1. What is Jaina epistemology? Discuss
2. What is Jaina metaphysics? Discuss
3. Explain the concept of syâdvâda.
4. What is anekântavâda? Is there any relation between syâdvâda and anekântavâda? Discuss
5. Briefly discuss the educational implication of Jaina Philosophy
5. Write short notes on:
   (a) Jaina metaphysics
   (b) Jaina epistemology
   (c) Anekântavâda

Unit : 7
ISLAMIC TRADITION

Content Structure:

2.7.1 : Introduction
2.7.2 : Ovjectives
2.7.3 : A Glimpse To Islamic Philosophy
2.7.4 : Aims And Objectives Of Islamic Education
2.7.5 : Organization of Islamic Education And Curriculum
2.7.6 : Instruction, Learning and Teacher's Role In Islamic Education
2.7.7 :Let Us Sum Up
2.7.8 : Suggested Readings
2.7.9 : Assignments.

2.7.1 : INTRODUCTION:

Your understanding about the cultural roots of Indian education will remain perhaps incomplete if you do not get acquaintance with the nature of Islamic education and tradition in this country. V°u, perhaps, learned in your school history textbook that the entire period of the mediaeval India was ruled by various muslim dynasties and thus, Islamic education was patronised by the then rulers, for about seven hundred years. This systems in some modified form is also still catering education for about some thousands of children and young adults in India parallel to the main stream systems. Definitely, Islam, a different religion from those originated earlier in India, historically transmitted in this country by non-Indian people. It is underpinned by a distinct Islamic philosophical thoughts and beliefs which became consequently, the bases not only of the Islamic systems of education in India but also helped creation of a new culture expressed in multiple forms like arts, designs, architecture, languages, literature, culture and ways of life. Eventually, a cultural integration has been effected not only in the populace but also in different fabrics of our ways of life, through Islamization in this Country.

2.7.2 : OBJECTIVES:

After completing this unit you will be able to

- State the Islamic Tradition
- Analysis the Islamic System
- Explain the Educational Contribution of Islamic Tradition

2.7.3 : A GLIMPSE TO ISLAMIC PHILOSOPHY:

You may start your journey to the present discourse just recalling the name of the West Bengal Board of Madrasah Education which is holding five public examinations like High Madrasah, Alim, Fazil, Kamil, and M.M. Examinations and administering Madrasah education in this State and in 2001 about 18,000 students appaered in all of the five examinations. Moreover, the famous Calcutta Madrasah is acting as Centre of Research in Arabic, Persian and Islamic studies under the patronage of this State Government. Similarly, in some other States of India there are Madrasah Boards of Education. All these academic activities are connected with a common thread of thoughts which is Islamic philosophy.

The cardinal points of the Islamic education as well as tradition is based on the Islamic Philosophy which is illuminating thoughts and beliefs of Muhammad (AD 571-632) embodied in the holy book Quran which means "The Reading". Originally written in classical Arabic it tells the followers of this great prophet (Muslims) that each person will be Tried in the Last Judgment, when Allah (one true God) will judge all souls. Those who have followed the will of Allah will be eternally rewarded. Islam is a comprehensive way of life and "... after all, makes it a duty for everyone to seek knowledge and discover facts, and increase the welfare of mankind" (Sardar, 1989, p.25).

Some basic beliefs of the orthodox Islamic religion, according to Ozman & Craver consist of: One God; Sacred ground (All the earth belongs to Allah, so wherever one prays becomes holy ground); Equality before God; A life hereafter; Truthfulness; The sinfulness of adultery; Charity; Duty to animals; etc.

In this connection the religious dutites of Moslems are stated in the *"Five Pillars*" of Islam which govern the total life of its followers.

1. ***Belief: Moslems professes faith as, "I bear witness that there is no God but Allah, and that Muhammad is the prophet of Allah".***
2. ***Prayer: Muhammad required formal prayer five times a day at sunrise, noon, midafternoon, sunset, and nightfall.***
3. ***Fasting: A fast during the month of Ramadan is required for all. During that time one cannot take food or drink between sunrise and sunset.***
4. ***Almsgiving: One is encourgaed to to share goods and money with the poor and to support Moslem schools and mosques.***
5. ***Pilgrimage: Muhammad urged his followers to travel each year the sacred city of Mecca At the very least, one should do this once during his lifetime.***

Like many other religions of the world Islamic religion has also experinced great reform but its cardinal faiths are more or less stable. Let us now advance into undersanding Islamic philosphy of education in the lenses of Mohammad Iqbal, a renowned poet, thinker and philospher of united India. In brief his reflections are presenetd in the next paragraphs.

Khudi (literally, Selfhood or Individuality) is a real and pre-eminently signiifcant enity which is the centre and basis of the entire organization of human life. The negation of Self, or its absorption into the Eternal Self should not be man's moral or religious ideal, he should, instead, drive to retain his infinitely precious Individuality and to strengthen it by cultivating his originality and uniqueness. In the word of Quran, man is held as the "trustee of a free personality which he accepted at his perii" and his unceasing reward consists in his "gradual growth in self-possession, in uniqueness and intensity of his activity as an ego[3]'. The Self or individuality is not a datum but an achievement, the fruit of a constant, strenuous efforts in and against the forces of the external environment as well as the disruptive tendencies within man himself. The life of man 'is a kind of tension caused by the Ego invading the environment and the environment invading the Ego". Through this give-and-take between the individual and his many-sided environment, through establishing as many intensive and fruitful contacts with the surrounding reality as possible, the individual evolves the inner richness of his being. Moreover, life cannot unfold all its possibilities, nor can the individual develop his talent powers, except in an atmospheree of freedom-learning by direct, personal, first hand experience.

Individuality is not divorced from community or culture. Readily equipped with a free personality (trust) and actively in contact with his environment, man sets his journey to unlimited development

which, in its essence is the process of his education through reflective observation as revealed to one's sense perception, man grasp Reality piecemeal, temporal aspects, on the contrary, through intution or Love or direct perception by the heart man apprehends and associate directly with Reality in its wholeness.

Purpose of life is to be a good man. Education aims at developing good characater. The good life must be a life of active effort and struggle, not one of withdrwal or seclusion or slothful ease. Secondly, the good man must learn to apply his intelligence increasingly to the exploitaion of the forces of Nature, thus adding progressively his knowledge and power but it wil be guided and controlled by Love (intution). In order to develop such a good charcater exemplified by sensitiveness and strength- sensiveness to the good of humanity and to ideal values, streangth in carrying one's purposes the appropriate education must inculcate Courgae, Tolerance and Faqr (an inner attitude of detachment and superiority to man's material possession, a kind of intellectual and emotional asceticism which does not turn away man from the world as a source of evil and consumption but uses it for the pursuit of good and worthy end). "In power, it saves him from an attitude of arrogance and self-intoxication; in political subjection, it enbales him to spurn the tempataions, bribes, and snares with which the ruling power tries cynically to corrupt integrity and character of a subject people." (Saiyidain, 1965, 1988). From educational terms the characater of the good man-the true Believer, the Momin. "He is a man who develops all his powers and strengthens individuality with contact with his material and cultural environment. His self-respect gives him courage, his tolerance and respect for the rights and personality of others make him sensitive to the claims which their common humanity makes on him." (Saiyidain, 1965, 1988). Iqbal puts it as : *He is a flashing sword against untruth. And a protecting shield for truth!*

Question:

Let Us Check Our Progress

1. Explain significance of *Pilgrimage* in education.
2. Write at least three characteristics of a Good man from the Islamic point of view.

2.7.4 : AIMS AND OBJECTIVES OF ISLAMIC EDUCATION:

" 'Islamic' in the phrase 'Islamic education' means that education is intimately related to Islam, which God completed and perfected over fourteen centuries ago" (Ould Bah, 1998).

Any concept including 'education' derives its meaning from the linguistic culture in which it emerges. As the Islamic doctrine originated in the Arabia its meaning has bearing on Arabic language. The Arabic language has three terms for education, representing the various dimensions of the educational process as perceived by Islam.

(1) The most widely used word for education in a formal sense is *ta'lftn,* from the root *'alima* (to know, to be aware, to perceive, to learn), which is used to denote knowledge being sought or imparted through instruction and teaching.

(2) *Tarbiyah,* from the root *raba* (to increase, to grow, to rear), implies a state of spiritual and ethical nurturing in accordance with the will of God.

(3) *Ta'dlb,* from the root *aduba* (to be cultured, refined, well-mannered), suggests a person's development of sound social behavior. What is meant by sound requires a deeper understanding of the Islamic conception of the human being what has been spelled out in the preceding sub-unit.

Education in the context of Islam is, then, regarded as a process that involves the complete person, including the rational, spiritual, and social dimensions. The comprehensive and integrated approach to education in Islam is directed toward the "balanced growth of the total personality...through training Man's spirit, intellect, rational self, feelings and bodily senses...such that faith is infused into the whole of his personality" (Syed Muhammad al-Naquib al-Attas in 1979, p. 158). In Islamic educational theory, knowledge is gained in order to actualize and perfect ail dimensions of the human being, hence, education is essential in every life. From the Islamic perspective the highest and most useful model of perfection is the prophet Muhammad, arid the goal of Islamic education is that people be able to live as he lived. While education does prepare humankind for happiness in this life, "its ultimate goal is the abode of permanence and all education points to the permanent world of eternity" (Seyyed Hossein Nasr, 1984, p.7). To ascertain truth by reason alone is restrictive, according to Islam, because spiritual and temporal reality are two sides of the same sphere. Many Muslim educationists argue that favoring reason at the expense of spirituality interferes with balanced growth. Exclusive training of the intellect, for example, is inadequate in developing and refining elements of love, kindness, compassion, and selflessness, which have an altogether spiritual ambiance and can be engaged only by processes of spiritual training.

Mohammad Iqbal, according to Burney, views education as "in its full and correct significant (meaning) must be visualised as the sum total of all the cultural forces which play on the life of the individual and the community".

Education in Islam is twofold: acquiring intellectual knowledge (through the application of reason and logic) and developing spiritual knowledge (intution or Love, derived from divine revelation and spiritual experience), education for all and acquiring knowledge is not intended as an end but as a means to stimulate a more elevated moral and spiritual consciousness, leading to faith and righteous action. Thus, in Islam education means a cultural transformation of man. Then education broadly means living. It is truly humanistic but here man is an active agent, a doer, a shaper of puposes who is not only engaged in the reconstruction of his world but also in the far more significant experiment of creativity unfolding and perfecting his own individuality.

Question:

Let Us Check Our Progress

1. Formulate the chief aims of Islamic education.
2. Mention two kinds of Islamic education.

2.7.5 : ORGANIZATION OF ISLAMIC EDUCATION AND CURRICULUM

Madrassas/madrasah, or Islamic schools, serve an important function in the lives of many Muslims in India even today. No reliable figures exist for the number of madrassas in India, but there are estimated to be several thousand. In West Bengal many, of them are just mosque schools (*maktabs*) where Muslim children are taught to read the Quran and memorize parts of it and are also taught Urdu and the basics of the faith. Several large madrassas also exist, with smaller ones loosely affiliated to them. Some of these have exercised, and continue to exercise, an important influence on Muslims in other countries, especially (but not only) among the South Asian Diaspora.

Islamic education, originally tilted heavily towards religious education, rests upon "transmitted knowledge" (what is termed in Arabic *al-'ulum al-naqliyya),* which consists primarily of the Quranic

sciences, the *hadith* sciences, and jurisprudence *(An fiqh).* In addition to these, curriculum contains "rational sciences" (*al- 'ulum al- 'aqliyya)* or "the sciences of the ancient" (*al- 'ulum al-awa 'it)* usually containing seven main components : logic (*al-mantiq)* which was the foundation of all others; arithmetic *(al-arithmatiqi),* including accounting (*hisab*); geometry (*al-handasa*); astronomy (*al-hay'a*); music (*al- musiki)* which dealt with the theory of tones and their definition by number, etc.); the natural sciences *(al-tabi 'iyyat)* which was concerned with the theory of bodies at rest and in motion - human, animal, plant, mineral and heavenly, important subdivisions of which were medicine *(al-tibb)* and agriculture (*al-falaha*); and, finally metaphysics (*'i/m al-ilahiyyat).*

The *madrasa* was typically funded by a *Waqf* a charitable foundation or trust, a form of institutional organization that was borrowed by the West from the Islamic world towards the end of the eleventh century. *Waqf* rendered a person's property safe from confiscation by the state by freezing it as a public asset but which could be passed on to the founder's descendants. Wealthy men and women thus served as benefactors of *madrasas,* which were sometimes named after them or their families, out of both pious interest and pragmatic concerns. Many had a genuine interest in furthering public education and women played a prominent role in this particular charitable activity. You may think of Sanskrit Education in Tols [In West Bengal, there are about 704 Tols].

Let us now understand evolution of madrasah systems in our country. You must keep in mind that the system originated outside India and it is in vogue for the last fifteen hundred years in all most all countries of the world. The setting up of the Dar-ul-Ulum Madrassa in Deoband in 1865, today the largest traditional madrassa in the world, marked a turning point in the history of madrassa education in India. The founders of the Deoband madrassa made efforts to establish close links with ordinary Muslims in Small towns and villages. Consequently, the social composition of the madrasah student body began undergoing a noticeable change, as many young men from lower class, *ajlaf* families began enrolling in Deoband and the network of Islamic schools that it helped spawn, Further, the free education, board and lodging provided by the madrasah often attracted many poor Muslims who could not afford to study in schools that charged fees. The hope of getting employment as *muezzins,* imams and madrasah teachers, -also attracted many poor Muslims with no other reasonable job prospects. On the other hand, middle class Muslims increasingly began to send their sons to modern, English-medium schools, as these provided avenues for occupations in the new economy. Hostility toward British rule since 1830 when Persian was replaced by English as administrative language in India, took new turn. Inclusion of modem knowledge in the syllabus was viewed with suspicion although people's desire for learning English began to grow. Efforts to introduce modem disciplines met with no success. In 1859, a committee of the leading ulema of Deoband suggested reducing the length of the course of study from ten to six years, which the madrasah agreed to. The rationale given was that by doing so, the students would be able to study in modem schools after they graduated. However, few, if any, actually did so. It is said that Maulana Qasim Nanotawi, the founder of the madrasah, had at one stage thought of introducing the teaching of English in the madrasah so the students could be trained to engage in missionary work among English-speaking people. This suggestion was, however, later ruled out.

As a reaction to Deoband's perceived hostility toward modem subjects, the Nadwat-ul ulema was set up in Lutknow in 1892, to train ulema well versed in both the traditional Islamic as well as modem disciplines. Its Rector, Shibli Nu'mani, sought to introduce the teaching of English, along with modem social and natural sciences, in the syllabus, arguing that the early Muslims had not desisted from taking advantage of the learning of the Greeks and the Iranians; Islam. Nadwa failed

in its mission to develop a new class of ulema, but Shibli's vision remained a powerful source of inspiration for reformers in post-1947 India.

Question:

Let Us Check Our Progress

1. List down different subjects included in the curriculum of madrasah.
2. Distinguish between madrasah and maktabs.
3. Who was Shibli Nu'mani and what did he do?

2.7.6 : INSTRUCTION, LEARNING AND TEACHER'S ROLE IN ISLAMIC EDUCATION

It was usual practice for the madrasah student to learn in sequence: the Quran, *hadith,* Qur'anic sciences embracing exegesis, variant readings of the text, and hadith sciences, which involved the study of the biographies of the hadith transmitters. The student would then proceed to study two "foundational sciences:" *usul al-din,* referring to the principles or sources of religion, and *usul al-fiqh*, the sources, principles, and methodology of jurisprudence. The student would additionally learn the law of the *madhhab* (school of law) he was affiliated with, the points of difference (Ar. *khilaj)* within the same *madhhab* and between the four schools of law, and dialectic (Ar. *jadal),* also called disputation (Ar. *munazara).* Following *dialectic* came the study of *adab* or belles-lettres, including poetry, prosody, and grammar. These subjects in essence constituted the curriculum and meant to be sequentially studied as indicated here - at least as preferred by the educational theorists. In reality, however, the method and course of study tended to be informal and unstructured and were often dependent on the proclivities of the teachers and sometimes of the students.

The **method of teaching** consisted of lecture and dictation; for legal studies, disputation (*munazara*) was important as well. The student was expected to memorize, first of all, the Quran and then as many *hadiths* possible. The teacher, commonly called a *shaykh,* would repeat the *hadiths* three times so as to allow the student to remember it. In the case of *hadith*, dictation *(imla')* was particularly important since the text had to be precisely established. Problems of jurisprudence were also dictated as were linguistic and literary subjects. In relation to the Quran and *hadith*, learning by heart (*talqin*) was the principal method of acquiring knowledge and a retentive memory was, therefore, greatly prized. But, at the same time, the importance of understanding was emphasized and the students were expected to reflect on what they had learned. The saying "learning is a city, one of whose gates is memory and the other understanding" captures this two-pronged approach to learning well. The Arabic term used for "understanding" is diraya and is distinct from, although related to, the activity of memorization and transmission of particularly *hadlths*, a process known in Arabic as *riwaya.* Diraya was decisively the higher "gate" of learning. The related term for jurisprudence *flqh* means essentially "understanding" as well and reflects the importance attached to active comprehension of and engagement with one's subjects in the educational system. The curriculum transaction was teacher centred.

In the study of law, the scholastic method of disputation (*munazara*) prevailed, a pedagogical method that originated quite early in the Islamic milieu. The method of disputation required that the disputant have (a) a comprehensive knowledge of *khilaf,* which referred to the divergent legal opinions of jurisconsults; (b) a thorough acquaintance with *jadal* or dialectic; and acquire skill

through practice in (c) *munazara.* Law students had to have memorized a thorough list as possible of the disputed matters of law and know the answers for them.

Question:

Let Vs Check Our Progress

1. Make list of various Instructional strategies used in madrasah.
2. Describe, in brief, different aspects of method of disputation.

Waves of Reform in Madrasah Education

You must not think that Islamic education is deadwood and stable over ages and places. It has undergone many changes, modifications and reform and till it is undergoing reform. The issue of madrasah reform started about two hundred years ago has crucial implications for Muslim education, the nature of Muslim leadership, and for community agendas. The centrality of controversy lies on inclusion of two types of studies in the curriculum — "religious" *{dint)* knowledge and modem "worldly" *{duniyavi)* learning, Muslim advocates of reform in contemporary India include both trained ulema, products of madrassas, as well as men who have been educated in modem schools. While all of them seem agreed on the importance of the madrassas as institutions geared to preserving and promoting Islamic knowledge and Muslim identity, there is variation in their approaches and extent of the reform they advocate. The rationale for introducing modem disciplines in the madrassas is framed in principally three ways.

1. It is profitable to broaden the Islamic understanding of knowledge as all embracing, covering both *'ibadat* (worship) as well as *mu'amilat* (social relations, worldly pursuits).

2. Introducing modem disciplines is valuable in order for Muslims to prosper in this world, in addition to the next.

3. It is seen as essential in order for the ulema to engage in *tableeq,* or Islamic missionary work.

Therefore, the ulema are no longer to remain restricted to teaching in the madrassas. Rather, they are to play an important role as leaders of the community...

Advocates for reform see the present syllabus used in the Indian madrassas is -— generally stagnant, in many respects and hence no longer in tune with the demands and needs of the times.

Presently the government's desire for the reform and modernization of madrassas to enable Muslims to enter the educational mainstream of the country puts the onus of Muslim educational backwardness largely on the madrassas themselves and to introduce modern subjects in the curriculum.

In India today, various State governments, e.g., West Bengal, Bihar, Orissa, Assam and Uttar Pradesh-have set up Boards of Madrassa Education that frame the syllabus of madrassas affiliated with them, consisting of both traditional Islamic as well as modem subjects. The boards also conduct the examinations, enabling the students to join secular schools after graduation. This has been welcomed by some, but others argue that in this way the religious content of the syllabus has been considerably watered down and that, burdened with the need to learn both religious as well as modem subjects, the students do well in neither. In recent years, the Government of India, as well as some State governments including West Bengal has launched some schemes ostensibly to assist some madrassas, such as providing them paid teachers to teach modem subjects.

These efforts have, however, failed to make much of an impact all over India and only a ripple effect is felt. Some apprehend that governmental interference and control, which they see-and probably

rightly so-as aimed at weakening their Islamic identity by introducing the teaching of government-prescribed books appears motivated by other factors. If promoting Muslim education was indeed a primary concern of the government, it should have paid more attention to setting up more modem schools in Muslim localities... Promotion of alternative education of various kinds for lifelong learning opportunities for all-age groups both male and females are to be ensured. Some critics of this Information Era considers that the learning gates of madrasah should be kept open for ease in entry of flux of contemporary information as well as data as media-driven cultural transformation in man is uncheckable by any means.

Question:

Let Us Check Our Progress

1. Arrange arguments for reforming madrasah curriculum.
2. Do you think governmental control will restrict freedom in Islamic studies in madrasah?— Give at least two reasons.

2.7.7 :LET US SUM UP

In the last spell we have been acquainted with the Islamic philosophy and its educational derivatives very meticulously and of course some problems relating to madrasah education of our country. Herein also the most precious aim of education is human well-being for all with the aid of two categories of knowledge: acquiring intellectual knowledge (through the application of reason and logic) and developing spiritual knowledge (institution or Love). Moreover, its curriculum is open to both theology and sciences- although from these two divisions controversy has originated to give momentum for incorporating necessary changes in curricula and methods of teaching. Finally, we have realised that the Islamic education is advocating equality, brotherhood and international understanding.

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2.7.9 : ASSIGNMENTS

1. Describe critically the philosophical basis of Islamic education.
2. Write a note on modernization of madrasah education

Block-3
Western Schools of Philosophy
Unit -1
Idealism

CONTENT STRUCTURE :

3.1.1 : Introduction
3.1.2 : Objectives
3.1.3 : Concept Definition of Idealism
3.1.4 : Educational Implication of Idealism on Education
3.1.5 : Summing up
3.1.6 : Suggested Readings
3.1.7 : Assignments

3.1.1 : INTRODUCTION:

Philosophy 'Idealism' is an age-old school of thought originating in human nature itself. It has started its career since the down of human civilization and it continues till today in some modified form or the other. Greek philosophers Socrates and Plato were the great Idealist. It has exercised a potent influence on the mind of man through the age.

3.1.2 : OBJECTIVES:

After complited this unit you will be able to:

- State the Philosophical Idea of Idealism
- Explain the Educational contribution of Idealism

3.1.3 : CONCEPT AND DEFINITION OF IDEALISM:

Some concepts and definitions of Idealism are given below:

(a) Etymologically, 'Idealism' may be derived from the words 'idea' and 'ideals'. Idealism has the root from Greek word 'idein' meaning 'to see'. From the epistemological standpoint it is better called idealism, implying thereby that thought or idea has greater validity than the physical objects. From the normative standpoint, idealism attaches greater importance to ideal than facts. Thus, the term Idealism connotes different meanings when places in different contexts. Whatever it may be, in the philosophy of Idealism, both ideas and ideals are its central points.

(b) "Idealism means representation of things in an ideal form, imaginative treatment, system of thought in which the objective of external perception is held to consist of ideas."——The Oxford English Dictionary

(c) "Idealism contends that the material and physical universe known to science is an incomplete expression of reality that is exists but to sub serve, it requires to completement it a higher type of reality, a spiritual universe."——Rusk

(d) "The idealists point out that it is the mind that is central in understanding the world. To them nothing gives a greater sense of reality than the activity of the mind engaged in trying to comprehend its world. For anything to give a greater sense of reality would be a contradiction in terms because to know anything more real than the mind would itself be a conception of the mind."——Brubacher

(e) In India, its origin may be traced to the Vedas, the Upanishads and the Bhagawad Gita a very comprehensive analysis of Idealism. In the West its echo is found in the writings of Plato.

1. Chief Exponents of Idealism:

- The all Vedic Rishis, and the authority of the Upanishads and the Bhagabata Gita.
- Plato –a Greek philosopher (427-347 BC)
- Kant- a German philosopher (1724-1804 AD)
- Hegel-a German philosopher (1770-1831 AD)
- Froebel- a German philosopher (1772-1852 AD)
- William T. Haris-an American philosopher (1825-1890 AD)
- M.K.Gandhi-an Indian statesman (1869-1948)
- S. Dayananda- an Indian philosopher (1825-1883AD)
- R.N.Tagore - an Indian philosopher (1861-1941AD)
- Rishi Aurobindo Ghosh- an Indian philosopher (1872-1950AD)
- Swami Vivekananda-an Indian philosopher (1863-1902AD)

2. Basic Tenets of Idealism:

(a) Ultimate reality is mental and spiritual. The real world of the mind-the realism of ideas and external qualities.

(b) Ideas are more important than objects.

(c) Man is a spiritual organism and is a supreme creation of God.

(d) Higher knowledge is the product of interactive thinking and reasoning-a product of mind.

(e) There is an essential unity in the scheme of things.

(f) Man is a part of this universe and it is the essence of his nature to work towards a rational unity in himself.

(g) Man has an innate capacity to apprehend the moral value of principles.

(h) The test of a good moral principle is its universal validity.

(i) Values are absolute and unchanging.

(j) The ultimate aim of life is to realize the ultimate values-truth, beauty and goodness.

(k) There is divine power behind all things in the world.

3. Forms/Types of Idealism: There are basically three types of Idealism. These are**:**

(a) Subjective Idealism: Famous philosopher of Ireland Bishop Berkeley is the chief exponent of Subjective Idealism. Subjective Idealism contends that things exist and have reality only when they are being perceived and that they have no existence. A part from my mind, your mind or a

Universal mind is perceiving them. It says that individual perceives according to his mind and mental power. That is why phenomenon and appearance of physical world are observed on the basis of perceptibility of mind. In this way, an individual's sensation is so great and comprehensive and as per the sharpness and broadness of one's mental eye. So existence and reality of a thing depends on perceptibility of mind; things do not exist at all beyond the mental eye of the individual.

(b) Phenomenalistic Idealism: The chief exponent of phenomenalistic Idealism is Kant. He says things exist in themselves. He regards them as unknowable and unknown. We can see the phenomental appearance of things throughout own forms and categories.

(c) Objective Idealism: Plato laid much stress on the Subjective Idealism. Hegel also extends his support to Plato in this respect. Biological need is fulfilled easily but cultural needs are to be fulfilled by education. Culture makes a man an individual. Human nature is divine and spiritual. Therefore, education is a complete essential requisite for the child to realize the divinity and spirituality in man.

3.1.4 EDUCATIONAL IMPLICATION OF IDEALISM ON EDUCATION

Idealism and aims of Education:

(a) Exaltation of Personality: Aims of education are influenced by the aims of life. Idealism attaches greater importance to man. If human personality is of supreme value and constitutes the noblest work of God, the aim of education should be the exaltation of self. So, the aim of education should be the development of an integrated personality of the child. Education should enable an individual to become perfect pattern after his own self.

(b) Self-realization: When idealism stress on self, the aim of education is to enable the individual to realize his self. So, self-realisation is the aim of education. Individual should realize his self and should try to establish harmony with his own self and the universal Self i.e. God. According to the Upanishads, this means union of Jibatma to Paramatma. Indian idealists point out that the aim of education is emancipation of soul, i.e. salvation, mukti or nirvana or moksha

(c) Universal Education: Idealism advocates for self-realisation or salvation and education should not be confined to a chosen few or a monopoly of an elite group rather it should be meant for all irrespective of caste, creed, colour, sex or social status. Therefore, the aim of education is universal in character to enable one to go on the path of salvation.

(d) Enrichment of culture and its transmission: Idealists believe in man's superiority to other animals. Man has created his culture at a great cost of time and labour. It is the long-term product of his intelligence and mental power. He must not only preserve the inherited culture but also make his own contribution to the enrichment of culture to enlarge the spiritual realm. At the same time, he should transmit it to the generation to come.

(e) Development of morality: The aim of education should be to develop moral sense in child to enable him to differentiate between right and wrong, good and evil, and beauty and ugliness. Education should enable the child to follow the good and reject the evil, accept the right and disapprove the wrong, appreciate the beauty and avoid the ugliness.

(f) Realisation of higher values: The higher values are truth, beauty and goodness (Satyam, Sivam and Sundaram). These can be attained by spiritual activities-intellectual, aesthetic and moral. Truth, Goodness and Beauty are not different entities. Existence is only one; the same id truth, the

same is Goodness and the same is Beauty. According to individual ability, someone acquires the knowledge of truth, someone realizes goodness and others worship beauty. For example to philosophers, the knowledge of absolute existence is in the form of Truth. To social workers, absolute Truth appears in the form of Goodness. It appears to poets and men of literature as beauty. The poet lives in beauty, thinks beauty, and worship beauty. The poet sees the nature is beautiful but man is even more beautiful, so he attaches more importance to personality of man than to nature.

(g) Sublimation of animal instincts: At the time of birth, the child has certain natural instincts. Education should sublimate the animals' instincts and develop spiritual qualities in students. This is the truest, highest and fullest development of human personality.

(h) Development of complete man: Fullest development of child can only be possible if there is harmonious development of the individual-religious, moral, intellectual, aesthetic, physical, etc. idealists do not give priority to the development of physical health but for pursuing spiritual values. Physical fitness of the body is no doubt inevitable. Can the mind be healthy if body is sick? Sound mind can only be found in a sound body. Therefore, one must have physical ability necessary for making one's spiritual pursuit.

(i) Development of inventive and creative power: The physical world is in a state of change. In order to change and modify the physical environment according to his needs and purposes, man should try to be creative and inventive. Thus, aim of education is to enable the child develop such powers in him to change the physical environment according to his needs.

2. Idealism and Curriculum:

The curriculum according to Idealism is give below:

(a) Plato believes that the highest idea of the attainment of the highest good. Hence, the curriculum should impart eternal values in order to enable the students to attain his highest good. The eternal values are truth, beauty and goodness.

(b) According to Rusk, morality and religion are peculiar to man and differentiate him from animals. So, religion and moral instruction should have a prominent place in school curriculum.

(c) Ross talks two types of activities in curriculum which would be as under:

- Physical Activities-Physical care and Physical skill
- Spiritual Activities- Intellectual, Moral, Religious and Aesthetic

So, the Idealists attach importance to the study of gymnastics, athletics, physiology and hygiene. The Idealists attach greater importance to the study of humanities rather than positive sciences. Therefore, the idealistic curriculum should include subject s like art, history, music, philosophy, literature, moral sciences and religion.

3. Method of teaching and Idealism:

Different idealists advocate different method of teaching. These are:

(a) Socrates advocated **'question-answer'** method. This method may also call '**Socratic Method'**.

(b) Plato, a great disciple of Socrates, advocated '**Inductive and Deductive'** method of teaching.

(c) Rene Descartes suggested '**Simple to Complex'** method in teaching learning process.

(d) Hegel recommended '**Logical method'**

(e) Froebel supports '**Kindergarten**' method.

(f) Pestalozzi suggests '**Self-activity'** method and **'Play-way'** method.

(g) In addition to the methods, other idealists suggest **Lecture method**, **Debate method, Discussion method, Memorization method, Imitation method** etc.

(h) In ancient India, in the ashrams, education was based on **Listing, Thinking** and **Meditation.**

So, the idealists do not favour any specific methodology. They have given lofty aims of education but failed to satisfy the reason so far as methods of teaching are concerned. However, the teacher can follow any method to suit him to direct the student towards the attainment of the goal of life.

4. Role of Teacher and Idealism: The role of a idealistic teacher are:

(a) It assigns a social role to the teacher;

(b) It considers teacher as a spiritual guide for the child;

(c) It accepts teacher as an ideal person;

(d) It regards the teacher as the priest of man's spiritual heritage;

(e) It holds the teacher as a friend, philosopher and guide etc.

5. Discipline and Idealism:

(a) Idealism believes in inner discipline of pupils;

(b) This philosophy advocates cultivation of higher values of life through moral religious instruction to students;

(c) It accepts restraint of freedom to students;

(d) It requires the teacher to present good examples because the child considers teacher to be an ideal person to be emulated by his pupils.

6. Contribution of Idealism to Education:

(a) Idealism has given higher place to mental and spiritual than to physical world. Thus the aim of education is the perfection of the individual.

(b) It requires that the past culture must be given its due place and accordingly education aims at primary the means of acquainting the students with great achievement in literature, art, mathematics and science.

(c) It holds that every human being must receive a chance to be educated and the goal of idealists is universal education.

(d) It gives emphasis on humanities and ideals in life.

(e) It emphasis spiritual side of human life which is the greatest contribution to the field of spiritualism.

(f) It lays stress on higher values of life viz. truth, beauty, goodness, wisdom, honesty, etc.

(g) It sounds a note of urgency of universal education which is inevitable to modern state.

h) It highlights and glorifies the human and personal elements of life.

7. Limitations of Idealism:

(a) Though the aims of education are well laid, it lags behind in educational method.

(b) It is a rigid and dogmatic philosophy with immutable and fixed aims allowing the mental and moral energies to freeze instead of retaining an increasing impetus.

(c) It offers little in the practical fields of developing workable curriculum, organizing educational institutions and developing efficient methods.

(d) Idealistic education pays less attention to modern, industrial, social and economic environment. It is considered to be outmoded in the prevailing scientific world.

(e) Idealism maintains that ideals and morals are eternal and fixed.

(f) It neglects real possibilities, real ends and real moral life.

(g) It is based on mere intellectualism.

8. Conclusion: At last Idealism is the most intellectual and oldest philosophical doctrine. According to the idealists the spiritual nature of man is to be unfolded by means of education. Idealistic education emphasizes the exaltation of personality of self-realization. The idealistic school curriculum should include subjects like Art, History, Philosophy, Literature, Religion and Morality. Idealism believes in inner discipline. The function of the teacher is to guide the child towards his utmost possible perfection. Idealism regards the teacher as the priest of man's spiritual heritage. However, in spite of lofty aims propounded by idealism, it is considered by some as outmoded in modern scientific world.

3.1.5 : LET SUM UP:

The present Unit has attempted to give you the basic meaning and concept of some Westernschools of philosophy. We have seen in detail that the exponents, principles, characteristics, aims,methods of teaching and curriculum, etc. deduced from Idealism, The present Unit, hence, providesyou the necessary perspectives as well as the basic foundations of thoughts on 'Education' in theWestern world. You have been able to understand that the intimate relations of philosophy andeducation, to what extent those relationships are valuable to you as a student of education,. Your present understanding, you may keep in your mind, will help you learn other Units of this Block.

3.1.6 : SUGGESTED READINGS

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3.1.7 : ASSIGNMENTS:

1. What has been the effect of Idealism on educational theory and practice?

2. It is only Idealism that can give a clear vision of a satisfactory goal for education effort.-Comment on the statement

3. The process of education must lead to the deepest spiritual insight and to the highest moral and spiritual conduct.-Discuss

4. Explain the philosophy of Idealism in education and write how you would implement it in Indian schools.

5. Discuss the influence of idealism on the aims of education, curriculum and method of teaching.

6. Idealism shifts the emphasis from the natural or scientific facts of life to the spiritual aspects of human experience. Comment

Unit : 2
NATURALISM

CONTENT STRUCTURE :

3.2.1 : Introduction

3.2.2 : Objectives

3.2.3 : Concept Definition of Naturalism

3.2.4 Educational Implication of Naturalism.

3.2.5 : Summing up

3.2.6: Suggested Readings

3.2.7: Assignments

3.2.1 : INTRODUCTION:

The oldest philosophy in the West is Naturalism. It regards human life as a part of the scheme of nature. This is a type of philosophy to which 'nature is the whole reality'. Matter is supreme. Naturalism relegates man as a spiritual being to the background and disregards the existence of any spiritual potentialities in him. Naturalism is a philosophical doctrine. It is concerned with natural self or real self. It does not believe in spiritualism. According to it the material world is the only real world. This material world is being governed by a system of natural laws. The naturalists have regard only for the actual facts, actual situation and realities. For them nature is everything. 'Return to nature', 'break the chains of society' are its important slogans.

3.2.2 : OBJECTIVES:

After complited this unit you will be able to:

- State the Philosophical Idea of Naturalism.
- Explain the Educational contribution of Naturalism

3.2.3 : CONCEPT AND DEFINITION OF NATURALISM:

(a) "Naturalism is a philosophical position adopted by those who approach philosophy from purely scientific point of view".—Rusk

(b) "Naturalism is a metaphysics which considers nature as the whole of reality. It excludes what is supernatural or other worldly".—Hocking

(c) "Naturalism is a system whose salient characteristic is the exclusion of whatever is spiritual or indeed whatever is transcendental of experience from our philosophy of nature and man".—George Haward Joyce.

(d) "Naturalism is the philosophical generalisation of science, the application of the theories of science to the problems of philosophy". —R.B.Perry

(e) "Naturalism is an attitude rather than a specific system of philosophy". – Prem Nath.

(f) According to **Ward**, "Naturalism is the doctrine which separates nature from God, subordinates spirit to matter and sets up unchangeable laws as supreme".

1. Chief Exponents of Naturalism:

(a) Democritus, a Greek philosopher (About 400BC).

(b) Epicurus, a Greek philosopher (342-270BC).

(c) Francis Bacon, an English philosopher (1561-1626AD).

(d) J.A. Comenius, a Czechoslovakian philosopher (1592-1670AD).

(e) Herbert Spencer, an English philosopher (1820-1903AD).

(f) Thomas Henry Huxley, an English Biologist (1825-1895).

(g) Jean Jacques Rousseau, a Swiss philosopher (1712-1778AD).

2. Fundamental features/tenets of Naturalism:

(a) Nature is the base and essence of naturalistic philosophy. Nature is the final or ultimate reality.

(b) All things come from matter, and are ultimately reduced to it. Matter in different proportion takes different names.

(c) It does not approve the existence of soul or spirit.

(d) Mind is brain functioning. Brain is matter, experience, imagination; reasoning and mental activities are nothing but the functions of brain.

(e) Laws of nature are unchangeable. The entire universe is governed and guided by natural laws. Science unfolds the mysterious of nature. So, scientific knowledge is the real knowledge.

(f) Real knowledge comes through sense organs. In order to maintain effective learning, sensory experience should be performed.

g) Naturalism sanctions utmost freedom to the child. For complete development of child's personality, freedom is an essential characteristic feature.

(h) Naturalism believes in evolution. Everything in nature is subject to change.

(i) Naturalists do not believe in the existence of God.

(j) They do not believe in higher spiritual values or eternal values. Man through his interaction with nature creates values.

(k) It does not give much importance to teacher and discipline.

(l) Individual is the real entity in nature. Society is merely an artificial structure for living together.

(m) It stands for the doctrine, 'follow nature', 'go back to nature' in education.

(n) Nature is the best book. Teacher has an insignificant place in naturalism.

(o) Man is essentially born good. It is the society that makes him bad.

(p) There is no God or any supernatural being.

3. Types/forms of Naturalism: Naturalism exists in different forms. From educational point of view naturalism may be grouped into:

(a) Physical Naturalism: Physical naturalism or material naturalism lays emphasis on physical nature. Man is only one of the objects of physical nature. He is governed by natural laws. The child should learn by himself in the lap of nature. Let him learn by his own experience. Follow nature is the watchword of naturalism.

(b) Biological Naturalism: Man is the highest form of living organism in the process of evolution. Like animals, man is endowed with instincts and impulses. Through education these animal instincts are to be sublimated.

(c) Mechanical Naturalism: This type of naturalism considers man as merely a machine. This machine is run by natural principles. The purpose of education should be to make this machine as capable and efficient as possible.

(d) Psychological Naturalism: Man is endowed with interests, urges, instincts and certain abilities. Instead of repression, these inherent natural qualities are to be developed properly through the right type of education. The school curriculum is to be framed according to the capacity of the child with proper attention to individual differences. The principles of naturalism have given birth to the school of Behaviourism.

3.2.4 : EDUCATIONAL IMPLICATION OF NATURALISM :

1. Aims of education and Naturalism: If we analyse the tenets of different forms of naturalism, we find several aims of education. In short, the aims of education are:

(a) Make the human as machine: Man is a machine and the aim of education is to make the human machine as perfect and efficient as possible. With this end in view the students should learn some healthy habits which are useful in daily life.

(b) Self-preservation: Self-preservation constitutes the highest good in life. So, the aim of education should be to prepare the child for future struggle in life. According to ***Darwinian school of Naturalism***, the aim of education should be to equip the individual for struggle for existence.

(c) Self-expression: The aim of education should be self-expression. According to **P. Nunn,** "Development of individuality is the central aim of education".

(d) Sublimation of the native instincts: According to **McDougall**, the aim of education should be the sublimation of the native instincts and energies of the individual.

(e) Development of child: According to **Rousseau**, the aim of education should be the development of the child in conformity with his nature.

(f) Adjustment with the environment: The education should aim at developing such ability as to achieve adjustment with the environment. The ideal of education is to produce well-adjusted happy being.

(g) Happiness in mankind: The education should aim at establishing happiness in mankind. The education should create such an atmosphere in which children may enjoy their present as well as future happiness.

(h) Citizenship training: Development of qualities of successful citizenship is the aim of education.

(i) Proper utilization and enjoyment of leisure time: Education should train the child the manner how to spent leisure time profitably. Pleasure seeking should be the aim of education.

2. Curriculum and Naturalism: Aim of education determines the nature of the curriculum. The naturalists favour neither rigid nor fixed curriculum rather they support flexible and changeable curriculum. Different naturalists prescribe different curriculum.

(a) Naturalistic curriculum is based upon the psychology of the child. It gives importance to different age and stage of development.

(b) Naturalists advocate teaching of science which deals with nature e.g. Physics, Chemistry, Botany, Zoology along with art, craft and physical activities.

(c) For understanding science subjects better, study of Mathematics and languages are to be recommended.

(d) They give importance to subjects like nature study, Agriculture, Gardening, Craft, Art, Geology, Geography and Astronomy because these are in keeping with the nature of the child. These subjects are to be correlated with the play activities of the child and with the life around him.

(e) Conventional subjects, ideas, importance and knowledge built by sophisticated society should not be give any place in the curriculum.

(f) Naturalists' disfavour bookish education.

(g) For development of sense perception and practical judgement agriculture and carpentry are preferred.

(h) Astronomy and Geography are not to be studied from books but from the nature.

(i) Naturalists prefer the study of history and social studies to other subjects because they are the study of past experiences of the race. Past experiences explain the origin of the present.

(j) As the naturalists lay emphasis on the present life of the child, they want to include such subjects in curriculum which contribute directly to the development of health, vocational life, family life and social life.

(k) Physiology and hygiene are to be included in the curriculum for knowledge of body and health.

(l) For experimental activities, Arithmetic and Geometry are recommended.

(m) Naturalism does not give importance to spiritualism. Thus, there is no place for teaching about God and religion in school.

(n) According to naturalism, children do not like classical music and painting. These subjects should have no place in curriculum in curriculum because these are beyond their comprehension. But there are certain subjects like science, History, Geography, Language, Nature study, etc., which are to be given priority in mathematic curriculum.

(o) Rousseau favoured 'negative education' during childhood. The child should be sub-ordinate to the natural order. When the child is left free to develop his body and senses, it is 'Negative Education'.

3. Methods of Teaching-learning process and Naturalism:

(a) Naturalism regards the child as the supreme centre of educational procedure. Methods of teaching in naturalistic school are guided by the principle of growth, pupil-activity and individualism.

(b) On the basis of the basic principles, teacher is not to impose anything even his teaching on the pupils. The child should be encouraged to discover things by himself.

(c) Child's need and interests should be given top priority in teaching process.

(d) Naturalists prefer self-education or auto-education.

(e) Naturalism employs no direct method of teaching through lecture or textbook.

(f) Emphasis is given laid on learning by doing.

(g) For teaching of science and mathematics, they advocate **Heuristic method** in place of Chalk and talk method.

(h) Prem Nath says, "Play-way is the supreme and valuable technique of teaching". Through play, the child acquires various competences.

(i) In addition to play-way method, naturalism advocates modern method of teaching like Kindergarten Method, Montessori Method, Activity Method, etc.

(j) Naturalism favours open door education or open air schools for natural development child's education.

(k) Naturalists do not support unnatural classroom method under the pattern of fixed timetable.

(l) Coercive or Deductive method is not preferred by naturalists.

(m) They favour lecture method for teaching of language and literature subjects.

(n) Experience, Observation, Learning by doing, Experiment in laboratory etc., are considered best method of teaching-learning process by naturalists.

(o) It favours students' self-government and co-education. Self-government will give direct experience of social life whereas co-education will develop right attitude towards community and family life.

(p) Learning through experience is one of the best method teaching-learning processes in naturalism. Regarding the method of teaching Rousseau advised, "Give your scholar no verbal lessons, he should be taught by experience".

(q) Rousseau encouraged Negative education. When the child is left free to develop his body and senses it is Negative education.

4. Role of Teacher and Naturalism:

(a) The teacher should not interfere in the natural development of the child.

(b) He should not impose ideals or ideas on students.

(c) He is only to help the child in the discovery of truth.

(d) Rousseau (1712-1778) and Fichte (1762-1814) are in favour of non-intervention of the teacher in the education of the child. They think that the child's nature is essentially good, and any

intervention is, therefore, harmful. The teacher should treat the child as a small plant. His duty is like that of a gardener only.

(e) Ross thinks that the teacher has only to set the stage, supply the materials and opportunities provide an ideal environment and create conditions conductive to natural development, and then he is to recede in the background.

5. Limitations of Naturalism:

(a) Naturalism keeps the child in the forefront of the entire process of education. It has sanctioned freedom to the child. It has succeeded in freeing the chid from the tyranny of teachers, rigidity, interference and strict control of society.

(b) It favours child-centric education instead of bookish and teacher-centred education.

(c) Child study movement or importance of study of child psychology has gathered momentum due to the naturalistic thought.

(d) Naturalism emphasizes the all-round development of child's personality in a natural way.

(e) Inflicting punishment on children is disfavoured and discarded by naturalistic education.

(f) Methods of teaching are the best contribution of naturalism. The methods like heuristic method, play-way method, learning by doing, etc. are recommended.

(g) Child-centred and diversified curriculum of naturalism have enriched and contributed a lot to modern education thought and practice.

(h) Open-air school is favourable for natural development which really deserves eulogy in underdeveloped countries.

(i) Residential school system advocated by naturalism has a complete bearing on modern public school system.

(j) It emphasizes practical knowledge than bookish knowledge. Knowledge gained through experiences is, beyond doubt, better than theoretical knowledge.

(k) Naturalistic methods of education are highly psychological as they are base on growth and development of the child, his interests and needs, his aptitudes and activities.

9. Conclusion: In fine, it may be said that naturalism has secured freedom for the child. It has given an impetus to new psychological methods of education. Self-expression, follow nature, auto-education, play-way, paedacentricism, sense-training, self-discipline and learning by doing are some of the main features of modern education.

But the concept of negative education cannot be fully accepted**.** It is said that whenever you carelessly leave the earth to nature, it bears weeds and thistles. Naturalism does not give any lofty ideal of education. For this we need to look at Idealism. Ross has rightly said, "Naturalism needs supplementing and correcting by Idealism because it is only Idealism that can give a clear vision of a satisfactory goal for educative effort.

Question :

Let Us Check Our Progress

Answer in about 60 words

1. State the fundamental Principles of Naturalism.
2. List the major curricular activities of a naturalist curriculum.

3.2.5 : LET SUM UP:

The present Unit has attempted to give you the basic meaning and concept of Westernschools of philosophy - Naturalism. We have seen in detail that the exponents, principles, characteristics, aims,methods of teaching and curriculum, etc. deduced from Naturalism, The present Unit, hence, providesyou the necessary perspectives as well as the basic foundations of thoughts on 'Education' in theWestern world. You have been able to understand that the intimate relations of philosophy andeducation, to what extent those relationships are valuable to you as a student of education,. Your present understanding, you may keep in your mind, will help you learn other Units of this Block.

3.2.6 : SUGGESTED READINGS

1. Sharma, R. N. (2004): *Philosophy and Sociology of Education*, Surajit Publications; KamalaNagar, New Delhi, pp. 37-68.

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3.2.7 : ASSIGNMENTS:

1. What do you mean by Naturalism? What are the basic principles of naturalism?
2. Point out the important contributions of naturalism in the field of modern education.
3. Explain how the philosophy at naturalism has influenced the aim of education, curriculum and method of teaching.

Naturalism ignores what is spiritual. It brings everything on the plane of naturalism. Do you agree with the statement?

Unit : 3
Realism

Content Structure:

3.3.1: Introduction

3.3.2 : Objectives

3.3.3 : Concept of Realism

3.3.4 : Metaphysics of Realism

3.3.5 : Epistemology of Realism

3.3.6 : Axiology of Realism

3.3.7 : Realism and Education:

3.3.8 : Let Sum up

3.3.9: Suggested Readings

3.3.10 : Assignments

3.3.1: INTRODUCTION:

Realism is a philosophy started by the ancient Greek writer, Aristotle. It states that there is a true reality, and things exist whether humans perceive them or not. The external world depends on the perceptions of individuals and as such is a subjective reality.

Realism has probably had the greatest impact on educational philosophy, because it is the foundation of scientific reasoning. Realist educators encourage students to draw their observations and conclusions from the world around them, rather than confining themselves to an analysis of their own ideas. The modern role of a teacher—that of an organizer, systematiser, and promoter of critical thinking—is largely founded on realist principles. Realist educators are objective, believing in a systematic approach to order and classified knowledge, building on previously learned information. They are less likely to encourage their students to seek the truth in literature and ideas, instead encouraging them to seek the truth by testing learned principles on the world around them.

3.3.2 : OBJECTIVES:

After completing this unit you will be able to

- State the Ideas of Realism
- Explain the metaphysical view of Realism
- Discuss the epistemology & axiology of Realism
- Describe the educational implication of Realism

3.3.3 : CONCEPT OF REALISM:

Aristotle, a student of Plato who broke with his mentor's idealist philosophy, is called the father of both Realism and the scientific method. In this metaphysical view, the aim is to understand objective

reality through "the diligent and unsparing scrutiny of all observable data." Aristotle believed that to understand an object, its ultimate form had to be understood, which does not change.

For example, a rose exists whether or not a person is aware of it. A rose can exist in the mind without being physically present, but ultimately, the rose shares properties with all other roses and flowers (its form), although one rose may be red and another peach colored. Aristotle also was the first to teach logic as a formal discipline in order to be able to reason about physical events and aspects. The exercise of rational thought is viewed as the ultimate purpose for humankind.

Realism holds that the only reality is the material world, that study of the outer world is the only reliable way to find truth; the world is an objective phenomenon that our minds must adhere to. We achieve greater and greater knowledge through proper study of the world. In Realism, a person is an empty vessel for knowledge, which can only come from outside of the self, through observation.Realism believes in the world as it is. It is based on the view that reality is what we observe. It believes that truth is what we sense and observe and that goodness is found in the order of the laws of nature.

More generally, realism is any philosophical theory that emphasizes the existence of some kind of things or objects, in contrast to theories that dispense with the things in question in favour of words, ideas, or logical constructions. In particular, the term stands for the theory that there is a reality quite independent of the mind. In this sense, realism is opposed to idealism, the theory that only minds and their contents exist.

Exponents of Realism:

To understand this complex philosophy, one must examine its development beginning from the classical times up to the nineteenth century. Philosophers like Aristotle, Thomas Aquinas, Francis Bacon, John Locke, Alfred North Whitehead, and Betrand Russell have contributed much to realism ideology.

- **Classical Realism:**

The ideas proposed by the father of realism, Aristotle(lived 384-322 BCE) can be classified as classical realism. Classical realism suggests that matter is real and that it is separate from our perceptions. You may not see it, hear it, or feel it, but it nevertheless exists. Education cultivates the capacity to reason, which allows for proper choices. Aristotle asserted that ideas can exist without matter, but matter cannot exist without ideas.

- **Religious realism:**

Religious realism in Christianity was founded by St. Thomas Aquinas (1225–1275). Aquinas presumed that God is pure reasoning, which is the truth of all things. He believed the sole purpose of existence is to reunite the soul with God.

- **Modern realism:**

Modern realism was fashioned by the philosophers Francis Bacon (1561–1626) and John Locke (1632–1704). Locke conjectured that everything we know comes from experience and from reflecting on that experience. We are not born with any innate or preconceived ideas, but rather are a blank slate. Bacon attempted to change the structure of realism from deductive reasoning

to an inductive approach. The inductive approach would reform realists' thinking from a specific idea in the physical world to a more general assumption, ignoring preconceived notions. Bacon identified the origins of our preconceived notions, encouraging humanity to disregard these ideas.

➢ **Contemporary Realism**:

Contemporary realism developed around the twentieth century due to concerns with science and scientific problems of a philosophical nature (Ozmon and Carver, 2008). Two outstanding figures in the twentieth century of contemporary realism were Alfred Norton Whitehead(1861-1947) and Bertrand Russell (1872 – 1970).

The Philosophical views of Realism:

The general rule of the Realism are:

- The real world exists independently of any experience to it.
- Propositions are true only if they can correspond with the known facts, laws, and principles of the objective world external to us. Ontology and metaphysics are still necessary.
- The universe is composed of matter in motion.
- It is the physical world in which we live that makes up reality. We can, on the basis of our experiences recognize certain regularities in it which we generalize about and call laws.
- The vast cosmos rolls on despite man. Matter continues in motion whether man concerns himself with it or not.
- The orderly nature and composition of the world exist independent of consciousness, but which man has come to know a great deal about.

3.3.4 : METAPHYSICS OF REALISM:

There is great variety in the metaphysical beliefs of realists. There is so much variety, in fact, that realists could never be grouped together if they did not have certain common ground. They believe that the universe is composed of matter in motion. It is the physical world in which we live that makes up reality. We can, on the basis of our experiences, recognize certain regularities in it about which we generalize and to which we grant the status of laws.

➢ The vast cosmos rolls on despite man.

➢ It is ordered by natural laws which control the relationships himself with it or not.

➢ It is not unlike a giant machine in which man is both participant and spectator.

➢ This machine not only involves the physical universe, it operates in the moral, social and economic sphere as well.

➢ The realist sees the immutable laws governing man's behaviour as part of the machine; they are natural law.

According to**Stanford Encyclopaedia of Philosophy (2016)** metaphysical realism, the world is as it is independently of how humans or other inquiring agents take it to be. The objects the world contains, together with their properties and the relations they enter into, fix the world's nature and these objects exist independently of our ability to discover they do. Unless this is so, metaphysical

realists argue, none of our beliefs about our world could be objectively true since true beliefs tell us how things are and beliefs are objective when true or false independently of what anyone might think.

Many philosophers believe metaphysical realism is just plain common sense. Others believe it to be a direct implication of modern science, which paints humans as fallible creatures adrift in an inhospitable world not of their making. Nonetheless, metaphysical realism is controversial. Besides the analytic question of what it means to assert that objects exist independently of the mind, metaphysical realism also raises epistemological problems: how can we obtain knowledge of a mind-independent world? There are also prior semantic problems, such as how links are set up between our beliefs and the mind-independent states of affairs they allegedly represent. This is the Representation Problem.

Anti-realists deny the world is mind-independent. Believing the epistemological and semantic problems to be insoluble, they conclude realism must be false. In this entry I review a number of semantic and epistemological challenges to realism all based on the Representation Problem:

I. The Manifestation Argument: the cognitive and linguistic behaviour of an agent provides no evidence that realist mind/world links exist;

II. The Language Acquisition Argument: if such links were to exist language learning would be impossible;

III. The Brain-in-a-Vat Argument: realism entails both that we could be massively deluded ('brains in a vat') and that if we were we could not even form the belief that we were;

IV. The Conceptual Relativity Argument: it is senseless to ask what the world contains independently of how we conceive of it, since the objects that exist depend on the conceptual scheme used to classify them;

V. The Model-Theoretic Argument: realists must either hold that an ideal theory passing every conceivable test could be false or that perfectly determinate terms like 'cat' are massively indeterminate, and both alternatives are absurd.

[Source :https://plato.stanford.edu/entries/realism-sem-challenge/]

Metaphysical realism is the objects, properties and relations the world contains exist independently of our thoughts about them or our perceptions of them. Anti-realists either doubt or deny the existence of the entities the metaphysical realist believes in or else doubt or deny their independence from our conceptions of them.

Metaphysical realism is not the same as scientific realism. That the world's constituents exist mind-independently does not entail that its constituents are as science portrays them. One could adopt an instrumentalist attitude toward the theoretical entities posited by science, continuing to believe that whatever entities the world actually does contain exist independently of our conceptions and perceptions of them.

Of the several, different answers to the problem of GOD, it is likely that everyone is upheld by some member of the family of realists. Of course, there are realists who are atheistic. Those who define mind in terms of matter or physical process, and who think of the cosmos in the thoroughly naturalistic sense, of course have no place for God in there metaphysics.

3.3.5 : EPISTEMOLOGY OF REALISM:

The realists have been deeply concerned with the problems of epistemology. Realists pride themselves on being "hard-nosed" and not being guilty of dealing with intellectual abstractions.

The first position or presentational view of knowledge holds that we know the real object as it exists. This is the positions of the New Realists. When one perceives something, it is the same thing that exists in the "real" world. Thus, mind becomes the relationship between the subject and the object. In this school of thought there can be no major problems of truth since the correspondence theory is ideally applicable. This theory states that a thing is true is as it corresponds to the real world. Since knowledge is by definition correspondence, it must be true. These real entities and relations can be known in part by the human mind as they are in themselves. Experience shows us that all cognition is intentional or relational in character. Some epistemological view of Realism:

- objects have an existence independent of any knowledge of them.
- Realism hold that qualities are a part of the object.
- Realists consider that objects cannot be affected in any way (knowledge) Objects are known directly.
- It believe that objects are universal. Objects are precisely what they appear to be.

With respect to epistemology, realism is the view that we directly perceive the world as it is, or things in themselves, through our senses. The world inside our minds is identical to the world as it is — what we see, feel, taste, and so on, is accurately how the world is.

3.5.6 : AXIOLOGY OF REALISM:

The realist believes in natural laws. Man can know natural law and live the good life by obeying it. All man's experience is rooted in the regularities of the universe or this natural law. In the realm of ethics this natural law is usually referred to as the moral law. These moral laws have the same existential status as the law of gravity in the physical sciences or the economic laws which are supposed to operate in the free market. Every individual has some knowledge of the moral and natural law.

Realist believes that those qualities of our experience, which we prefer or desire, and to which we attach worth, have something about them which makes them preferable or desirable. But according to the second theory, the key to the evaluation is to be found in the interest. Core views of axiology of Realism are:

- Realist are believe that things has an aesthetic value to the extent.
- It harmonious with the beauty of nature.

Religious Value

One aspect of the relation of axiology and metaphysics can be seen by looking again at what has been said about realism and belief in God,. For those who do not believe in God, experience will not be rooted in a Divine Being whom we can worship, reverence, and in whom we can place our trust. Faith and hope will not have validity as religious attitudes because they will have no real object.. But there are also realists who believe in God: and for them many traditional religious values are rooted in realty and therefore are valid.

Concept of Beauty (Aesthetics)

There is a close relation between the refinement of perception and the ability to enjoy aesthetic values. It holds that ultimate values are essentially subjective. In other words, he believes that no goal or object is bad or good in itself. Only the means for acquiring such goals or objects can be judged good or bad insofar as they enable the individual or the group to attain them.

Since the realist place so much value on the natural law and the moral law as found in the behavior or phenomena in nature, it is readily apparent that the realist will find beauty in the orderly behavior of nature. A beautiful art form reflects the logic and order of the universe. Art should attempt to reflect or comment on the order of nature. The more faithfully and art form does this, the more aesthetically pleasing it is.

Realistic Ethics:

For the Realist, the baseline of value is that which is natural, that is, that which is in conformity with nature. Nature is good. One need not look beyond nature to some immaterial ideal for a standard of right and wrong. Rather, goodness will be found by living in harmony with nature. Evil, for the Realist, is a departure from this natural norm either in the direction of excess or defect (i.e., having, or doing, too much or too little of something which is naturally good). It is a breaking of the natural law.

Question :

Let Us Check Our Progress:

1. State the Metaphysical view Realism .....
   .....
2. Discuss the Epistemology of Realism .....
   .....

3.3.7 : REALISM AND EDUCATION:

From this very general philosophical position, the Realist would tend to view the Learner as a sense mechanism, the Teacher as a demonstrator, the Curriculum as the subject matter of the physical world (emphasizing mathematics, science, etc.), the Teaching Method as mastering facts and information,. The realist would favour a school dominated by subjects of the here-and-now world, such as math and science. Students would be taught factual information for mastery. The teacher would impart knowledge of this reality to students or display such reality for observation and study. Classrooms would be highly ordered and disciplined, like nature, and the students would be passive participants in the study of things. Changes in school would be perceived as a natural evolution toward a perfection of order.

For the realist, the world is as it is, and the instruction of schools would be to teach students about the world. Goodness, for the realist, would be found in the laws of nature and the order of the physical world. Truth would be the simple correspondences of observation. The Realist believes in a world of Things or Beings (metaphysics) and in truth as an Observable Fact. Furthermore, ethics is the law of nature or Natural Law and aesthetics is the reflection of Nature.

Aims of Education:

Realists do not believe in general and common aims of education. According to them aims are specific to each individual and his perspectives. And each one has different perspectives. The aim of education should be to teach truth rather than beauty, to understand the present practical life. The purpose of education, according to social realists, is to prepare the practical man of the world.

The modern realists expressed that the education should be conducted on universal basis. Greater stress should be laid upon the observation of nature and the education of science. Neo-realists aim at developing all round development of the objects with the development of their organs.

The realist's primary educational aim is to teach those things and values which will lead to the good life. But for the realist, the good life is equated with one which is in tune with the overarching order of natural law. Thus, the primary aim of education becomes to teach the child the natural and moral law, or at least as much of it as we know, so that his generation may lead the right kind life; one in tune with the laws to the universe. There are, of course, more specific aims which will lead to the goals already stated. For example, realists set the school aside as a special place for the accumulation and preservation of knowledge.

Realists just as other philosophers have expressed the aims of education in various forms.

- According to John Wild the aim of education is fourfold to discern the truth about things as they really are and to extend and integrate such truth as is known to gain such practical knowledge of life in general and of professional functions in particular as can be theoretically grounded and justified and finally to transmit this in a coherent and convincing way both to young and to old throughout the Education should guide the student in discovering and knowing the world around him as this is contained in the school subjects.
- Russell follows the same line of reasoning in his discussion of educational objectives. He too would not object to the school's assisting the child to become a healthy happy and well-adjusted individual. But he insists that the prime goal of all school activities should be the development of intelligence. The well-educated person is one whose mind knows they would as it is. Intelligence is that human function which enables one to acquire knowledge. The school should do all in its power to develop intelligence.
- According to DR.Broudy: Equipping students with knowledge and skill needed to understand and master their physical environment. Enabling the students to adjust themselves to the realities of physical world and to adjust adult approval behavior.

The Curriculum:

- According to humanistic realism, classical literature should be studied but not for studying its form and style but for its content and ideas it contained.
- Sense-realism- attached more importance to the study of natural sciences and contemporary social life. Study of languages is not so significant as the study of natural sciences and contemporary life.
- Neo-realism- gives stress on the subject physics and on humanistic feelings, physics and psychology, sociology, economics, Ethics, Politics, history, Geography, agriculture varied arts, languages and so on, are the main subjects to be studied according to the Neo-realists

Subject matter is the matter of the physical universe- the Real World- taught in such a way as to show the orderliness underlying the universe. The laws of nature, the realist believes, are most readily understood through the subjects of nature, namely the sciences in all their many branches. As we study nature and gather data, we can see the underlying order of the universe. The highest form of this order is found in mathematics. Mathematics is a precise, abstract, symbolic system for describing the laws of the universe. Even in the social sciences we find the realist's conception of the universe shaping the subject matter, for they deal with the mechanical and natural forces which bear on human behaviour. The realist views the curriculum as reducible to knowledge position espoused by E.L. Thorndike that whatever exists must exist in some amount and therefore be measurable.

John Wild, while differing slightly from the foregoing analysis, describes the ordering of the curriculum in such a way as to indicate his philosophical orientation toward realism.

There is certainly a basic core of knowledge that every human person ought to know in order to live a genuinely human life. ….

- First of all the student should learn to use the basic instruments of knowledge, especially his own language. In order to understand it more clearly and objectively, he should gain some knowledge of at least one foreign language as well.
- In addition, he should be taught the essentials of humane logic and elementary mathematics.
- Then he should become acquainted with the methods of physics, chemistry and biology and the basic facts so far revealed by these science.
- In the third place he should study history and the sciences of man.
- Then he should gain some familiarity with the great classics of his own and of world literature and art.

Realists are in agreement that studies should be practical. Students should chose the subject according to his ability from detailed curriculum. They should plan curriculum according to the needs of society. Curriculum should lay emphasis upon these subjects' physics, chemistry, biology, astrology, music and art.

The Methods of Teaching:

The method of the realists involves teaching for the mastery of facts in order to develop an understanding of natural law. This can be done by teaching both the materials and their application. In fact, real knowledge comes only when the organism can organize the data of experience. The realist prefers to use inductive logic, going from the particular facts of sensory experience to the more general laws deducible from these data. These general laws are seen as universal natural law.

When only one response is repeated for one stimulus, it conditioned by that stimulus. Now wherever that situation comes, response will be the same; this is the fact.

For Herbart, education was applied psychology. The five-step method he developed was as follows:

- Preparation: An attempt is made to have the student recall earlier materials to which the new knowledge might be related. The purpose of the lesson is explained and an attempt to interest the learner is made.

- Presentation: The new facts and materials are set forth and explained.
- Association: A definite attempt is made to show similarities and differences and to draw comparisons between the new materials and those already learned and absorbed into the apperceptive mass.
- Generalization: The drawing of inferences from the materials and an attempt to find a general rule, principal, or law.
- Application: In general this meant the working of academic exercises and problems based on both the new information and the relevant related information in the appreciative mass.

In their method, the realist depends on motivation the student. But this is not difficult since many realists view the interests of the learner as fundamental urges toward an understanding of natural law rooted in our common sense. The understanding of natural law comes through the organizing of data through insight. The realist in their method approves anything which involves learning through sensory experience whether it be direct or indirect. Not only are field trips considered valuable, but the realist advocates the use of films, filmstrips, records, television, radio, and any other audio-visual aids which might serve in the place of direct sensory experience when such experience is not readily available. This does not mean that the realist denies the validity of symbolic knowledge. Rather it implies that the symbol has no special existential status but is viewed simply as a means of communicating about, or representing, the real world.

A teacher should always keep in mind-

- Education should proceed from simple to complex and from concrete to abstract.
- Students to be taught to analyze rather than to construct.
- Vernacular to be the medium of instruction.
- Individual's experience and spirit of inquiry is more important than authority.
- No unintelligent cramming. More emphasis on questioning and understanding.
- Re-capitulation is necessary to make the knowledge permanent.
- One subject should be taught at one time.
- No pressure or coercion be brought upon the child.
- The uniformity should be the basic principle in all things.
- Things should be introduced first and then the words.
- The entire knowledge should be gained after experience.
- There should be a co-relation between utility in daily life and education.
- The simple rules should be defined.
- To find out the interest of the child and to teach accordingly.

Concept of Teacher:

The teacher, for the realist, is simply a guide. The real world exists, and the teacher is responsible for introducing the student to it. To do this he uses lectures, demonstrations, and sensory experiences, The teacher does not do this in a random or haphazard way; he must not only introduce the student to nature, but show him the regularities, the "rhythm" of nature so that he may come to understand

natural law. Both the teacher and the student are spectators, but while the student looks at the world through innocent eyes, the teacher must explain it to him, as well as he is able, from his vantage point of increased sophistication. For this reason, the teacher's own biases and personality should be as muted as possible. In order to give the student as much accurate information as quickly and effectively as possible, the realist may advocate the use of teaching machines to remove the teacher's bias from factual presentation. The whole concept to teaching machines is compatible with the picture or reality as a mechanistic universe in which man is simply one of the cogs in the machine.

A teacher should be such that he himself be educated and well versed with the customs of belief and rights and duties of people, and the trends of all ages and places. He must have full mastery of the knowledge of present life. He must guide the student towards the hard realities of life. He is neither pessimist, nor optimist. He must be able to expose children to the problems of life and the world around.

In Realism the teacher is provide guideline to the students. and they give much freedom to the students the teacher must be scholar.

Concept of Discipline:

Discipline is adjustment the individual in the educational program. It is necessary in order to enable the child to adjust himself to his environment and concentrate on his work. Bringing out change in the real world is impossible. The student himself is a part of this world. He has to admit this fact and adjust himself to the world.

A disciplined student is one who does not withdraw from the cruelties, tyrannies, hardships and shortcomings pervading the world. Realism has vehemently opposed withdrawal from life. One has to adjust oneself to this material world.

The student must be disciplined until he has learned to make the proper responses. The school should be organized in such a way that child should learn self-discipline. He should learn to control his feelings and desire and to perform his duties.

Realism and pupil.:

According to the realists the student is must be able to do a lot of things. they suppose the pupil is an organism with a highly developed brain. Pupil must be given freedom to decide about his activities.

Question :

Check Your Progress:

1. Educational implication of the Philosophy of realism

.....

.....

3.3.8 : LET SUM UP:

Realism is a philosophy started by the ancient Greek writer, Aristotle. It states that there is a true reality, and things exist whether humans perceive them or not. The external world depends on the perceptions of individuals and as such is a subjective reality. Realism is any philosophical theory

that emphasizes the existence of some kind of things or objects, in contrast to theories that dispense with the things in question in favour of words, ideas, or logical constructions.

Realists believe that reality exists independent of the human mind. The ultimate reality is the world of physical objects. The focus is on the body/objects. Truth is objective-what can be observed. Aristotle, a student of Plato who broke with his mentor's idealist philosophy, is called the father of both Realism and the scientific method. In this metaphysical view, the aim is to understand objective reality through "the diligent and unsparing scrutiny of all observable data." Aristotle believed that to understand an object, its ultimate form had to be understood, which does not change. For example, a rose exists whether or not a person is aware of it. A rose can exist in the mind without being physically present, but ultimately, the rose shares properties with all other roses and flowers (its form), although one rose may be red and another peach colored. Aristotle also was the first to teach logic as a formal discipline in order to be able to reason about physical events and aspects. The exercise of rational thought is viewed as the ultimate purpose for humankind. The Realist curriculum emphasizes the subject matter of the physical world, particularly science and mathematics. The teacher organizes and presents content systematically within a discipline, demonstrating use of criteria in making decisions. Teaching methods focus on mastery of facts and basic skills through demonstration and recitation. Students must also demonstrate the ability to think critically and scientifically, using observation and experimentation. Curriculum should be scientifically approached, standardized, and distinct-discipline based. Character is developed through training in the rules of conduct.

3.3.9: SUGGESTED READINGS:

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3.3.10 : ASSIGNMENTS:

1. Discuss the Exponent of Realism.
2. Discuss some features of Realism.
3. Explain the Metaphysics and Axiology of Realism in Education.
4. Analyse method of teaching in the light of Realism.
5. Describe the contribution of Realism on Education.

Unit : 4

PRAGMATISM

CONTENT SRTUCTURE

3.4.1: Introduction

3.4.2: Learning objectives

3.4.3: Meaning and Concept of Pragmatism

3.4.4: Chief Exponents of Pragmatism

3.4.5: Development of Pragmatism

3.4.6: Definitions of Pragmatism

3.4.7: Forms of Pragmatism

3.4.8: Pragmatism and Branches of Philosophy

- **3.4.8.1: Metaphysics of Pragmatism**
- **3.4.8.2: Epistemology of Pragmatism**
- **3.4.8.3: Axiology of Pragmatism**

3.4.9: Basic principles of Pragmatism

3.4.10: Educational implications of Pragmatism

3.4.11: Criticism of Pragmatism

3.4.12: Let Us Sum Up

3.4.13: Suggested Readings

3.4.14: Assignment

3.4.1: INTRODUCTION

In the earlier units you have learnt three western philosophic schools those are Idealism, Naturalism and Realism, now we are going to discuss a new western philosophical thought i.e. Pragmatism. Pragmatism is midway between Naturalism and Idealism. It believes that only those theories are true which work in practical situations. It believes that ideals are to be achieved here and now. It takes one thing at a time and tries to solve its problems cooperatively. Its aim is to prepare the child for membership in a modern community. In this Unit we shall understand meaning, basic principles and educational significances of this modern western school of philosophy.

3.4.2: LEARNING OBJECTIVES

After careful study of this Unit you will be able to -

1. Understand the meaning and concept of Pragmatism;
2. Explain the basic assumptions of pragmatic philosophical thought;
3. Discuss the educational significances of pragmatic school of philosophy;
4. Analyse the limitations of pragmatic theory.

3.4.3: MEANING AND CONCEPT OF PRAGMATISM

One of the most important Western philosophical thought is 'Pragmatism'. The root of the word 'Pragmatism' is a Greek word ***'Pragmatikos',*** it means to do, to make, to accomplish. So the use of words likes 'action' or 'practice' or 'activity'. Action gets priority over thought in Pragmatism. According to this philosophy, Experience is at the centre of the universe. Beliefs and ideas are true if they are workable and profitable otherwise false. They don't accept the existence of any other Universe other than this perceptible universe. They don't even accept the existence of soul and god. They beliefs that, soul is the second name of mind and mind is an active element created by matter.

Some habitual ways of thinking and doing in the past worked very well in their own time, but many of them have lost value and necessity for today's world. Pragmatism seeks to examine traditional ways of thinking and doing and, where possible and desirable in today's context, to reconstruct our approach to life more in line with human needs.

Pragmatism is also known as Experimentalism or consequentialism. It is called Experimentalism because Pragmatists believe experiment as the only criterion of Truth. Further, Pragmatists believe that truth are many and they are all in the making. Man researches these areas only by means of his own experiments and experiences. Hence, only those things are true which can be verified by experiments. Pragmatists also hold that whatever was true yesterday, need not be the same today. Under these circumstances, no definite and determined principle of current use can stop the world from moving forward on the path of progress.

The word 'pragmatism' has been derived from the Greek word 'Pragmatikos' which means practicability or utility, thus the philosophy of pragmatism is founded on the principle that first the activity or experiment is done and then on the basis of results, principles or ideas are derived.

Pragmatism is called consequentialism because any human activity is evaluated in terms of its consequences or results. If the activity results in some utility, then it is true otherwise not. It may be noted that the fundamental start of Pragmatism is 'Change'. In this sense no truth is absolute and permanent. According to them the Universe is just like the ever-changing waters of a flowing stream. There is nothing in this world which is static, permanent or eternal. It is always changing from time to time, from place to place and from circumstances to circumstances.

3.4.4: CHIEF EXPONENTS OF PRAGMATISM

The chief exponents of Pragmatism are:

1. Francis Bacon (1561-1626)
2. John Locke (1632-1704)
3. Jean-Jacques Rousseau (1712-1778)
4. Auguste Comte (1798-1857)
5. Charles Darwin (1809-1882)
6. Charles Sanders Peirce (1839-1914)
7. William James (1842-1910)
8. John Dewey (1859-1952)
9. W. H. Kilpatrick (1871-1965).

3.4.5: DEVELOPMENT OF PRAGMATISM

Although pragmatism as a philosophical movement began in the United States of America in the late 1800s, but its roots can be traced back to British, European, and the ancient Greek philosophical traditions.

In this age beginning of pragmatic thoughts was started by Francis **Bacon** (1561–1626) in the 16th century. He told that science is the guide of society. He suggested inductive method that served as the basis for the scientific method.

John Locke investigated the ways in which human beings experience and come to know things, and his examination led him to the view that the individual's mind is Blank (Tabula rasa) at the time of birth. Ideas are not innate, they come from experiences.

Comte the philosopher of 18th century can also be taken as pre-philosopher for this as he had accepted the practical utility of science. Like become he influence the early development of pragmatism by helping thinkers become sensitive to the possibilities of using science to help solve social problems.

However, the growth of this philosophy as an independent philosophy started in 19th century in America.

Charles Senders Pierce (1839–1914) and **William James** (1842–1910) of America are known as demonstrators of this philosophy. According to **Pierce** any belief is not ultimate and its meaning is decided by its practical influence.

William James took pierce's admonition about the practical consequences of ideas seriously, for this lay at the heart of James's theory of truth. Heexplained about the importance of human experience and told that human is criteria of truth for all objects and actions.

After James, **John Dewey** (1859–1952) of America, tookthis philosophy forward. Dewey accepted the will power of humans in social context. After Dewey,his pupil in America, **Kilpatric** promoted this philosophy and **Shiller** promoted it in England. Amongthese the contribution of Dewey is the maximum.

3.4.6: DEFINITIONS OF PRAGMATISM

There are many facets of pragmatism and universe and mankind, which are explained in different ways, but basically there is big similarity in these. On the basis of that similarity, experts have tried to define it.

- According to **J. S. Ross**, - "pragmatism is essentially a humanistic philosophy, maintaining that man creates his own values in the course of activity that reality is still in the making and awaits its part of completion from the future, that to an unascertainable extend our truth are man-made products".
- **James B. Prett** considered that, - "Pragmatism offers us a theory of meaning, a theory of truth of knowledge and a theory of reality".
- **Will Durant** said that, - "Pragmatism is the doctrine that truth is the practical efficiency of an idea".
- In words of **William James**, - "Pragmatism is a temper of mind, an attitude, it is also a theory of the nature of ideals and truth, and finally it is a theory about reality".

Pragmatism is a practical, matter-of-fact way of approaching or assessing situations or of solving problems. Pragmatism believes that 'reality' (the world) is in constant flow. There is nothing in this world which is static, permanent or eternal. If idealism speaks for ideas and ideals, pragmatism is concerned with facts based on experience only.

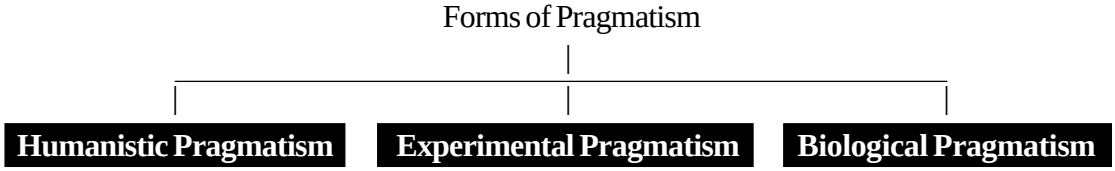
Questions:

Let Us Check Our Progress

1. The word Pragmatism has rooted from Greek word ……...
2. Another name of Pragmatism is …….
3. According to Pragmatism, the only criteria of truth is ……...

3.4.7: FORMS OF PRAGMATISM

Basically, Pragmatism has the following three forms,



1. Humanistic Pragmatism: This form of Pragmatism believes only those things or principles are true which satisfy the needs, requirements, aspirations and objectives of human beings and cater to the welfare of mankind. In other words, whatever fulfils man's purposes and develops his life is only true and real.

2. Experimental Pragmatism: According to this ideology, those things or principles are true which can be verified and proved by experiment. Hence according to these experimental pragmatists, 'whatever can be experimentally verified is true or what works is true'. It gives more importance on personal experiences than Social experiences.

3. Biological Pragmatism: This form of Pragmatism considers that the power or capacity of a human being is valuable and important. This power enables an individual to adjust in the society and with the environment. It also enables him to change his environment according to his needs and requirements. This theory of pragmatism has its roots into Darwin's theory of evolution and natural selection. According to it, there is always struggle for existence seen in the physical and social environment. Each organism tries to adjust with his environment according to his power and strength. In this process weak are decayed and only the fittest survive. They seen knowledge as an instrument for this reason it is popularly known an **Instrumentalism.**

3.4.8: PRAGMATISM AND BRANCHES OF PHILOSOPHY

In the very early section of this paper, we have learnt about various branches of philosophy. To understand any philosophical system, understanding those branches of philosophy (Metaphysics, Epistemology and Logic, Axiology) is very essential. Now we shall try to understand Metaphysics, Epistemology and Axiology of pragmatism for develop our conception over it.

3.4.8.1: Metaphysics of Pragmatism

According to Pragmatists the external world is real. The reality is still in the process of making and not readymade. The world, the universe or the reality is always in a state of change and constant flux. It is an unfinished product. No matter is static, permanent or eternal in the universe. There is enough scope for additions to be made by the inventive and creative powers of human being. The reality is to be made and created and remoulded to suit our needs, purposes or desires. As per their view any object and action cannot be forever useful to humans and hence nothing can be predetermined truth, truth is changeable. Human being is capable of the kind of interaction with the world which changes the direction of the world at certain crucial points. Pragmatists do not believe in spiritual reality. They believe only in practical reality and it emerges out of practical situations. The main issue of pragmatic reality is Human experience.

3.4.8.2: Epistemology of Pragmatism

This branch of philosophy is deals with the problem of knowledge and truth. According to pragmatists knowledge which comes from common experience is true, genuine and worthy of acquisition. The experience in pragmatism is primarily not an affair of knowing; it is first of all, a process of acting, doing and living. Hence Knowledge gained through doing, acting and living is useful. Pragmatists do not attach importance to intuitive knowledge. Thus, pragmatists emphasize knowledge should be come from function and understanding. Knowledge exists in experiences. Experience is the main source of gaining knowledge. The person gains knowledge through experimental activities, things and ideas by acting and reacting with human environment. Experimental method is the best means of acquiring knowledge.

Pragmatists did not separate the knowledge and truth, they believe that knowledge and truth is one and the same thing. They say, "If it is knowledge, it must be true." They only emphasize upon those knowledges who have practical utility in human life and which is gained by the experience.

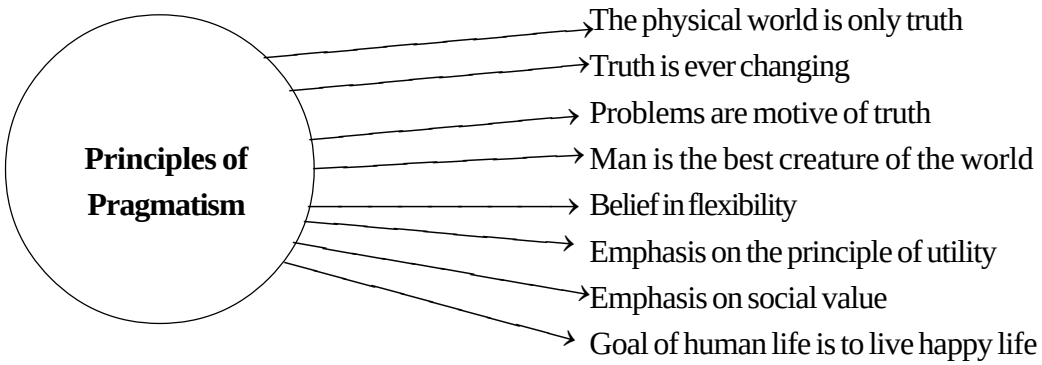
3.4.8.3: Axiology of Pragmatism

Axiology is another branch of philosophical systems which deals with the values. According to pragmatism, the study of values is the subject of experience. Values have existence to the range that they function. Values are effectively function in the individual with the social flow of events. Hence values are subjective and relative and they also change according to time and circumstances. According to them Human experience is the main determinant of values. Values are acquired from society, but the society changes through time and circumstances. As the society become change by time therefore, values cannot be eternal or permanent; they have to change. Hence, pragmatists do not believe in any permanent values.

According to them, values are the outcome of activity and experience that take place in society. It can't be pre-determined. Nothing is true or good forever. Truth is made by human being. Whatever fulfils human being's purpose and develops her or his life is truth.

3.4.9: BASIC PRINCIPLES OF PRAGMATISM

If we want to make a sequence of principles of Metaphysics, Epistemology and Axiology of Pragmatism, then it can be done in the following manner—



1. Thephysical world is only truth

It is Pragmatism which believe that only those objects, acts and thoughts are true, which has physical visibility and practical utilisation in human life. This physical world comes true in that criteria and spiritual world does not come true.

2. Truth is ever changing

According to pragmatism there have no ultimate truth, truth always changes. They believe that truth always changes according to time, place and situation. They also believe that a thing which is true to an individual at a specific time, place and situation, but need not be true to others or anyone else at some other place or time. John Dewey said that, - "Truth is made just as health, wealth and strength are made in the course of experience".

3. Problems are motive of truth

It believes that this world is made due to many types of problems between many elements. Human life is like a laboratory where each individual undertakes various experiments to solve problems he faces, in his growth and development. The success of the experiment is a building of truth. They treated the problem as the motivating force for the search of truth.

4. Man is the best creature of the world

According to pragmatists, the first speciality of man is that it is psychosomatic creature that has the power to think and act. They have the power to understand a problem, ways to solve it and work according to these. The second speciality of man is his Socialisation power. Third Important feature of man is that he can't accept anything as truth unless it passes in the criteria of experience; hence there daily arising new creations.

5. Belief in flexibility

Pragmatists gives emphasize on the principle of flexibility. According to them nothing is fixed and final in the world. So, they faith that the world is changing each and every time, and everything is under a process of transformation. Human life is not beyond this process of change. This flexibility can make our society more advance and develop.

6. Emphasis on the principle of utility

Pragmatic philosophy has highly emphasised on the matter of Utility. It believes that only those idea or things are true or right which have a usefulness to us. In case, it is of no use it is improper, wrong and untrue. In words of William James, "It is true because it is useful".

7. Emphasis on social value

Man is a social being. He is born in society and all his development takes place in society. So, without a society his existence is meaningless. Hence, the pragmatists give more emphasis on social

values than individual values. In terms of social values, they consider freedom, equality, tolerance, responsibility etc.

8. Goal of human life is to live happy life

Pragmatists don't faith in any ultimate goal of human life. Their only expectation is that one can solve their problem by understanding these and adjust to the circumstances. They also expect that it should give such a kind of pace to the world, which is still being built so that it results in such an environment, which can give joy to humankind.

Questions:

Let Us Check Our Progress

1. Pragmatists considered human life like as a …….
2. "Truth is made just as health, wealth and strength are made in the course of experience"- Said by ……...

3.4.10: EDUCATIONAL IMPLICATIONS OF PRAGMATISM

In the present world pragmatism has influenced education extremely. It is a practical and utilitarian philosophy. It makes activity the basis of all teaching and learning. It is activity around which an educational process revolves. The impacts of pragmatic philosophical thought on education are discussed in below, -

1. Pragmatism and Aims of Education

Pragmatists do not believe in predetermined ideals and values. They faith that natural and social environment for humans always keep on changing and in this changed environment, humans daily come across new experiences and builds new ideals and values and hence goal of education cannot be defined.

According to pragmatists, if there can be any definite goal of education, it should be to develop such powers in children so that they can understand their environment and make their ideals based on the experiences gained by that. However, aim of education according to pragmatic philosophy listed as follows,-

(a) To enable the child to personal and social adjustment;

(b) To develop democratic values and ideals in the child;

(c) Growth of inner sight;

(d) To develop the child fully according to his interest, abilities and needs;

(e) Creation of new values;

(f) Development of social efficiency in the child;

(g) To provide educational opportunities to all citizens on equal footing.

2. Pragmatism and Curriculum

Pragmatists have rejected the tendency of traditional approaches to curriculum in which knowledge is separated from experience and is fragmented or compartmentalized. Dewey maintained that the result of fragmentation has usually been to focus primary attention upon subject matter rather than on the contents of the child's own experiences.

Thinking of pragmatists is that experiences and necessities of humans keep on changing and hence the curriculum should also keep on changing. Hence, Pragmatists stressed a useful, flexible, dynamic active and correlated curriculum. In the field of curriculum development, they follow certain principles those are given below, -

(a) Principles of Usefulness;

(b) Principles of experience;

(c) Principles of interest;

(d) Principles of flexibility;

(e) Principles of integration;

(f) Principles of action.

3. Pragmatism and Method of Teaching

Pragmatists does not faith in any fixed method of teaching. According to pragmatists Whatever is to be taught to a child must be correlated with the natural activities of the child. Their main methods of teaching are project method and problem solving methods. Other methods of teaching advocated and followed by the pragmatists are as follows, -

(a) Learning by doing;

(b) Experimental method;

(c) Integrated approach of teaching;

(d) Problem solving method;

(e) Purposive process of learning etc.

In adversity of its drawbacks, pragmatism has immensely contributed to the theory and practice of education. It is not only a practical philosophy but also a progressive one. It conceives education as a dynamic and life-long process. It is a dynamic and adaptable social philosophy. It raises that Learning is true and real only when it comes through doing. It has accelerated the pace of democracy in educational institutions. Its humanistic and social approach in education ensures better citizens.

3.4.11: CRITICISM OF PRAGMATISM

Pragmatism has been severely criticized on various aspects. Some of the criticized assumption of pragmatism has discussed here.

Pragmatists stated that there is no permanent truth. Instead for pragmatists all truth is relative to time and space. And utility is the final criterion of truth. In actual practice pragmatic philosophy is fairly useful, but when its own principles are applied to its own theories, the latter also becomes relative to time and space and thus has only a limited utility. Hence the principle of pragmatism itself becomes only true because it does not accept truth as something permanent.

Pragmatism opposes the spiritual values. But such values are essentially required for peace of mind and completeness of our life. Basically, human values, welfare, happiness and satisfaction cannot be properly achieved without following the spiritual values.

The pragmatic aims of education are vague. According to pragmatists, education is life itself and it is not possible to determine any aims for its continuous change in the pattern of living. This idea is

also unacceptable. Because changes do take place immediately but they take time. Some specific aims of life must be there before the changes occur.

There is no doubt that the child should learn by actually doing things. But the theory has its limitations too. There have many facts known to an individual are acquired from another person. It is almost impossible for one individual to experience every fact known to him.

Pragmatism does not advocate any absolute standards. Education is to help man to create his new standards of life. Eternal values create social cohesion and harmony. Without values, human conduct cannot be evaluated. Pragmatism neglects cherished values of humanity.

Pragmatic teaching methods are also criticized by various philosophers. Pragmatism tries to build knowledge through projects and experimental method. The curriculum may be given on vocational and social efficiency basis, but here liberal studies and cultural subjects is not justified.

Other controversial thing of pragmatism is that it emphasises only the present and future, they neglect the past. But it is actual truth that we can't understand the present without having knowledge of past, simultaneously we cannot say anything for the future unless we know the present. Therefore, the past knowledge cannot be neglected.

Questions:

Let Us Check Our Progress

1. State any two type of teaching methods proposed by pragmatism.
2. According to pragmatism what principles should keep on mind for develop a Curriculum.

3.4.12: LET US SUM UP

It can be summarised that pragmatism is incomplete philosophy as philosophical thought. This thought is the midway between Naturalism and Idealism. It believes that only those theories are true which work in practical situations. To it problem of the moment is more important than that of the future. It believes that ideals are to be achieved here and now. It is focuses on social aspects of humans and does not consider spiritual aspect. It thinks that there cannot be any eternal ideals and values for humans, result of meditation of humans for ages is nothing but a challenge.

As an educational philosophy his has proved to be useful. Its aim is to prepare the child for membership in a modern community. It is against objective information. It believes in the usefulness and practical utility of subjects. According to pragmatists, if there can be any definite goal of education, it should be to develop such powers in children so that they can understand their environment and make their ideals based on the experiences gained by that.

The thoughts of pragmatic philosophy are very essential in today's Education system. Pragmatism makes the child the centre of the educative process. According to them Teaching methods should based on 'learning by doing.' Through this purpose the child is put into real situations so that he may be able to grapple with them and solve the problems that arise from them.

Whatever it has told about defining curriculum as per contemporary circumstances is today acceptable to all. The principles developed for building the curriculum, these are acceptable to all today. Giving importance to social activities in teaching techniques is accepted by all. We are all grateful to pragmatists for their contribution in people's education, compulsory general education, education for the aged, but by not giving a place for culture and spiritual aspects, they themselves

have lost their position. Today we require a philosophy for education, which gives equal importance to development of natural, social and spiritual all three aspects of humans.

3.4.13: SUGGESTED READINGS

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3.4.14: ASSIGNMENT

1. What is pragmatism? Explain the basic features of pragmatic school of thought.
2. Describe the various form of pragmatism.
3. Point out the important contributions of Pragmatism in the field of modern education.

Block-4
Problems of Philosophy
Unit : 1
Problems of Philosophy of Education

CONTENT STRUCTURE :

4.1.1 : Introduction
4.1.2 : Objectives
4.1.3 : The problems of philosophy
4.1.3.1 : Metaphysics
4.1.3.2 : Epistemology
4.1.3.3 : Axiology
4.1.4 : Educational Implications of problems of philosophy
4.1.5 : Let Us Sum Up
4.1.6 : Suggested Readings
4.1.7: Assignments

4.1.1: INTRODUCTION

You have already understood some basic ideas of philosophy and its broad fields of discourse in Block-2 of this Paper. In fact, philosophy embodies some system of thoughts and it provides methods concerning solution of some problems what have puzzled some of the intelligent minds since the dawn of human civilization. All of them in simple term have toiled hard in the activities pertaining to 'search for truth'. If these activities, like the mind-body problem, cannot be answered, one may still be able to build a theory that illuminates the problem itself. Philosophy therefore also has a system-building function, and it moves between explanation and understanding, or between cause and meaning.

The problems, especially in the Western world, are said to be — problems of substance, problems of change, problems of conduct, problems concerning valid knowledge and how to get that, problems concerning good, ultimate, justice, values, etc.

The Problems of Philosophy is a book by Bertrand Russell, attempting to create a brief and accessible guide to the problems of philosophy, Russell focuses on problems he believes will provoke positive and constructive discussion, concentrating on knowledge rather than metaphysics. Butler in his famous book Four Philosophies sees four basic problems of philosophy. In the present unit we will try to understand the basic problems of philosophy and their relevancies.

4.1.2: OBJECTIVES

After going through this Unit you will be able to —

- Understand the meaning of Problems of Philosophy;
- Know the problems under various branches of philosophy;
- Identify the real life problems with their philosophical branch;
- Develop own mind set to explain the metaphysics, epistemology, and axiology.

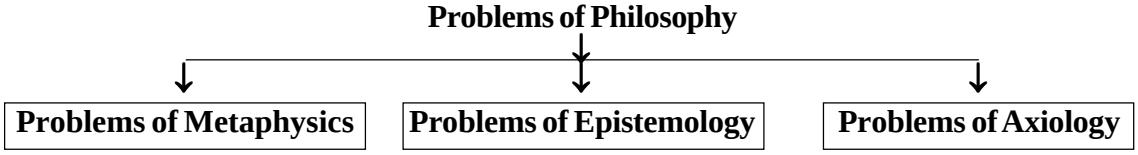
4.1.3 THE PROBLEMS OF PHILOSOPHY

Philosophy always ask some questions: Who we are? Is there a higher existence that determines our existence? What is the relationship between nature and human beings? What is the meaning of life? Are our senses reliable in telling us about the truth of the universe? How do we get to know about the world? What is the relationship between the mind and the body? They further ask these questions: What is happiness? What is virtue? What is the relationship between individuals and the collective? How can we organize a society and an economy that promote the common good? What methods should we employ to find out truth from false statements? Can we ever hope to find out the truth of our existence? Philosophy is reflection of the above questions. Hence, philosophy is the study of general and fundamental problems concerning matters such as existence, knowledge, truth, beauty, law, justice, validity, mind, and language.

Most of the main problems or questions with which philosophy is concerned may be thought of as falling into three main general areas, those are;

a. Problems pertaining to reality,
b. Problems pertaining to knowledge, and
c. Problems pertaining to value.

Philosophy has three basic branches (Metaphysics, Epistemology and Axiology) who deals with the above stated problematic areas. The metaphysics deals with Reality, Epistemology deals with Knowledge and axiology deals with Values. We shall discuss each of those broad areas and note some of the main problems of each of them.



This is the Another way of approaching philosophy for getting an overview of its major problems and corresponding areas of inquiry. This is the systematic approach, for when considered in this way philosophy may reveal itself as having a system and an order of its own. For starting detail discussion, we will go through Metaphysics, then epistemology, and finally we will discuss the axiology.

4.1.3.1: METAPHYSICS

This branch of philosophy deals with the Reality. Let us begin with a discussion of what is meant by the term 'reality' in the philosophical sense. In one very broad sense of the term, 'reality' may mean whatever is. But in this loose sense it seemed that of course **anything is –** a ghost as well as a tree, an object of illusion as well as an object of veridical perception. In the philosophical sense of the term, 'reality' designates what is real, not necessarily or merely as opposed to what is unreal, but rather whatever is real in the sense of being ultimately real.

It is difficult to explicate the meaning of the term 'reality' to anyone who has no familiarity with philosophical works. Its meaning can best be apprehended by examples, that is, by reading philosophical works in which philosophers distinguish, and give grounds for the distinction, between those kinds of things which merely have a surface reality from those which have a more fundamental or underlying reality. But as a start, one might say that in the philosophical sense, the term 'reality' refers to whatever is real rather than whatever is merely apparent. In fact, this problem of appearance versus reality has often been considered as one of the main problems of philosophy.

Let us consider some of the main problems or questions which fall under this division of philosophy.

1. The problem of the external world

Very briefly, this problem is participating by such questions as:

(a) Is there a world (or realm of objects) which exists external to our minds?

(b) are there any good reasons for believing that such a world exists?

Sometimes it seems that, why on earth would anyone worry about questions like these? Of course, such a world exists. We meeting it every day of our lives. How can we possibly doubt its reality?"

In response of this curiosity we can only say: Some philosophers have found reasons for taking these questions seriously. And many have provided arguments which attempt to prove either that no such world exists or if it does, we have no conclusive evidence for taking that it does. Others have attempted to support our common sensical belief that such a world does exist.

2. The problem of the self (or mind, or soul)

The main questions here are:

(a) Does the self exist in any real, substantial way, as a unitary, continuous entity?

(b) If so, is it a special mental, non-material substance?

(c) what I call myself identical with my body or some part of my body?

Most of us think of ourselves as having a substantial (although not material) reality. That is, each of us thinks of his/her self as a unitary nature, having a duration through time. Are there any good reasons for these beliefs? Perhaps there have no clearance about those questions. Some philosophers suggest there is no such thing as a self, while others consider a self to be a collection of experiences, memories and personality traits.

3. The problem of freedom versus determinism.

The main problems of this section are:

(a) Are human beings genuinely free agents?

(b) Can they freely choose among alternatives?

(c) Are their choices and actions determined? If is, then

(d) what is meant here by 'determined'?

This type of problematic question is really very difficult to answer. No responses will be attempted at this point, although it may be necessary to indicate what some of them are. We see the big questions, but some such smaller questions are included within the scope of each big one.

4. The problem of immortality or survival after death

The main questions here are:

(a) Does the human self continue to exist after the death of the body? If so,

(b) Does it continue to exist forever? (Is it immortal?)

This is very difficult to answer it. Consciousness after death is a common theme in society and culture in the context of life after death. Scientific research has established that the mind and consciousness are closely connected with the physiological functioning of the brain, the cessation of which defines brain death.

5. The problem of a God (or Gods)

Here we are concerned with such questions as:

(a) Is there any being whose existence transcends the natural universe-an eternal, divine being?

(b) Is there even more than one god? If so,

(c) what is the nature of this being?

(d) Is it infinite or finite?

(e) Is it all-powerful?

(f) Is it all knowing subject?

(g) Is this Supremely good?

The most crucial queries of metaphysics is the existence and nature of God. Of course, it is radically decisive to believe or not to believe in the existence of God; for many, not to believe in God is extremely forbidding. It is important however to understand something of the nature of the reality or object we signify when we use the word "God" as well as to believe concerning His existence.

Commonly we have placed too much stress on a formal or nominal answer to the question concerning the existence of God and have not been sufficiently concerned about the definition of that ultimate reality we may call God. It is comparatively simple, particularly under propitious circumstances, to say, "Yes, I believe in God." It is quite another matter, however, to say what we mean by God. For in defining our conception of God, we may easily describe something that might more accurately be called by another name. And also, in denying the existence of God, we may not be disbelieving fundamentally so much as we may be denying the truth of an assumed conception of God which is inadequate and lacks authenticity.

Many philosophers have supported that such a being exists. Some philosophers have tried to prove that such a being must exist in order to explain such things as how the universe came into being. Others have examined these arguments and found them to be defective.

6. The problem of evil.

By many conceptions, God is held to be (among other things) omnipotent (all-powerful) and supremely good. But there is much evil in the world. This leads to a annoy problem:

(a) Is the existence of evil in the world compatible with the existence of an all powerful and supremely benevolent God?

(b) If so, then how it is possible?

There are also many discussions of evil and associated problems in other philosophical fields, such as secular ethics, and evolutionary ethics. The problem of evil is often formulated in two forms: the logical problem of evil and the evidential problem of evil. The logical form of the argument tries to show a logical impossibility in the coexistence of God and evil, while the evidential form tries to show that given the evil in the world, it is improbable that there is an omnipotent, omniscient, and wholly good God. Still now no strong evidences were founded about this matter.

7. The problem of Number

A further consideration in metaphysics has to do with number. On the surface, questions of number seem to be so elementary as to make us wonder at their inclusion within the scope of philosophy; but even the most elementary number considerations are not easy, and furthermore they are involved significantly in the most fundamental problems. The most common number questions are as following:

(a) How many substances comprise reality?

(b) ls reality one?

(c) Is it two? Or,

(d) Is it many?

The belief that reality is one is termed monism. And since it is quantity that is emphasized by the term, it is important to note that there can be a variety of monisms. In terms of dualism, reality is two in number. To believe in pluralism is to believe in many different things as being real. Many honest and sincere thinkers say that they are unable to think at all the many factors and structures of reality as being comprised at bottom of one single substance. Such people are pluralists.

So, in comparison of various philosophical believes we can see there have many differences, many controversies about a static numerical discussion of reality.

The preceding problems fall into three main categories: first, problems pertaining to the natural world in general, second, problems pertaining to human beings, and third, problems pertaining to a being beyond the natural universe. Thus, we may distinguish various sub-categories of metaphysics. There are many ways in which this might be done. A rough way of distinguishing them might be:

- General metaphysics (or ontology),
- Philosophical anthropology, and
- Philosophy of religion.

Ontology is concerned with broad questions such as," What kinds of things are real? Is there a real material world?". Philosophical anthropology deals with issues having to do with the nature of human selves. Philosophy of religion (or philosophical theology) has to do with problems about the existence and nature of a god or gods.

4.1.3.2: EPISTEMOLOGY

The second important branch of philosophy is Epistemology. This branch basically deals with Knowledge. Let us turn now to a consideration of what is meant by the term 'knowledge' in the philosophical sense. The philosophical sense of the term has its roots in the ordinary sense of the term but is a refinement of it. We commonly contrast knowledge with ignorance. And we commonly think of knowledge a possessing some characteristics, whatever they may be, which are lacking mere opinion or belief. Philosophers accept and urge upon these distinctions. However, with regard to the province of knowledge, as opposed to belief, they also ask further questions and make further distinctions. Some of these are: knowledge which is absolutely certain as Opposed to probable knowledge; knowledge which is significant and informative as opposed to knowledge which is trivial. All matters about knowledge is the subject of Epistemology. Let us consider some of the main epistemological problems.

1. The problem of the criterion of knowledge

The main questions under this section are:

(a) What constitutes genuine knowledge?

(b) What is the criterion for knowledge?

In the field of epistemology, the **problem of the criterion** is an issue regarding the starting point of knowledge. American philosopher Roderick Chisholm in his *Theory of Knowledge* details the problem of the criterion of knowledge. But there has no static direction for accurate criteria of knowledge.

2. The problem of the possibility of knowledge.

Once we have defined what genuine knowledge is, then the question arises:

(a) Is any genuine knowledge attainable?

(b) Is everything we claim to know merely an opinion or belief? If so,

(c) What are the limits, within which such knowledge is possible?

Philosophers raise about the possibility of knowledge are not all to be settled by discovering what knowledge is. They need to be severally examined; and this is the main concern of what is called the theory of knowledge.

3. The problem of the sources of knowledge

If we claim to have knowledge of reality (even within limits), then the question may be raised:

(a) What are the sources or origins of such knowledge?

(b) How does it arise?

(c) Where does it come from?

Philosophers have traditionally maintained that knowledge comes from different sources. Almost everything that we know originates from four basic sources:

- **Senses**
- **Authority**
- **Reason**
- **Intuition**

But there have many problems among the sources of knowledge. For example, the problem with reasoning is that deduction (the most certain form of reasoning) can never teach us anything new because all the information is there in the facts at the start, while induction (the thing that can give us what seems like new knowledge) can't ever give us anything certain, only things that are *likely* to be the case. On the other hand, there have problem with intuition, as most of our intuitions are wrong and they need careful double checking before they are trusted.

4. The problem of the grounds of knowledge

Let us suppose that we claim to have genuine knowledge and that we have indicated its sources, then an even more important question must be raised:

(a) What are the grounds for our claims to have knowledge?

(b) How can we justify our knowledge claims?

Knowledge requires having good grounds, reasons or evidence for what is known. The ground of knowledge are the grounds of action. If we want to consider the knowledge and action, we must have to fine their ground.

5. The problem of the right to believe

It is an obvious fact that we all hold many beliefs, some of which may be items of knowledge. The main question which arises with regard to belief is:

(a) When do we have a right to believe something?

The right or ethics of belief refers to a cluster of questions at the intersection of epistemology. The central question in the debate is whether there are norms of some sort governing our habits of belief-formation, belief-maintenance, and belief-relinquishment. It can always morally wrong (or epistemically irrational, or practically imprudent) to hold a belief on insufficient evidence. It also can always morally right (or epistemically rational, or practically prudent) to believe on the basis of sufficient evidence, or to withhold belief in the perceived absence of it.

In answer to such questions of epistemology, (especially numbers 3 and 4 no questions) two main movements have arisen which hold competing and conflicting views. These are:

- **Empiricism:** All of our knowledge of the world comes to us via sensory experience and must be justified by appealing to such experience. The only "knowledge" we have which requires no such empirical justification is purely verbal and hence trivial and uninformative, for example, 'Uncles are males'.
- **Rationalism:** We can have some genuine knowledge of the world which can be justified without appealing to experience. Such knowledge can be justified by thinking as well as by our understanding of language. Such knowledge is not trivial or uninformative, but is significant.

Since much of our knowledge is found in the sciences, some or a of the preceding questions can be formulated with respect to science, along with any other related issues. These constitute the subject matter of a subdivision of epistemology known as philosophy of science.

4.1.3.3: AXIOLOGY

The third and last great field of philosophy to be considered is axiology. Axiology, is taken from the Greek word "Axia", which means "value", "worthiness", it is a theory of value. The term 'value' in philosophy also has its roots in the ordinary sense of the term.

However, philosophers often make further distinctions and refinements by asking such questions as:

- Are any values more ultimate than others (the latter being merely apparent or on-the-surface)?
- Are any values of greater importance to human life than others?
- If so, what are they?

Though it has roots in Plato. Aristotle, St. Thomas, and Spinoza, axiology, the theory of value, is a comparatively young child in the family of philosophy. There are, of course, different theories of value; and there are different types of value as well. Naturally, the different kinds of value are numerous. Those receiving more direct attention so far from philosophers are he **ethical, aesthetic, religious, and social values**. Some others are the economic, political, educational. utilitarian, recreational, and health values. Now we will discuss the problems of values through the ethical, aesthetic, religious and social values.

i. Problems of Ethical Value

Ethics, the theory of moral good, is one of the oldest fields in philosophy. It is at least possible to consider ethical values as being of two kinds, immediate and ultimate. Among the chief problems of ethics are the following:

(a) What is the good?

(b) what is the good life?

(c) what is man's highest good?

(d) How one should behave?

(e) What is right?

(f) What is morally wrong?

Ethics evaluates human habits, character and voluntary determination and their propriety. If ethical theories are to be useful in practice, they need to affect the way human beings behave. Some philosophers think that ethics does do this. They argue that if a person realises that it would be morally good to do something then it would be irrational for that person not to do it.But human beings often behave irrationally - they follow their 'gut instinct' even when their head suggests a different course of action.

Indeed more and more people think that for many ethical issues there isn't a single right answer-just a set of principles that can be applied to particular cases to give those involved some clear choices.

ii. Problems of Aesthetic Value

Aesthetic values are a bit harder to discern. This philosophical discipline deals with conceptual problems arising out of the critical examination of art and the aesthetic. Aesthetic values broadly deal with the aesthetics of nature (Budd 1996, Carlson 2000) and gardens (Ross 1998), and with the aesthetic appreciation of objects and activities in everyday life (Dewey 1934). The main problematic issues of the aesthetic values are as follows:

(a) What is beauty?

(b) Do the arts provide knowledge?

(c) What is the importance of art in human life?

(d) Is there a special kind of aesthetic experience or aesthetic perception?

One way in which we value things is by the rather subtle and often unnoticed feeling tones they somehow evoke in us. A beautiful sunset may exalt us or fill us with awe, or we may trace-patterns of colour in it which simply interest or attract us. These are values which may not have received general attention; but any attempt at full living will probably involve the development of the ability to discern them and aid in the achievement of that creative attitude which will control experience in such a way as to realize as many of the desired aesthetic values as is possible.

iii. Problems of Religious Value

Our religious values are likely to depend on our metaphysics, with the notable exception that religious experience may become a medium of revelation which will affect our metaphysics. The values to be shared in religious experience are more easily understood by most of us than aesthetic values, though they may be no more easily experienced. Our living has been more habitually religious than artistic, and therefore we have at least a conceptual basis for thinking of religious values. The basic questions arise from religious value are:

(a) What type of religious values are right?

(b) How can prove the Religious values?

(c) What are the relevancies of religious values?

Generally, we may not see the same values in religious experience if we do not believe in God that we will if we do believe in Him. Numerous religions have emerged throughout history. There differences in the views of value do arise, however, among different religions, different cultures, and different philosophies. For example, in Hinduism, eating beef is not allowed, whereas in Islam, eating beef is allowed, but eating pork is not. In another example, when Communists talk about peace, they mean something quite different from what that term means in the free world. In this way, when standards for value judgment apply only to a limited sphere, we call them "relative standards." Therefore, what type of religious values we should accept? It is becoming very conflict matter in today's world.

iv. Problems of Social Value

Each society has its own set of values. All the individuals should adopt those values. Most of us recognize, at least in theory, that individual man cannot live in isolation but must be related, to society. The area of this relationship is the realm in which social values are, or are not, realized. Each of us, even the hermit or the recluse, sustains a certain absolute minimum relationship-we are born of society and because of society we earn a living or live by charity-but not many people get over on to the positive side of value realization in the social realm. We do not discern wisely what is to be gained, nor do we know how to engage in social efforts which are rewarding. The main problems of this section are:

(a) What are the social values?

(b) Man can live without that?

(c) Which form of society is best?

Without assuming a particular theory of social value, it may be said that in being effectively related to society the individual is within the normal context of human life. Being a man, and having all the hungers and capabilities of man, the normal medium in which his living must go on is human society. Even if an individual has an abnormal desire to be rid of society, he cannot be so isolated, apart from death. And if any of us is to stand up to life and make the very best of it, we must embrace fully all of 'the obligations and opportunities involved in being a friend and neighbour to other individuals; we must also accept those duties involved in being a responsible participant in the common processes of community life, ranging from the local to the global in scope. This is the way to certain rewards, some individual in their return, others commonly possessed by all, which may properly be termed social values.

4.1.4 EDUCATIONAL IMPLICATIONS OF PROBLEMS OF PHILOSOPHY

We have discussed various philosophical problems associate with metaphysics, epistemology and axiology. Now we are going to discuss their educational significances, which may help you to realise the necessity of this topic.

Metaphysical problems and Education

Metaphysics is the branch of philosophy that considers the physical universe and the nature of ultimate reality. It asks questions like, What is real? What is man? What is the origin of the world? What is beyond the stars?

Such questions of metaphysics help to understand some educational questions or problems, like,

(a) What issues are related to nature, existence, or being?

(b) How might your view determine your classroom management?

(c) What is the nature and origin of the cosmos or universe?

(d) Is the world and universe orderly or is it marked by chaos?

(e) What would one or the other mean for a classroom?

This has a close bearing upon the aims and ideals of education the metaphysical questions provide the educationists the proper perspective for devising aims and ideals of education. The concept of self is the basis of the development of character, the central aim of education. Know thyself and be thyself is the universally acknowledge aim of education. Moral and religious education is based upon the metaphysical concept of God. It shows that our explanation of the ultimate reality of the total reality, call it God or anything else, has important bearing upon education particularly it aims and ideals and therefore its means and plans.

Your consideration of reality as an external creation or an internal construct can influence your metaphysical beliefs and perspectives and your education. Regardless of your definition of reality, the exploration and categorization of the physical universe form the foundation of several school subjects.

Epistemological problems and Education

Epistemology is directly related with knowledge, its sources, nature, validity, scope, origin etc. It asks the questions, 'What is true?' and 'How do we know?' What are the sources of knowledge? etc.

The study of epistemological problems helps in answering the following educational questions in a fruitful manner.

(a) What are the goals of education?

(b) What should be content of education or curriculum?

(c) How is the content justified and validated?

(d) What are the approaches in transacting the content material and to realize the goals of education?

(e) What are the values that need to be acquired?

(f) What is their nature and sources?

(g) How can they be acquired?

These questions are basically epistemological and answers to these questions may vary according to one's philosophical perspective. Fundamental to the realization of educational objectives is imparting and acquisition of knowledge, prior to this process requires one to have an insight into the

nature of knowledge in its different forms and structure, the sources of knowledge and the validation of knowledge itself. The study of epistemology helps in eliminating non-essential things and including essentials of curriculum content, which includes different forms of knowledge, fixing the priorities for transmitting them.

Epistemology is the branch of philosophy that considers how people come to learn what they know. It refers to the nature and origin of knowledge and truth. Epistemology proposes that there are four main bases of knowledge: divine revelation, experience, logic and reason, and intuition. These influence how teaching, learning, and understanding come about in the classroom.

Axiological problems and Education

Axiology is the branch of philosophy that deals with the problem of value. It posses the question- What is good? What should man prefer? What are the fundamental values? What is beauty? What is art? What is really desirable? Etc. Every moment of our lives is up with valuing. Without discussing these fundamental problems regarding values, we cannot solve many problems concerning values in our everyday life.

Proper understanding about those questions also helps to solve the education problems like,

(a) Is morality defined by our actions?

(b) What are the characteristics of a good person?

(c) What values should be taught in character education?

(d) Is it ever right to take something that does not belong to you?

It is impossible for education not to imply value, both explicit or implicitly. In this case, however axiology's relationship to education is significant. Indeed, education is itself a value and the value is the most important determiner of success in education, more than one's metaphysical or epistemological beliefs and practices. Those individuals and cultures that value education usually is successful in school, whereas those that do not value education usually are not successful.

If a teacher is not cognizant of the values, he is promoting he can encourage the wrong values and consequently harm the development of impressionable youngsters. Teaching is an art and for a born teacher has an aesthetic value as he enjoys teaching and continues bubbling with enthusiasm. His creativity and ingenuity can create atmosphere of good values. There is a stimulating influence of aesthetic values on the perception and intensification of other of values.

Questions:

Let Us Check Our Progress

1. Questions related to reality known as the problems of …….....
2. value related questions are the problems of …….....
3. What constitutes genuine knowledge? It is the problem of …….....

4.1.5: LET US SUM UP

Before leaving this discussion of the problems of philosophy, it may be well to name again the three main branches of philosophy which we have discussed and restate in one concise question the respective problem with which each deal.

We have discussed Metaphysics as the branch of philosophy which deals with reality. The basic questions of this branch are like- What kinds of things exist? What is spirit? or soul? or matter? space? etc.

We explained epistemology as the second important branch of philosophy, which deals with knowledge. We have discussed the basic questions or problems of this section, like- What constitutes genuine knowledge? What are the sources or origins of such knowledge? Where does it come from? etc.

Here we have also discussed another important branch of philosophy i.e. Axiology. It is the study of values. In general value related questions are - What is the good? What is morally wrong? What is beauty? Which form of society is best? etc.

Not only those, there are many other problems with which philosophy is concerned. We have tried to indicate what some of the main ones are. We have tried to focus on those which almost everyone is interested in. Having proper knowledge about those problematic questions of philosophy is very essential for teachers, learners and educational administrators. We hope that you will enjoy and profit from the study of these exciting and important problematic areas of philosophy.

4.1.6: SUGGESTED READINGS

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4.1.7: ASSIGNMENT:

1. What do you mean the term 'problems of philosophy'?
2. Critically evaluate the Axiological problems.
3. Give details about the problems related to knowledge or epistemology.
4. Explain the usefulness to study about the problems of philosophy

Block-5
Western Philosophers
Unit -1
J.J. Rousseau & J. Dewey

CONTENT STRUCTURE :

5.1.1 : Introduction

5.1.2 : Objectives

5.1.3 : J. J. Rousseau

5.1.4 : J. Dewey

5.1.5 : Summing up

5.1.6 : Suggested Readings

5.1.7 : Assignments

5.1.1 : INTRODUCTION

Philosophy assists the educator in formulating beliefs, arguments, assumptions and judgmentsconcerning learning and teaching, character and intellect, subject matter and skill, desirable ends andappropriate means of schooling. A close analysis of the concept of education as given by variousphilosophers and educators will make clear that their views on education are based on varying conceptsof reality of knowledge and of values. In Block-2 of this Paper, you have been acquainted with thefour major schools of Western philosophy and their respective educational formulations. Naturally, youhave observed that all these schools of educational thoughts have been developed by some eminentpersons who loved truth, knowledge and educational well-being of the human beings. Most of thoseeducational movements were the expressions of their philosophical beliefs. Views of some great thinkers like Rousseau, Dewey, have been discussed in this Unit, as each of them hasbeen the educator of all of us, regarded as the Great Educators, and who has advanced the majorthoughts on education in different tones.

5.1.2 : OBJECTIVES

After going through this unit, students will be able to:

- State the educational philosophies of Rousseau and Dewey
- Explain Rousseau and Dewey's aims of education;
- Discuss Rousseau and Dewey's views on methods of teaching;
- Describe the contributions of Rousseau and Dewey, in education;
- Judge Rousseau and Dewey's educational ideas and practices.

5.1.3 : J. J. ROUSSEAU (1712-1778)

Introduction

Rousseau is regarded as the most important naturalist philosopher of education. His writings werepublished since 1750 A.D. onwards. Some of his famous works are: (1) The Progress of Arts andSciences; (2) Social Contract; (3) New Heloise; and (4) Emile. Of these, the most important are Emileand Social Contract. Emile is a novel in which the author has described the methods of bringing thechild in contact with Nature and removing him from social evils. The child is left under the guidanceof an ideal teacher away from school and society. The teacher teaches the child in a natural environment.The book Emile consists of five parts respectively devoted to infancy, childhood, adolescence, youthand the imaginary wife of Emile names Sofia. Rousseau was particularly impressed by the poverty andsuffering of the people. He hated society for its evils and wanted to reform it. He realized, "Everything is good as it comes from the hands of the author of the Nature but everything degenerates in thehands of man". Thus, Rousseau, on the one hand, opposed society and praised Nature on the otherhand. His book Social Contract portrays his ideas concerning society and politics. Rousseau had toleave France for England in 1766. He died in 1778. His thoughts influenced French revolution. He isacclaimed as a great revolutionary and reformer. Education and its successive transformation over thepast four hundred years, have renewed educational theory and practices.

Aims of Education

In the opinion of Rousseau, education aims at the natural development of the child's inner facultiesand powers. Education should help the child to remain alive. Life implies not merely taking of breathbut working. To live is to work, to develop and to properly utilize the various parts of the body, thesense organs and the various other powers of the body. In his book Emile, Rousseau seeks to trainEmile in the profession of living so that he may become a human being before becoming a soldier, achurchman or a magistrate. Education, thus, in Rousseau's opinion, must aim at making the child a realhuman being.

But the aims of education proposed by him are observed to change at different stages of thechild's development, because at each stage something different needs stress. Hence the changes naturein aims of education is natural and conforms to law of human development. The following are thevarious aims of education according to each level of the child's development.

Infancy: This stage begins at birth and continues up to five years of age. The chief objectivesof education during these five years is bodily development, the development and strengthening of everypart of the body. This is essential if the child is to grow up healthy and strong. It forms the basis ofsubsequent healthy development of the mind. When the child is allowed to freely engage in playingand exercising his body, he remains active and has no time to indulge in desirable activities. Nothingneed be done to develop his instincts other than to give him complete liberty. If such freedom is given,he naturally develops his own instincts as well as impulses.

Childhood: This stage begins from the fifth year to the twelfth, and it is the period of developingthe child's sense organs. This development is achieved through experience and observation. Hence,the child should be made to observe and experience those things in his environment, which will assistthe development of his sense organs, i.e. refinement activities like smelling, seeing, hearing, touching,etc.

Adolescence: For Emile, adolescence has been believed to last from the twelfth to the fifteenthyear. The child has, by this time, achieved the development of this body and his sense organs, and is,therefore, prepared, for systematic education with the aids of tools of body parts and use of senses.At this stage, education aims at developing the adolescent personality through hard work, guidanceand study. During adolescence the individual should be given knowledge of various kinds so that heis enabled to fulfill his needs of various kinds.

Youth: The individual passes through his youth between his fifteenth and twentieth years andundergoes development of emotions and sentiments. Rousseau pointed out, "We have formed his body,his sense and intelligence, and it remains to give him a heart". Development of the sentiments will leadto development of moral and social qualities, but it is essential to pay attention to the development ofreligious emotions also. Summing up, the aim of education is to achieve the bodily, sensory, mental,social and moral development of the individual.

In sum, aims of education at least four fold-education aims at developing the child's (1) body,(2) senses, (3) intellect, and (4) heart-sensitivity and affectivity. Education is programmed in conformitywith the law of development of the child. Education is, then, natural.

Curriculum of activities

It is possible to arrive at Rousseau's concept of a curriculum from an analysis of the variousstages of development described in his Emile. Even in framing the curriculum, Rousseau paid attentionto these four stages in development, and it will be better to consider the curriculum in the same fashion.

Infancy: Rousseau was very critical of the contemporary curriculum laid down for the educationof infants, because he advocated that infants should be treated as infants and not as adults in theminiature. The child is not a young adult, because his instincts and tendencies are dissimilar to thoseof the adult. It is imperative to first understand the psychology of the child and then to frame acurriculum. Instead of giving him controlled information of various subjects at this stage, he advisedto pay attention to the development of his body and his senses. In this age, the child can be taught agreat deal through normal conversation carried on in the child's mother tongue, for developing hislinguistic ability. It is better not to try and instill any kind of habits in the child at this stage. Thecurriculum is child's natural activities.

Childhood: Even in childhood, Rousseau has objected to the use of any textbooks for education,because he has wanted to keep Emile away from books of any kind up to the twelfth year. He hasthought it necessary to give the child a chance to learn everything through direct experience andobservation. This is based on his concept of negative education, which suggests that the child's mindshould not be stuffed with information of different kinds. Instead he should be given liberty to learnthrough experience, because it develops the sense organs, which in turn lead to mental development.When the child is free to play, move, act at his own will during his childhood, he goes through aVariety of experiences and learns all kinds of activities. During childhood, he should not be given any verbal lesson on history; geography or even language; it is not desirable even to do any moral preaching. Rousseau opined that the child would learn his morality by the natural consequences of hisown actions. Hence, up to the childhood stage no formal curriculum of any kind is required for hiseducation. The stage appropriate normal activities of the child will be his curriculum.

Adolescence : Having arrived at the appropriate level of bodily and sensory development, thechild can be exposed to teaching according to a formal curriculum consisting of education in naturalsciences, language, mathematics, woodwork, music, painting, social life and some kind of professionaltraining. Even here, Rousseau opined, more stress should be laid on the use of the sense organ thanbooks. The very object of training in all these various subjects is the training and development ofthese organs. The study of science will enhance the child's curiosity and his inclination towards research,invention and self-education. Painting helps to train the muscles and eyes. Handicrafts help in developingthe ability to work, apart from the mental development, which is part of the process. Passing throughvarious phase of social life, the individual learns that men depend upon each other, and thereby thechild learns to assume and fulfill social responsibility. Rousseau believes that books do not giveknowledge, but only train one to talk. Hence, it is better if the curriculum for adolescence is based onactive work than on books. During this period the adolescent must get adequate opportunity and timefor hard work, education and study. Thus, the curriculum is activity-based.

Youth: In the curriculum for youth, special stress has been laid on moral and religious education.But even moral education is to be derived through actual experience rather than through formal lectures.The youth learns a moral lesson when the sight of a physically handicapped person arouses in himthe feelings of pity, sympathy and love. Religious education also follows the same pattern but theteaching of history, mythological stories and religious stories can assist it. The youth drives manylessons from these stories. Apart from moral and religious education, Rousseau gave appropriateimportance to education in bodily health, music and sex. Thereby Rousseau has proposed a learnercentric and life-centric curriculum for every 'Emile'.

Rousseau's Views on Methods of Teaching

Individual instruction: Rousseau has emphasized the importance of individual instruction. He hasbelieved that the individuality of the child should be recognized by the educator and duly respectedby him.

The principle of learning by doing: He lays stress on the principle of learning by doing. Hesays, teach by doing whenever you can and only fall back on words when doing is out of question.He believes that the child should take part in various activities and learn in a natural way.

Direct experiences of the child: Rousseau would like Emile to learn from his own experiencesand not from books. Knowledge acquired from books is second hand and easily forgotten. Personalknowledge directly acquired through uses of senses and mind from various learning situations, issomething permanent, which the child will not forget. This constitutes the permanent nature of hischaracter. This principle may also be followed in developing the child's natural discipline — obedience to natural laws as any violation or neglect of these laws invariably leads to pain and suffering. He willbe disciplined if he is left to himself.

The heuristic method: Rousseau also advocates the heuristic method of teaching. He would liketo place the child in the position of an original discover.

Example is better than precept: For imparting moral education Rousseau believes in the principlethat example is better than precept. There is no use of lecturing on morality to him, he should have anexample of moral behavior and opportunities may be provided to him to practice virtue.

Social knowledge by social participation: The child in his period of adolescence will get knowledgeabout social relations by actually visiting places and coming in contact with the members of the community.

Rousseau's Influence and Contribution:

Rousseau's contribution to the subsequent developments in the field of education is far-reaching.The subsequent educational theories and practices were immensely influenced by his lofty ideas. Allthe modern methods of education also originated in him.The child is the center of educational enterprises.Hence, "Treat your child according to his age". — is the most practical suggestion of Rousseau. Itwas Rousseau who emancipated the child from the trammels of the society and medieval restraint andgave the child his rightful place. Thus, Rousseau introduced psychological tendency in education.Pestalozzi in this respect followed his suit. Who put the theory of Rousseau into practice. A systematic theory of child's psychology began to develop since the time of Rousseau. As against verbalism andbook learning, Rousseau emphasized the value of concrete objects. Learning by doing was his greatprinciple.

The greatest contribution of Rousseau was his emphasis that education should prepare the individual to live in society. Thus, he laid the foundation of the sociological tendency in moderneducation.

Rousseau's emphasis on the phenomenal nature led to the scientific tendency in education. The19th century witnessed various developments in the physical and biological worlds. This led to thedevelopment of the materialistic naturalism in education, of which Herbert Spencer and Huxley were thechief representatives.

Some educators were greatly influenced by the doctrine of individuality propounded by Rousseau.He was an opponent of an artificial and repressive society. This resulted in the democratic movementin education individual worth is highly honored and valued. He revolted against the social inequalitiesof his age. Rousseau wanted not reform but revolution in the field of education.

His main idea, -education according to nature -has been universally accepted. He denounced theold and showed the new; this became the inspiration to all educational reformers of the future, whichreduced his theories into practical procedure. In the word of Ross: "He was the fore runner of somany, who have followed in the trails he blazed through the forest, until now they have become thebroad highway of common travel".

Criticism of Rousseau's Educational ideas and practices

Dr. Graves has severely criticized the educational ideas and practices of Rousseau. Rousseau'sideas, according to him, are full of contradictions and inconsistencies. Rousseau himself said: "I ratherto be a man of paradox than prejudices". The education advocated by Rousseau was anti social. Hisscheme of education has condemned social and cultural heritage, as believes, society is subordinatedto the individual who is supreme. Social environment is neglected. Rousseau's view of democracy iswrong in the presented world. The individuals exist for the society; the society does not exist for theindividuals. This is the present view of democracy. Rousseau held just the opposite view and hencehe was erroneous. Rousseau vehemently opposed women's education. "A woman of culture is to be avoided like a pestilence". Rousseau was a theorist and not a practical educationist". Rousseau hadgreat ideas but he had no ability to implement them.

Question :

Let Us Check Our Progress

Answer in about 60 words

1. Identify the main features of the educational philosophy of Rousseau.
2. Rousseau's aims of education.

5.1.4 : JOHN DEWEY (1857-1950)

Introduction

John Dewey was born in 1859. After graduating from the University of Vermont in 1879, he startedhis career as a school teacher and had the actual experience of teaching in classroom. His philosophyis not simply speculative but based on the actual experiences in the school. In April 1882 he wrote hisfirst article entitled, "The Metaphysical Assumption of Materialism" in Journal of Speculative Philosophy.After leaving his job as a school teacher, Dewey joined Johns Hopkins University and obtained degreeof Ph.D. in Philosophy in 1884. Thereafter, he worked as a professor of philosophy at the universitiesof Minnesota, Michigan and Chicago. It was at Chicago in 1896 that Dewey founded the ideal UniversityLaboratory School. This school served him as a scientific laboratory in obtaining knowledge of facts and laws still unknown to the educationist of the world. It was here that he tested, modified and clarifiedhis theories. He was invited by the University of Peking to deliver lecture on philosophy and education.Some of his famous books are : How we think (1909), Democracy and Education (1916), Moral Principlesin Education (1909), The School and Society (1915), Experience and Education (1938).

Dewey's Philosophy

Dewey's philosophy and programme has been variously termed as 'Experimentalism', 'Instrumentalism', 'Operationalism', 'Progressivism', and above all 'Pragmatism' of which the first twoare the most appropriate. All these indicate his emphasis on the dynamic and ever-changing characterof life. Dewey tests every hypothesis or belief or principle by the way it works or by its consequences.He has said that there are no fixed beliefs. He also insisted that the intellect was subordinate to practicalends. 'Utility' was the touchstone of every value. Pragmatism teaches that which is useful, what worksin a practical situation is true; what does not work is false. Truth thus becomes not a 'fixed', 'eternal'thing but something that is subject to change. According to pragmatism what is true to day may befalse tomorrow that is truth is relative. Dewey proposed five values :

1. Aesthetic taste or capacity.
2. Conscientiousness.
3. Efficiency.
4. Scientific spirit.
5. Sociability and social efficiency.

The place of Teachers in Dewey's scheme: Discipline

Dewey gives an important place to the teacher. He is a social servant. His duty is to maintain aproper social order and to see that the children grow in a social atmosphere. A teacher should beconcerned more with the pupil's impulses and interests rather than the inculcation of knowledge.

Hismain function is to guide the young through the complexities of life. The teacher has to help thechildren so that they can adjust successfully with the contemporary conditions of life. Dewey wasstaunch advocate of freedom of children. But this freedom has to be regulated and organized by theteacher and it should be exercised in the interest of the society as well. The teacher is not to impose his personality or his ideology on the child. His business is not to impose his influences, which shouldenrich the child's experience, and to help him so that he can properly respond to such influence. Hemust know the intelligence and temperament of each pupil for guidance in desirable channel. At the same time ensure that the individual and the group move in harmony — "acquiring the best and mostpositive habits of growth". No rigid discipline should be imposed on the child.

The teacher's duty is to provide the right type of environment that will enrich the child's experience and will direct his activities in a co- operative manner and to sustain child's motivation,individuality and sociality cannot be divorced, they are interdependent and interrelated. The teachermust manipulate the learning climate accordingly so that the learners can achieve competences ofdemocratic living and further experiencing.

Dewey's conception of the curriculum

Dewey has had no faith in the traditional curriculum, as it cannot fulfill the aims of educationset forth by him. He did not believe in the faculty theory of psychology, which divides the mind intodifferent compartments such as memory, imagination, perception, judgment etc. He considers mind asan organic whole. So he does not like the division of knowledge into isolated branches or specialstudies. The traditional curriculum does not take into account child's nature and so he has discardedit. To Dewey, it is the child's own activities around which the school subjects should be organized,not around subjects like science, literature, history, geography etc. Dewey's curriculum includes the"occupations" and "associations" which serve the needs of man. Dewey considered the child as a unity developing through its own activity but in a social setting and social experiences should fromthe main factors of the curriculum. Dewey says, "the beginning is made with child's expressive activitiesin dealing with the fundamental social material - food, shelter, clothing, and the direct modes of socialcommunication like speech, writing reading, drawing, modeling, moulding etc. Thus the curriculum inthe primary school should be organized according to the four-fold interests of the child in conversation,enquiry, and construction and artistic expression."

Dewey's curriculum is based on the actual experiences, interests and impulses of the child. Instruction is a "continual re-construction". The past experiences are re-constructed in the light of the present experiences. Actual experiences will arouse interest and great motivation for learning. Hencethe curriculum is bound to be dynamic and not static or fixed. Action, said Dewey, must be givenpriority to abstract thought. The teacher has to plan and organize learning situations for pupils withthe help of his matured experiences.

According to Dewey, the curriculum should consist of "educative experiences and problems".Dewey uses the word "educative experiences" in a special sense and argues, only those experiencesare educative which pay due regards to the natural inclinations of the child in the context of the social,political, physical and economic conditions of the community. According to him, an educative experienceis creative and leads to further experience. It has power of modifying the

experiences and modificationthus effected, affects the subsequent experiences. An education experience subordinates books, teachers and apparatus to the natural inclinations of the pupil and takes into consideration the social, political,physical and economic conditions of the community.

Besides in general principles of curriculum construction Dewey has advised as to how to organizethe curriculum. Dewey has proposed an integrated curriculum and followed the principle of correlationin the organization of subjects. Moreover, different subjects should be naturally correlated. Dewey madeindustrial activities, and their historical and social development - the center of the curriculum and groupthe rest of the subjects around this center.

Dewey's scheme of curriculum also included aesthetic, religious and moral education. For fulldevelopment, Dewey considered art as, "perfected expression of basic human activity". Similarly Deweywants that religious and moral education should be made an integral part of the basic experiences ofthe child. He, of course, does not want to give religious and moral education through lessons but bypractical experience. The children should develop moral interest and insight. Morality in discipline comesthrough the free and purposive judgment of the individual.

Dewey's Methods of Teaching

Dewey's methods of teaching consist of three processes: (1) Continuance of psychological orderin the curriculum; (2) Relation of problem or project method; (3) Extension of social opportunity. Thefirst is natural and, therefore, essential. The second would enable the pupils to learn "not things butthe meaning of things". The third would arouse social consciousness. Dewey's methods of teachingare based on his pragmatic philosophy. He is of opinion that direct experience is the basis of all method.Knowledge takes place from concrete and meaningful situations. Hence knowledge should come from spontaneous activities of the children. Dewey's methods of teaching are based on the principles oflearning by doing, activity in connection with the life of the child. In his method, what a child does isthe most important thing. In the Project Method that Dewey advocates the child's interests and purposesare the most important things. For his Project or Problem Method Dewey has laid down the followingfive steps as essential:

1. The pupil should have a genuine situation of experiences;
2. A genuine problem should arise from this situation and should stimulate the thinking of the child;
3. The child should obtain information or make observation needed to deal with the problem;
4. The suggested solutions should occur to him;
5. He should have an opportunity to test his ideas by application.

Dewey's Contribution to education

Dewey was a great philosopher, psychologist and educationist. His influence is far-reaching. Hehas contributed immensely to every aspect of education in America as well as outside. He was

morefor practice than theory, more for experimentation that speculation, more for action than thoughts. Heintroduced the principle of activity which should be the basis of all teaching and learning. He was thepioneer of the "activity movement" in education.

Dewey emphasized the necessity of relating education with the practical life of the child. Education,he believed, divorced from the real situations of life is no education at all. He stressed on the practicalvalue in education.

The fusion of psychological and sociological aspects of education is the greatest contributionthat Dewey made to educational thought. He held that the school should foster a community of life, aprocess of living where the complexities of social life are "simplified, purified and balanced". The teacher,said Dewey, is the senior member of the school community rather than an officer appointed to imposecertain ideas.

Dewey laid stress on both individual and social aspects of education. He emphasized the necessityof studying the innate powers (capacities, impulses, interests) of the child, for his successful education.He reconciled interest and effort. At the same time, he did not fail to emphasize the social sanctionsthat education. He rightly stressed that education is intended to be a means of preserving, transmittingand advancing the culture of the community. One of the far-reaching and notable contributions of Deweyis the project or problem method. He laid stress on the importance of the problem to stimulate effectivethinking. The project method is the practical outcome of Dewey's philosophy. It is welcomed andemployed by educationists all over the world.

Dewey has rightly stressed on the need to train pupils in co-operative activities and democraticliving in their community. Training for productive citizenship forms an integral part of education. Deweyconsidered carefully and reasonably the growing forces of democracy, science, industrialism, evolutionand pragmatism. Dewey virtually discarded the old realm of knowledge. He brought education moreinto accord with the activities of the presented day life. The attainment of social unity was Dewey'sheart message for school and society.

The experiment in education developed by Dewey at Chicago in 1896 in his experimental orLaboratory School has stimulated the effort to bring the school into intimate relation to the communitylife. He emphasized on the actualities of life in education. In the words of Bertrand Russell, Dewey hasan outlook, which, "is in harmony with the age of industrialism and collective enterprise".

Criticism

Although Dewey's views on educational principles were enthusiastically received, they were alsosubjected to criticism on the following grounds:

Materialistic bias : Pragmatism was born out of reaction to idealism, and consequently it manifestsa distinctly materialistic bias, in contradiction of the spiritual bias of idealist philosophy. At the sametime, Dewey wantsto realize democratic ideals of freedom, equality and fraternity through

education. But it is difficult tounderstand how this can be done unless he accepts an idealistic basis for his system of education.

Absence of any aim of education : For him, education is life itself, and it is not possible to determine any objective for it. Most scholars disagree with this opinion because they believe thateducation can progress only when it has some definite aim and objective.

Excessive emphasis upon individual difference : Modern educational psychology accepts inprinciple that the curriculum of education must take into account the individual differences of childrenand that children must be educated according to their individual and unique interest and inclinationsboth in respect of curriculum and also of the method of teaching. While in theory this is quite acceptablebut any attempts, to apply in practice lead to immediate complications. It is almost, if not completelypossible to provide a separate educational plan for every individual child in a school.

Limitations in learning through doing : These are no doubt that the child should learn actuallydoing things, as Dewey suggested, yet the theory has its limitations. Many facts known to an individualare acquired from another person. It is almost impossible for one individual to experience every factknown to him. Thus, the educand should also try to benefit from the experience of his teacher, educatorand colleagues.

In fine, it is a fact that Dewey's philosophy of education has not had a truely systematic criticismbecause most critics have taken on only piecemeal aspects or have made no critical analysis.Nevertheless, this philosophy has made important contributions to educational theory and practicesand will continue to do so.

Question :

Let Us Check Our Progress 3.3.4

Answer in about 60 words

1. State the educational philosophy of Dewey.
2. Analyse curriculum proposed by John Dewey.

5.1.5 : SUMMING UP

The present Unit has attempted to discuss the contributions of great educators. We have seenin detail that the great educators like: Rousseau, Dewey's contribution ofeducation in respect of their respective educational philosophy, aims, methods of teaching and curriculum.Perhaps you have, at the end of this Unit, been much impregnated with changing nature of philosophicaldoctrines which are actually ever-evolving.

5.1.6 : SUGGESTED READINGS

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9. Bhatia, K. and Bhatia, B. D. (1992): *Theory and Principles of Education, Doaba House*; NewDelhi, pp. 49-56, 136-146.

5.1.7 : ASSIGNMENTS

1. "Rousseau is claimed as a naturalist prophet by all educational thinkers". Discuss his contribution to the modern thought and practices.

2. "John Dewey was the greatest exponent of the pragmatic philosophy of education". Explainthis statement and bring out clearly his contribution to educational thought and practices.

3. Discuss Rousseau's contribution to naturalist philosophy of education.

4. Rousseau is claimed as a naturalistic prophet by all educational thinkers and at the same time, it is asserted that his educational aims were idealistic. How can you reconcile these two divergent opinions?

Unit -2
Bertrand Russell & A.N. Whitehead

CONTENT STRUCTURE :

5.2.1 : Introduction

5.2.2 : Objectives

5.2.3 : Bertrand Russell

5.2.4 : A.N. Whitehead

5.2.5 : Summing up

5.2.6 : Suggested Readings

5.2.7 : Assignments

5.2.1 : INTRODUCTION

Philosophy assists the educator in formulating beliefs, arguments, assumptions and judgmentsconcerning learning and teaching, character and intellect, subject matter and skill, desirable ends andappropriate means of schooling. A close analysis of the concept of education as given by variousphilosophers and educators will make clear that their views on education are based on varying conceptsof reality of knowledge and of values. In Block-2 of this Paper, you have been acquainted with thefour major schools of Western philosophy and their respective educational formulations. Naturally, youhave observed that all these schools of educational thoughts have been developed by some eminentpersons who loved truth, knowledge and educational well-being of the human beings. Most of thoseeducational movements were the expressions of their philosophical beliefs. Views of some great thinkers like Bertrand Russell and A.N. Whitehead have been discussed in this Unit, as each of them has been the educator of all of us, regarded as the Great Educators, and who has advanced the majorthoughts on education in different tones.

5.2.2 : OBJECTIVES

After going through this unit, students will be able to:

- State the educational philosophies of , Russell and Whitehead;
- Explain Bertrand Russell and A.N. Whitehead 's aims of education;
- Discuss Bertrand Russell and A.N. Whitehead 's views on methods of teaching;
- Describe the contributions of Bertrand Russell and A.N. Whitehead in education;
- Judge Bertrand Russell and A.N. Whitehead 's educational ideas and practices.

5.2.3 : B. RUSSELL (1872-1970)

Introduction

Bertrand Russell, one of the leading scientists and philosophers of the present era. He at thesame time was a philosopher, mathematician, historian and a literacy figure. He was a liberal and criticalthinker, a rationalist, an idealist as well as a pragmatist. He has advised to love what is true and toteach the students through love and sympathy. He has made a significant contribution in the field ofpedagogies and social and political philosophy. Russell has been regarding as a spokesman ofprogressivism in social and political matters. He took a keen interest not only in educational theorybut also in educational practices. He has written a large number of books on various subjects - Science,Mathematics, Philosophy, Psychology, Religion, Politics, etc.

Publications of Russell

Principia Mathematica (1910), Marriage and Moral (1950), Works on Education (1926), Educationand Social Order (1926), The Scientific Outlook, The place of Science in a Liberal Education, An outlineof Philosophy, Principles of Social Reconstruction, Mysticism and Logic, Sceptical Essays, Educationand the Modern World, On Education, etc.

Russell's Philosophy of Life

B. Russell was born in 1872 in a well to do family of England. He viewed life from rational pointof view. Science lies at the root of human progress. This was the cardinal point of the philosophy oflife of Russell. As regards religion he nourished the principle of religious neutrality. He inherited ahuge family property, but he denoted all these for social welfare.

Meaning, Concept and Aims of Education

Bertrand Russell's ideas on education are extensive and he has attempted to pay attention toevery detail of human nature and practical living in order to facilitate an educational system that wouldproduce better social cohesion. He has in his On Education proclaims, "The deal system of educationmust be democratic although that ideal is not immediately attainable"; in fact that democracy could beopen to all ensuring every person's social justice. That democracy should not rest solely uponmechanical university, rather he envisioned for an educational democracy proclaiming individual creativityand puts faith upon diversity guarded by social equity and equal opportunities for all. Secondly, he has attempted to distinguish present day's ornamental education form useful education. Elaborating this concept further, Russell says, "an activity is 'useful' when it has good results." and has exemplified itas: "A plough is useful because it breaks up the ground. But breaking up the ground is not good onits own account; it is useful because it enables seed to be sown. This is useful because it producesgrain, which is useful because it produces bread, which is useful because it preserves life.

But lifemust be capable of some intrinsic value: ... it may therefore also be useful, when it is a means to goodlife." By corollary, useful education connotes the process of **education as a means to an end**, not anend itself, and says, "A plough is useful because it breaks up the ground" if it aims at this only. Next,he urges for keeping the balance between the humanistic elements and the utilitarian elements ineducation and says, "The humanistic elements in education must remain, but they must be sufficientlysimplified to leave room for the other elements without which the new world rendered possible byscience can never be created." Moreover, he has felt needs for the development of **self-discipline** inthe educative process and discarded the old idea of discipline as the later rested on the assumptionthat children could not possibly wish to learn and could only be compelled to learn by terrors. The**spontaneous wish to learn**, which every normal child possesses, as shown in efforts to walk and talk,should be the driving force in education. Therefore, he urged for giving greater attention to infancyand opposed the "idea ... that virtue depends essentially upon will: we were supposed to be full of bad desires, which we controlled by an abstract faculty of volition."

So in this way Russell has attempted to develop a theory on education which intends to **cultivate and develop character** through good but useful education wherein the pupil should be regarded asends, not means. Moreover, a good character should be universally desirable. Russell considers fourcharacteristics which conjointly are the foundations of an ideal character; these are **vitality, courage,sensitiveness and intelligence** touching upon **physical emotional and intellectual** dimensions of a man'stotal personality. He makes elaborate analyses and also gives sufficient reasons for inclusion of thesefour pillars of personality and argues for inculcation of each through creating and sustaining excellenteducation systems which is desirable and useful for the humanity.

Vitality, in Russell's opinion, signifies more of psychological aspects than of physiological aspects of a human character. **Courage** is a complex feature of human character and has many forms. Absenceof irrational fear and the power of controlling fear are held good and he suggests that "couragecultivated in all nations, in all classes, and in both sexes" and man should possess of and display thehighest kind of courage. An individual with the highest magnitude of courage has an impersonal outlookon life, feels his ego to be but a small part of the world, is guided by knowledge, manifold interests,and his instinct is free and intelligence is active. That is his courage is positive and instinctive, not negative and repressive.

Sensitiveness has two aspects — emotional and cognitive. Inculcation of the second kind ofsympathy is more demanding which is called abstract sympathy for the total humanity - to feel forabstract stimuli. Further cognitive sensitiveness which is practically the same thing as a habit ofobservations closely linked to general intelligence.

He looks **cultivation of intelligence as major purposes of education**. He also considers intelligenceas the aptitude for acquiring knowledge or intelligence as a habit of processing information.

It will begrounded on curiosity — a genuine love for knowledge demonstrating person's higher level ofintelligence rather than curiosity about facts. There must be habits of observation, beliefs in thepossibility of knowledge, patience, industry, passion for knowledge, perpetual love for searching knowledge, etc. Development of open-sidedness among children will be one aim of education what Russell advocates for.

Finally, Russell envisages that "The good world can only be created and sustained by fearlessmen" for which there will be good education that aims at developing "A community of men and womenpossessing vitality, courage, sensitiveness and intelligence, in the highest degree that education canproduce, would be very different from anything that has hitherto existed. Very few people would beunhappy. The main causes of unhappiness at present are ill-health, poverty and an unsatisfactory sexlife." He firmly advocates: **Education is the key to new world**. His optimistic attitude towards the abilityof education to change the ways in which human beings socially interact, coexist and co-operate is the aims of education at international platform. Thus, resolutely advanced the idea of 'one world' andenvisaged for scheme of education towards that direction.

Russell has pointed out the following aims of education —

(i) Aims of education are not static and absolute.

(ii) Education is a process of self-development. So self-development is possible only in and through society. Education should aim not only at individual growth but also at the cultivation of the sense of citizenship.

(iii) Education is not end itself; it is a means to and end.

(iv) Education is humanistic as well as utiliterianistic.

(v) Education is wholesome development from the individual, natural and internet perspectives.

Curriculum

Russell recommended a general and compulsory curriculum for children upto the age of 14 years.At this stage the curriculum should include ancient literature modern language, mathematics, science,music, geography, dance and etc. Russell has prescribed two types of curriculum for children between ages of 15-18 —

(a) Specialized curriculum for advanced students and

(b) General curriculum for mediocre students. Russell has recommended language study shouldbegin at early stage. He has also recommended nature study for young children. He hasalso suggested that children should be educated in modern school where Montessori methodis followed. Russell has strongly advocated sex education for children along with othersubjects to prevent abnormal behaviour. He was dead against religious education in school.He strongly favoured co-curricular

activities in school for the all round development of thestudents. Besides play he has emphasize dance, music, agriculture and horticulture as cocurricularactivities.

However, the whole curriculum may be presented as below:

0 to 6 yrs.	6 to 14 yrs. of age	Last School yrs.	University	All one's life
Vitality, Courage, Sensitivity, Cultivation of intelligence Abstract sympathy	Reading Geography, History, Dance Lit/Language, Classics, Math/Science Anatomy/Physiology/Hygiene	Anatomy/Physiology/Hygiene Current Political/economic/religious/sociological issues Specialization should be taught watever interest them	Specialization in : Math, Science, Humanities, Classics (including Latin & Greek) Reading lists instead of lectures	Cultivation of Intelligence : (i) open minded (ii) concentration (iii) exactness (iv) sense of intellectual adventure

Methods of Teaching

Russell has been a serious syntheser of various principles of learning and teaching in context ofcurriculum transaction in the formal schools. He has laid special emphasis on motivating the learner,creating appropriate learning climate, uses of reinforcement, uses of instructional aids of various kinds, permitting students for free-activities and many more conditions of learning. He has also suggested foruses of both general and subject-specific methods of teaching.

Russell in his famous education treatise "On Education" has emphasized on the method teaching.He has advised the following methods of teaching:

(i) Psychological Method: Those subjects should be taught to children to whom they have natural inclination.

(ii) Motivation is an important factor of learning.

(iii) Montessori Method - simple to complex.

(iv) Play-way method.

(v) Lecture method.

(vi) Debate and discussion method.

(vii) Dramatic method - History, Geography, foreign language.

(viii) Story telling method.

(ix) Other learner-centered methods of teaching.

Teacher

According to Russell teachers are the true guardians of civilizations. A teacher need not possesseshigh talent but he must have the modern and up-to-date knowledge and the knowledge in methods ofteaching. He should have sympathy, affections and patience for his students. A teacher must haveacquaintance with the latest development in psychology, particularly in child psychology. He puts:"Neither character nor intelligence will develop as well, or as freely where the teacher is deficient inlove ... feeling the child as an end.

Concluding Remarks

Russell's philosophy has been called logical atomism. Russell was an eminent mathematician. Hedeveloped his philosophy of logical atomism as a consequence of his deep and penetrating studies inthe philosophy of mathematics. He has traveled almost all the fields of education. His writings are notfree from contradiction. His educational ideas contain both positive and negative aspects. But he hasmade a happy synthesis of all the conflicting views. He was staunch advocate of international education,peace and amity. He was in favour of applying latest psychological development in Education. Russellwill be remembered forever for his lofty ideas for the improvement of moral and material conditions ofmillions of people of the world.

In fact, Russell tried to put some of his educational ideas to work at the school he founded, named Bearton Hill. However, his radicalism met resistances and his efforts in education met with limitedsuccess at Bearton Hill. But he continued to the end of his life to try to bring about through educationchanging that he deemed beneficial to humanity for which this great mind attracts educationists till the date.

Russell offers an optimistic attitude to the power of education to change human society and theeffect of his educational system on today's education system cannot be denied. In his view, theremust be liberty in educationand the student should be allowed to specialize in an area of her choice. This is practiced now. He feltthat an increase in the 'scientific spirit' of inquisitiveness, critical thinking and the objective outlooknecessary for science to foster in human beings the creative impulses and in consequence, satisfytheir desires for power, competition and pride. In some areas of post-secondary education, these twoaspects are now quite invisible. The problem, Candice Arthur, argues here is that Russell's argument presupposes a human nature with a will that cooperates with the intellect in controlling the possessiveimpulses; however, in light of the current state of affairs this view is highly optimistic and impractical.

Hopefully, you as a learner, will attempt to analyze Russell's educational thesis more deeply andto identify other merits and demerits of his systems.

Question

Let Us Check Our Progress

Answer in about 60 words

1. State the educational philosophy of Russell.
2. Explain Russell's methods of teaching.

5.2.4 : A. N. WHITEHEAD (1861-1947)

Introduction

Dr. A. N. Whitehead was an Englishman, Philosopher, Mathetician, an educator and also one ofthe greatest thinkers of the modern world. He studied philosophy, theology and classics at Cambridgeand was appointed as a lecturer in Mathematics at the same University. In 1942 he was appointed as aprofessor of Philosophy at Harvard, U.S.A.

Literary work of Whitehead

Whitehead wrote many well-known books, such as: Science and the Modern World (1925), Processand Reality (1927-28), the foundation of reason (1929), The Aim of Education (1929), Essays in Scienceand Philosophy (1948), etc.

Bases of Whitehead's Educational Philosophy

Whitehead's doctrine of education has some resemblance with that of John Dewey. For, like Dewey,he stresses the importance of the utilization of knowledge, the need to interest students in their workand the danger of discriminating discipline. Whitehead's general concept of the nature and aims ofeducation, on the other hand, has bearing on its psychological corollary, a conception of the rhythmof education that connects him with developmental educators such as Rousseau. Whitehead attacksprevailing education systems as anti-educational, because they force teachers to teach only what is known already, and they can make no account of the unique, creative relationship between a particular teacher and a particular student. He proposes that education is essentially an aesthetic activity andopposes the aimless accumulation of inert knowledge. True learning, according to Whitehead, comesthrough action and experience, not through being stuffed with dead information and ideas. Whiteheaddistinguishes between three phases in the development of a mature human being, each characterizedby a different mode of being. Children experience the world through the **confluent mode**, which isessentially physical. The whole past experience of the universe flows into the present moment. Thismode is dominated by the experience of detachment, separateness and discrimination. While the *confluent*mode gives us a sense of oneness with the universe, the **discernment mode** gives us a sense ofotherness and a capacity to choose. While the *confluent* mode gives us a sense of being caused, the *discernment* mode gives us a sense of *causing ourselves*.

The third phase is dominated by what Whitehead calls the **spiritual mode** of being. It is the experience of the relationship between the two other modes. The three phases of development frominfancy to maturity replicate the oscillation between the physical and mental poles in each moment of creative experience — physical sensation, mental observation and the imaginative leap that connects them.

For Whitehead, **education is** a temporal, **growth-oriented process**, in which both student andsubject matter move progressively. Growth characterizing a part of physical and mental development isheld as a central driving motif. There are three fundamental stages in this process, which Whiteheadcalled the **stage of romance, the stage of precision** and **the stage of generalization**.

Romance is the first moment in the educational experience; all rich educational experiences beginwith an immediate emotional involvement on the part of the learner... The stage of **precision** concerns"exactness of formulation" (Whitehead 1929, p.18), rather than the immediacy and breadth of relationsinvolved in the romantic phase. **Precision** is discipline in the various languages and grammars of discretesubject matters, particularly science and the technical subjects, including logic and spoken languages.It is the scholastic phase with which most students and teachers are familiar in organized schools andcurricula. Precision is nevertheless a necessary element in a rich learning experience, and can neither substitute for romance, nor yield its place to romance. **Generalization**, the last rhythmic element of thelearning process, is the incorporation of romance and precision into some general context of serviceableideas and classification. It is the moment of educational completeness and fruition, in which generalideas or, one may say, a philosophical outlook, both integrate the feelings and thoughts of the earliermoments of growth and prepare the way for fresh experiences of excitement and romance, signalling anew beginning to the educational process.

These three rhythmic moments of the educational process characterize all stages of development,although each is typically associated with one period of growth. So, romance, precision and generalizationcharacterize the rich educational experience of a young child, the adolescent and the adult, althoughthe romantic period is more closely associated with infancy and young childhood, the stage of precisionwith adolescence and generalization with young and mature adulthood. It is "holy ground" (Whitehead1929, p.3), and each moment in a person's education ought to include all three rhythmical elements.

Keeping children's grounding with Nature involves keeping them alive to the experience of Nature.Adults' attitude towards Nature appears to be profoundly influenced by their childhood experiences.For some children, the only opportunities to have a rich experience of the natural world are the onesprovided by the overworked teachers in their under funded school. "Growing" is a

cosmic process inwhich the individuals including the young taught participate. Teachers are alive. Students are alive.Education must be alive. The fragmentation of curriculum into knowledge and skills, and thefragmentation of knowledge and skills into disconnected elements, is what kill it. The experience ofeducation, to be alive, must be organic: Hence Whitehead advocates: "*The solution which I am urging,is to eradicate the fatal disconnection of subjects which kills the vitality of our modern curriculum*".There are only the actions of experiencing and communicating their experience. Good teachers learn totune in to the rhythms of a group, across generations or across cultures, whether working with childrenor adults. Poor teachers do not.

Many other formulations made by his philosophic architecture either directly or indirectly havebeen the palace of his educational doctrine.

Meaning and aims of Education

According to Whitehead, education is the art of the utilization of knowledge. His whole idea ofeducation lies in the process and methods of educating the pupil. He has observed, "Education is theguidance of the individual towards a comprehension of complete achievement of varied activity expressingthe potential of that living creative in the face of its environment." The best formula for an educationfor life is that there should be a happy blending of abstract thought and concrete action. There arethree foundations of the educational philosophy of Whitehead. These are the concepts of God, Reason and Civilization. The concept of God has vital connections with the theme of religious education. Theconcept of Reason is integrally connected with the problems of mathematical curriculum and the teachingof Science and Technology. Five fold values of civilization - truth, beauty, adventure, art and peace -have great bearing on education.

Education and Values

Whitehead has observed that without a comprehensive sense of value, life degenerates into thestatic passivity of lower type a existence. Only a deep regard for value can import that vision ofgreatness, which is the foundation of moral life. Only a sense of attainment of something great in lifecan prevent a man from stooping low or from compromising with the powers of evil. It is essential thateducation should inculcate this sense of value in the young.

Curriculum

Whitehead states, "Primarily it is the schools and not the scholars which should be inspected."Each school should grant its own learning certificates, based on its own curriculum. The standards ofthese schools should be sampled and corrected. But the first requisite for educational reform is theschool as a unit, with its approved curriculum based on its own needs, and evolved by its own staff.If we fail to secure that, we simply fall from one formalism into another, from one dung-hill of inertides into another.

Methods of teaching

Whitehead is immensely critical of "horrible burden of inert ideas". He has issued the followingeducational commandments:

(a) Do not teach too many subjects at a time.

(b) What you teach, teach thoroughly and finally at reflective level.

(c) Do not teach dull facts and dates.

(d) Teach slowly, patiently and very carefully.

(e) Spoon-feeding should be avoided, but modeling.

(f) Teachers should keep their imagination alive and teach the subjects with imagination and creativity. Whitehead has remarked, "From the very beginning of his education the child should experience the joy of discovery." He should be as a mentor or coach.

Role of the Teachers

Whitehead has remarked, "The teacher has a double function. It is for him to elicit the enthusiasmby resonance from his own personality and to create the environment of a larger knowledge and aformer purpose."

Concluding Remarks

In discussing the role of Philosophy in education, Whitehead said "Education never reverts toits old position after the shock of a great philosopher." He proves this by his own activity. So Prof.M. P. Verma summarized the contribution of Whitehead in these words: "Whitehead has given us anexhaled idealism in the field of education. He has provided a dignified and exalted conception of life asthe foundation for a theory of education."

5.2.5 : SUMMING UP

The present Unit has attempted to discuss the contributions of great educators. We have seenin detail that the great educators like: Russell and Whitehead's contribution ofeducation in respect of their respective educational philosophy, aims, methods of teaching and curriculum.Perhaps you have, at the end of this Unit, been much impregnated with changing nature of philosophicaldoctrines which are actually ever-evolving.

Question :

Let Us Check Our Progress

Answer in about 60 words

1. State the educational philosophy of Whitehead.
2. Explain Whitehead's methods of teaching.

5.2.6 : SUGGESTED READINGS

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5.2.7 : ASSIGNMENTS

1. Explain the main educational ideas of Whitehead.

2. Give the views of Russell on different aspects of education. To what extent do you agree with these?

3. Make a critical estimate of Bertrand Russell as an Educational Philosopher.

4. Estimate the contributions of A. N. Whitehead in Modern philosophy of education and statethe influence of his ideas on contemporary educational thoughts.

POST GRADUATE DEGREE PROGRAMME (CBCS)

in

E D U C A T I O N

SEMESTER-I

EDC-02

Educational Psychology-1

Self-Learning Material

DIRECTORATE OF OPEN & DISTANCE LEARNING

UNIVERSITY OF KALYANI

KALYANI-741235, WEST BENGAL

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	Unit-2: Cognitive School of Psychology. 2.1: Basic concept and tenets of Cognitivism. 2.2: Educational contributions of Cognitivism.	1
	Unit–3: Psychoanalysis School of Psychology. 3.1: Basic concept and tenets of Psychoanalysis. 3.2: Educational contributions of Psychoanalysis.	1
	Unit–4: Gestalt School of Psychology. 4.1: Basic concept and tenets of Gestalt view. 4.2: Educational contributions of Gestalt school of Psychology.	1
	Unit-5: Humanistic School of Psychology. 5.1: Basic concept and tenets of Humanism. 5.2: Educational contributions of Humanism.	1
Block-2 Growth and Development	**Unit-1: Introduction to Growth and Development** 1.1: Concept of Growth and Development. 1.2: Concept of Maturation. 1.3: Differences among Growth, Development and Maturation. 1.4: Stages of Development.	1
	Unit-2: Different Developmental Aspects–1 2.1: Physical Development: characteristics and educational programmes. 2.2: Social Development: characteristics and educational programmes. 2.3: Emotional Development: characteristics and educational programmes.	1
	Unit-3: Different Developmental Aspects–2 3.1: Intellectual Development: characteristics and educational programmes. 3.2: Language Development: characteristics and educational programmes. 3.3: Moral Development: characteristics and educational programmes.	1

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	Unit-2: Stress and its Management 2.1: Concept of stress and its Management. 2.2: Test anxiety: concept, Nature and Management. 2.3: Conflicts and Complexes. 2.4: Frustration and anxiety. 2.5: Adjustment mechanisms.	1
Block-4 Learning	**Unit-1: Learning** 1.1: Concepts and Nature of Learning. 1.2: Types of Learning. 1.3: Influencing Factors of Learning–Attention and Interest, Maturation and Motivation, Remembering and Forgetting. 1.4: Information Processing Model.	1
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Message

"Education is the most powerful weapon which you can use to change the world."

—Nelson Mandela

In today's world, it simply is not enough to just earn a bachelor's degree. The Masters' Degree in Education is a respected post graduate qualification, enabling you to specialise academically in Education, or further your career in Education or another career of your choice.

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4. To prepare administrators and supervisors for schools and for positions of responsibility in the Education Department engaged in Educational Research and Educational Planning.
5. To prepare personnel for various educational services.

"Education is the manifestation of perfection already in man"

—Swami Vivekananda

Director
Directorate of Open and Distance Learning
University of Kalyani

EDC – 02

EDUCATIONAL PSYCHOLOGY - 1

Block – 1

Schools of Psychology

Unit - 1

Behavioural School of Psychology

CONTENT STRUCTURE:

1.1.1 : Introduction

1.1.2 : Learning Objectives

1.1.3 : Behaviourism

1.1.4 : Basic tenets

1.1.5 : Critical analysis of Behaviouristic School of Psychology

1.1.6 : Educational contributions

1.1.7 : Let us Sum up

1.1.8 : Assignment

1.1.9 : Suggested Readings

1.1.1: INTRODUCTION

According to standard histories, psychology emerged as an independent discipline in 1879, when Wilhelm Wundt (1832–1920) founded a psychology laboratory at the University of Leipzig, Germany. In his work, Wundt assumed that the study of conscious or subjective mental life was the appropriate subject matter for psychology. As part of his study of mental life, Wundt conducted experiments in an area close to what we would now call sensation and perception. Wundt believed that by understanding mental life, we could come to understand the full range of the human condition, including human culture. Many individuals went to Leipzig to study the "new psychology" with Wundt and then went on to start programs at other universities. Among those who studied at Leipzig was the Englishman E. B. Titchener (1867– 1927), who emigrated to the United States and started his own psychology program at Cornell University in Ithaca, New York, in 1892. Titchener called his approach "structuralism."

Following Wundt, Titchener assumed that the appropriate subject matter for psychology was conscious, subjective mental life. For Titchener, the elements of mental life were our sensations, images, and feelings. These elements were to be studied by carefully drawing inferences from participants' introspective reports and reaction times.

Accordingly, an alternative to structuralism emerged in the late 1800s and early 1900s in the United States called "functionalism." Functionalists employed some of the same research methods as had structuralists but emphasized the function of conscious mental phenomena, such as how they aided adaptation. For example, functionalists might use reaction times to study how children's conscious mental phenomena developed over time, so that educational practices could be properly tailored to their development.

Two difficulties that arose in connection with both structuralism and functionalism were the lack of reliability and the lack of agreement. Beginning in the second decade of the 20th century, John B. Watson (1878–1958) argued ferociously against both structuralism and functionalism. In a now classic article, Watson (1913) asserted that neither was effective as a science and that the time had come for psychology to take its place as a legitimate natural science. It could do so by discarding its long-standing concern with conscious mental functioning as a subject matter and introspection as a method. In Watson's view, mental life as traditionally conceived simply did not exist. Rather, psychology should embrace behaviour as its subject matter and rely on experimental observation of that subject matter as its method. He called his viewpoint behaviourism. In this Unit, we shall extend the discussion of behaviourism in greater detail.

1.1.2: LEARNING OBJECTIVES

After studying the Unit, you will be able to –

- Understand about the nature of behavioural school of psychology.
- Know the basic assumptions of behaviourism.
- Critically explain the behavioural school.
- Illustrate the educational significances of Behavioural School.

1.1.3: BEHAVIOURISM

In behaviouristic school overt behaviour does matter for analysing human behaviour than their inner feeling expressed by J.B.Watson by 1913.By emphasizing observability, it avoided problems inherent in introspective reports, namely, the lack of reliability and the lack of agreement. The principal unit of analysis for Watson was the "habit," defined as the coordinated and consistent act that develops in a given situation through repetition, rather than some supposed phenomenon from mental life. He applied his analysis to everything from human emotional responses to language. Today we call Watson's viewpoint classical S–R behaviourism. Classical behaviourism may be said to represent

the first phase of the "behavioural revolution." They also stressed the importance of the environment in shaping an individual's behaviour. They chiefly looked for connections between observable behaviour and stimuli from the environment. This **early behaviourism** was greatly influenced by the work of the Russian physiologist Ivan P. Pavlov and his famous experiments on 'conditioning' which is regarded as 'classical conditioning'.At early phase, E.L.Thorndike whom you have surely acquainted as the 'father of Educational Psychology', also helped behaviourism blossomed with his thoughts and experiments on 'connectionism'.

After the introduction of 'operant conditioning' by B. F. Skinner during the **late behaviourism** started almost in 1930s. In addition to Watson, Pavlov, Skinner and Thorndike, the list included, among others, E. C. Tolman, C. L. Hull, E. R. Guthrie and Benjamin Bloom as neo-behaviourists. In this period (Neo-behaviourism), behaviourists claimed that

(a) the base of psychology was composed of studies about learning,

(b) behaviours could be explained by principles of conditioning and

(c) psychology had to comply with the principle of functionalism and that a concept that could not be defined functionally could not studied, either

The latter maestros contributed during the later phase of this school of psychology by their different logistics like 'purposive- / cognitive- behaviourism' (Tolman, Bloom), 'deductive behaviourism' (Hull), and 'empirical behaviourism' (Guthrie). However, till date, the most prominent and saluting figure in the world of behaviourism from the perspective of educational psychology is Skinner and his radical-inductive behaviourism. In a word, behaviourism causes a paradigm shift of psychology from mentalism to behaviouralism.

Tolman	**Purposive- / cognitive- behaviourism**
Guthrie	**Empirical behaviourism**
Hull	**Deductive behaviourism**
Skinner	**Radical-inductive behaviourism**

The third phase is the period that has been lasting since 1960 and it is called as new-new-behaviourism or social behaviourism. The pioneers of this phase are **Albert Bandura** and **Julian Rotter**. Cognitive elements were added to behaviourism in this period. Behaviourists of this period think that it is not true for behaviourism to deny mental and cognitive processes. Even Bandura named his theory social behaviourism first and then replaced this name with social-cognitive theory while Rotter called his theory social learning theory.

To have a general look at behaviourists, there are two kinds of behaviourists:

1. Methodological Behaviourist and
2. Radical Behaviourist.

While Bandura and Rotter are included in the group of methodological behaviourist, Watson and Skinner are included in the group of radical behaviourists. While radical behaviourists believe that psychology should study just the observable behaviours and environmental processes, methodological behaviourists think that cognitive processes can also be studied, but methods of behaviourist approach should be used. (Schultz and Schultz, 2007).

behaviourism deals with behaviour rather than the mind, it holds that behaviour should be explained without directly referring to mental events or processes. At first glance, this statement seems reasonably straightforward. However, closer inspection indicates it is actually somewhat ambiguous. What needs to be clarified is why it holds that behaviour should be explained without directly referring to mental processes.

1.1.4: BASIC TENETS

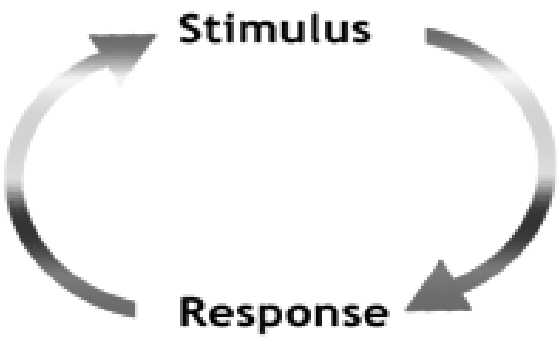
According to this psychology, learning is a relatively permanent change in behaviour due to experience. These theories help us understand 'how do we learn'. Thus, we should get acquainted with the basic assumptions of behavioural theories of learning. These basic assumptions are as follows:

- **Parsimony**: The most fundamental of the basic principles in behaviourism is the concept of parsimony. Sometimes called 'Occam's razor' after the English philosopher who fi rst proposed it, **parsimony** favours seeking the simplest possible explanation for any event.

- **Equipotentiality :** According to behavioural psychologist, the humans and animals are equivalent in form and function for the most part.

Depending on this principle, behaviourists try to explain human behaviour by means of the studies carried out with animals. Of course, there are a lot of reasons (such as being reinforced and raised easily), but the most important reason is explained by Tolman in that way: "Let's watch what mice live in cages, these animals cannot go out at night while a researcher plans to carry out an experiment. … They also don't have a conflict of class or race and they avoid politics, economics and psychological notices."

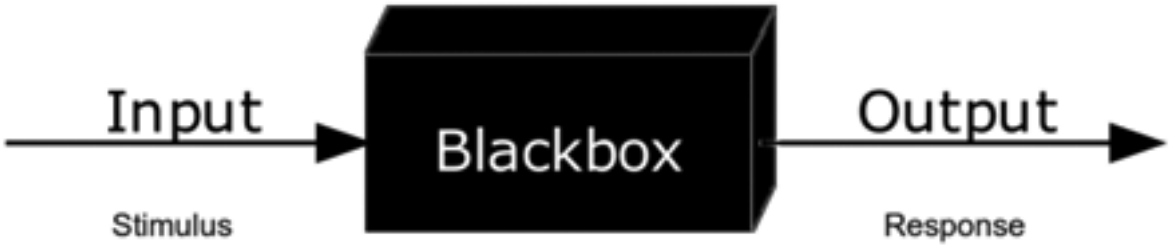
- **S – R focus :** The most objective method for determining learning processes is an investigation of the stimulus (S) and response (R) in each learning situation.Principles of learning are based on the connection between stimulus and reaction.



- **Black Box :** According to behaviourism, the inner cognitive Functions are not valid points for study. Therefore**,** internal operations are beyond the scope of behavioural research.

Most behaviourists believe that people's qualities such as feeling, idea, motivation cannot be observed or measured directly and so they

cannot be handled and studied scientifically. Organism is a "black box." What goes in (stimulus) and what comes from (reaction) the box is measurable and observable. However, what is going on in the box cannot be understood.



- **Tabula Rasa:** we are a blank slate at birth (minus basic reflexes). All behaviour is learned through interaction with the environment.

Like John Locke's understanding of human mind, human is like a blank sheet from birth. The environment shapes it. (Mind is not a term used by most of the behaviourists.)

For behaviour analysts, behaviourism is the philoso-phy of science underlying the science of behaviour. It takes behaviour as a subject matter in its own right, and applies the principles and methods of other natural sciences to develop theories and explana-tions.

- **Conditioning: behaviourists faith that learning is actually conditioning.**Conditioning occurs in a way that an organism matches a certain stimulus around with a certain reaction. When a reaction is associated with a stimulus apart from a stimulus that naturally moves itself, it is said to be conditioned.
- **Research Method:**According to behaviourism, laboratory research is the best method to discover true learning principles.

It is to be remembered that neo-behaviourists were not so much conservative like Watsonians regarding the above assumptions.

1.1.5 CRITICISMS OF BEHAVIORISM

Behaviorism can be critiqued as an overly deterministic view of human behaviour—by ignoring the internal psychological and mental processes, behaviorism oversimplifies the complexity of human behaviour. Some would even argue that the strict nature of radical behaviorism essentially defines human beings as mechanisms without free will.

The behaviourist approach has also been criticized for its inability to account for learning or changes in behaviour that occur in the absence of environmental input; such occurrences signal the presence of an internal psychological or mental process.

Finally, research by ethologists has shown that the principles of conditioning are not universal, countering the behaviourist claim of equipotentiality across conditioning principles.

Behaviorism was developed as a counter to the introspective approach that relied primarily, if not entirely, on internal, self-reflection on conscious, mental activity. While radical behaviorism may

be quite limited in its explanatory power, nonetheless, it served an important role in allowing psychology to develop a scientific pursuit of knowledge about human nature and behaviour.

Nevertheless, the link between stimulus and response is not just a simple, direct, cause and effect relationship. Factors beyond the stimulus are involved in determining the response. Actions occur based on purpose, and purpose is determined by the mind of the subject. Thus, a more complete understanding of human behaviour would need to include both the external actions of the body and the inner life of the mind.

1.1.6: EDUCATIONAL CONTRIBUTIONS

Behaviourism mainly contributed to the concept of 'learning', and to some extent, to the behaviour of 'learners' so far as Educational Psychology is our concern. We get a number of theories of learning which are worthy to explain learning systematically on the basis of their rigorous experiment based scientific studies.

1. The behaviourist approach emphasizes the study of observable responses, and rejects attempts to study internal processes like thinking.

2. In doing so, behaviourists focus on learning as the primary factor in explaining changes in behaviour. Depending on the type of response, this involves either classical conditioning or operant conditioning.

3. In case of connectionism it contributes a lot for explaining educational aspect of behaviourism. S-R theories clearly explains education is based on stimulus-orientedprocess demanding teacher oriented and situational factors effecting the achievement of learners.

4. For instrumenting knowledge forming habits, proper shaping of learners towards a particular goal of learning is very significant. Besides, classical conditioning is particularly important in understanding how we learn emotional behaviour.

5. Classical conditioning is concerned with how conditioned stimuli come to elicit conditionedresponses – reflex responses which are normally elicited by unconditioned stimuli.

6. Classical conditioning can be applied to a number of aspects of human behaviour, includingemotional responses like fears, and even activity of the immune system.

The behaviourist approach emphasizes the role of environmental stimuli in determining the way we act. In large measure, this means focusing on learning– changes in behaviour which occur as the result of experience.

7. Operant conditioning is concerned with how the probability of a voluntary 'operant'response changes as a function of the environmental consequences (reinforcer) which followthe response.This process of reinforcement can be analysed in terms of the type of reinforcer, the contingencyof reinforcement and the schedule of reinforcement.

1.1.7: LET US SUM UP:

It was introduced by J. B. Watson and his followers with the belief that observable behaviour, not inner experience, is the only reliable source of information. Behaviourism is a learning theory that only focuses on objectively observable behaviours and discounts any independent activities of the mind.

According to this psychology, learning is a relatively permanent change in behaviour due to experience. Behaviour theorists define learning as nothing more than the acquisition of new behaviour based on environmental conditions. These theories help us understand 'how do we learn'.

Behaviourism is a worldview that assumes a learner is essentially passive, responding to environmental stimuli. The learner starts off as a clean slate (i.e. tabula rasa) and behaviour is shaped through positive reinforcement or negative reinforcement. It does not attempt to account for cognitive processes. It ignores consciousness, feelings, and states of mind.

The oldest and the longest approach is emerged from behaviourism which propagates a strict S-R psychology. Based on their orthodox concepts of observable behaviour and principles of conditioning they have made several contributions to nature of learning and instruction, including systems for specifying learning objectives, mastery learning techniques and class management systems.

Questions

We've tried to understand the educational contributions of 'Behavioural Learning Theories' on the basis of 'behaviourism'. Let us review the topic by self-questioning —

Question :

Let Us Check Our Progress

1. What is behaviourism? Why is it a strict S - R psychology?
2. Point out some name of psychologist who are known as the supporter of behaviourism.
3. Point out any one major educational contribution under each theorist.

1.1.8: ASSIGNMENTS

1. Discuss any four major assumptions of behavioural school.
2. Briefly explain the educational contributions of behaviourism.
3. Critically Evaluate the Behavioural School of Psychology.

1.1.9: SUGGESTED READINGS

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Block – 1

Unit - 2

Gestalt School of Psychology

CONTENT STRUCTURE:

1.2.1 : Introduction

1.2.2 : Learning Objectives

1.2.3 : Gestalt school of Psychology

1.2.4 : Gestalt Theories by Fundamental Psychologists

1.2.5 : Basic talents of Gestalt Psychology

1.2.6 : Some Important ideas of Gestalt School.

1.2.7 : Criticism of Gestalt Theory

1.2.8 : Educational Contributions of Gestalt school of Psychology

1.2.9 : Let us Sum up

1.2.10 : Assignment

1.2.11 : Suggested Readings

Questions for checking progress

1.2.1: INTRODUCTION:

The second major family of contemporary learning theories is Gestalt-Field psychology, also called cognitive-field, which originated in Germany during the early part of 20th century. In subsequent years other names such as organismic, field phenomenological and cognitive field psychology have evolved and become associated with gestalt-field psychology. Gestalt psychology emerged as a reaction to mentalistic concepts advocated by Herbart and other traditional psychologists on one side and the molecular or atomistic approach to understanding of human behaviour as propounded by Watson, Thorndike, and others on the other. Wertheimer and other gestates vehemently criticized the behaviouristic view that everything we see or think is an assemblage of tiny pieces like those of jigsaw puzzles. Instead they advocated that we see objects as wholes. They further advocated that our perception is meaningful when we perceive them as wholes rather than mere accumulation of sensations, images, or ideas. We learn not by associating bits of experiences but by forming new gestalts.

1.2.2: LEARNING OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept of Gestalt psychology;
- Elaborate the basic tenants of Gestalt view;
- understand the different laws of perception and draw out their relationship with learning;
- Explain the educational contributions of Gestalt school.

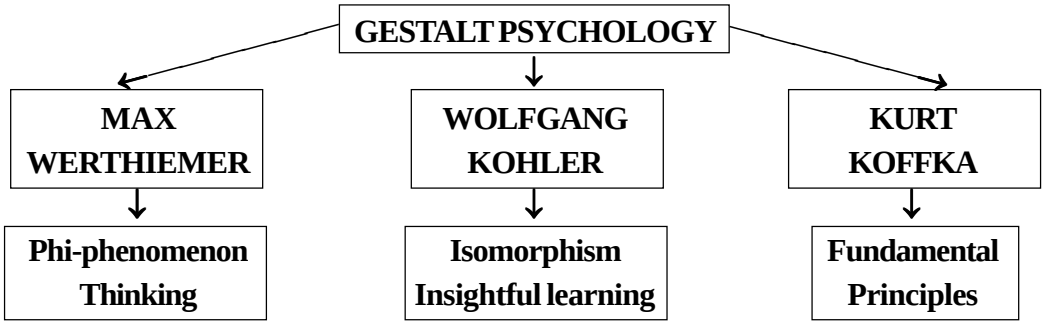
1.2.3 : GESTALT SCHOOLOF PSYCHOLOGY

Just when behaviourism was emerging in America, a small group of young psychologists in Germany started on a line of thought that revolutionized their conceptions of the aim and method of psychology, and that gave rise to one of the most vigorous of the present-day schools. Though of the same age as behaviourism, this school has only gradually become known on this side of the water, and appears to us as the youngest of the schools. This group used the word "Gestalt" as its slogan, and is: called the Gestalt school. "Gestalt" is a common German word, meaning "shape" or "form." Often "pattern" conveys the idea. For psychological use, "configuration" has been suggested as an English equivalent, and the Gestalt psychologists are sometimes called the "configurationists."

This School of thought was founded about 1912 by Max Wertheimer, a German psychologist. Wertheimer was highly influenced by the views of great philosopher Immanuel Kant on how we perceive the world, Wertheimer started experiments on apparent motion known as 'phi-phenomenon'. During the 1930's, Wertheimer and two colleagues, Kurt Koffka and Wolfgang Kohler, took the Gestalt movement to the United States. Gestalt psychologists believed that human beings and other animals perceive the external world as an organized pattern, not as individual sensations. For example, a film consists of thousands of individual still pictures, but we see what looks like smooth, continuous movement. The German word Gestalt means pattern, form, or shape. It technically signifies "unified whole" or "configuration". Unlike the behaviourists, the Gestaltists believed that behaviour should be studied as an organized pattern rather than as separate incidents of stimulus and response. The familiar saying that "The whole is greater than the sum of its parts" expresses an important principle of the Gestalt movement. In the later years, they conducted so many experiments in order to explain the nature of perceptual field of human beings. Consequently, a good number of laws and principles had been generated with such scientific values that had the potentials to pave the solid ground of a new stream of psychology called cognitive psychology.

Max Wertheimer as a founder of Gestalt psychology started a series of experiments on phi-phenomenon. Later, with Koffka and Kohler, it gradually extended its research in the broader field of cognition like perception, thinking and learning. The essential point of gestalt is that in perception the whole is different from the sum of its parts.

Have a look on the Gestalt psychology and its contributors —



1.2.4: GESTALT THEORIES BY FUNDAMENTAL PSYCHOLOGISTS

These psychologists were the most important representatives of Gestalt Theory. Their ideas continue to be revised and inspire new theories today.

Sl. No.	Psychologists	Contributions
1.	Wolfgang Köhler	Founded this movement with Koffka and Wertheimer. His main contribution was learning by discovery and maintains that this process is active and dynamic.He showed that chimpanzees try to solve problems by trial and error. After several failures in tasks such as reaching for food, the primates with whom he experimented seemed to reflect on the solution until they found it. In fact, they were then able to extrapolate it to similar new situations.
2.	**Max Wertheimer**	The phenomena phi or apparent movement is its most revolutionary discovery. It consists in the perceiving movement from the succession of different fragmented images. For example, it happens when we perceive the succession of film frames as if it were a real movement.
3.	**Kurt Koffka**	His contributions were elementary in several fields. He studied memory, learning, perception and also applied Gestalt to fields such as child psychology.It emphasized the need to consider mental processes from a holistic point of view. He also helped Wertheimer in his research on the apparent movement by becoming involved as a subject.
4.	**Kurt Lewin**	He was not one of the founders of Gestalt Theory. However, he was a prominent social psychologist who brought the ideas of Gestalt to this area. His study was more focused on motivation and psychosocial intervention using Gestalt.

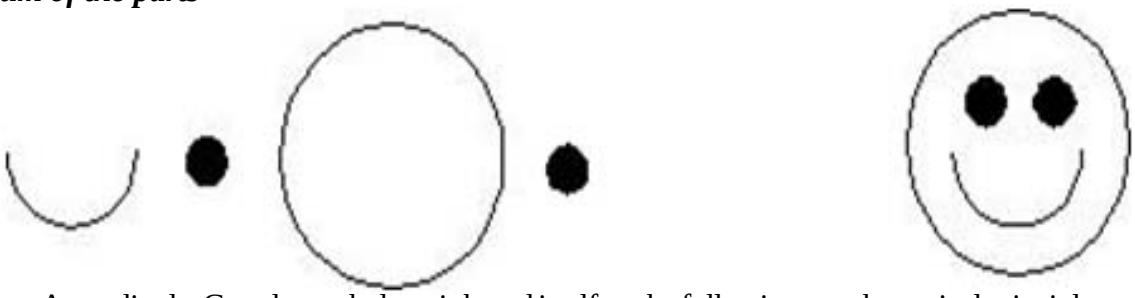
1.2.5: BASIC TENANTS OF GESTALT PSYCHOLOGY:

This psychological view broke with the orthodox psychology of its time. It rebelled specifically against Wundt, and more generally against associationism, that system of psychology which had come down from the seventeenth and eighteenth centuries and which largely, though by no means completely, dominated psychological theory in the nineteenth century. The basic assumptions of this school are being discussed below:

i) Gestalt Psychology Stresses Organized Wholes:

The Gestalt psychologist approaches this matter with the idea that the face must be taken as a whole. Of course, to get any results, he has to consider something besides the mere totality of the face; he has to consider parts in a way; but he considers them in relation to the total.

If you follow the figure drawn below you will understand how ***the whole is different from the sum of the parts*** —



Accordingly, Gestalt psychology is based itself on the following two theoretical principles —

- Principle of totality - the conscious experience must be considered globally because the nature of mind demands that each component be considered as part of a system of dynamic relationships.
- Principle of psychophysical isomorphism - a correlation exits between conscious experience and cerebral activity.

ii) Gestalt Studies of Sense Perception:

The Gestalt psychologists have gone on to the view that much of our experience which had been regarded as built upon sensation by higher mental processes is really included in sensation. Consider the apparent size of seen objects.

For example, if a man moves away from you from a distance of ten feet to a distance of twenty feet, his optical image upon the retina diminishes to half its first dimensions, yet he looks about as large as before.

iii) Against the stimulus-response conception:

Gestalt psychology dislikes the stimulus-response conception. It objects, first of all, to the idea that behaviour can properly be analysed into stimulus-response units. This objection is in accordance with its general objection to atomism in psychology.

iv) Insight is the essential part of Learning:

According to Gestalt Psychology, Insight is the very Essential in Learning. Gestalt psychologists fully as eager to scrap the older—though not really old—descriptions of behaviour as to leave behind the older way of describing conscious experience. Nowhere are they more radically at issue with previously accepted doctrines than on the theory of learning.

Near about 100 years ago, Wertheimer published his paper on phi motion—perception of pure motion, without object motion—which many consider to be the beginning of Gestalt psychology as an important school of thought.

1.2.6: SOME IMPORTANT IDEAS OF GESTALT SCHOOL

Based on the above principles, the following methodological ideas are defined:

- **Phi-Phenomenon Thinking:**

  The discovery of the phi phenomenon is attributed to **Max Wertheimer**. The **phi phenomenon** is a perceptual illusion in which a disembodied perception of motion is produced by a succession of still images. The phi-phenomenon is when we see a row of lights flash in sequence, like on a theatre marquis, and instead of seeing a static light going on and off we perceive the light as moving.

- **Isomorphism Insightful Learning:**

The term Isomorphism literally means sameness (iso) of form (morphism). In Gestaltpsychology, Isomorphism is the idea that perception and the underlying physiological representation are similar because of related Gestalt qualities.

One aspect of Gestalt is *phenomenology*, which is the study of how people organize learning by looking at their lived experiences and consciousness. Learning happens best when the instruction is related to their real life experiences. The human brain has the ability to make a map of the stimuli caused by these life experiences. This process of mapping is called "isomorphism."

- **Gestalt Laws of Perception**

Gestalt psychology, in the early years, was primarily concerned with the study of perception. Wertheimer 's discovery of the Phi Phenomenon established certain principles related to perception. With the toy stroboscope, Wertheimer noted "... That two slits in a screen lighted up a fraction of a second apart, produced the illusion of movement." This is the same principle upon which the motion pictures of today are produced. A series of still pictures are flashed in rapid succession, at a constant rate of speed upon a screen. Of course, no movement takes place, only the illusion of motion is given. Watson explains the difference between the PHI Phenomenon theory and the existing theories of perception that were popular in Wertheimer 's day:

Wertheimer argued that the apparent movement generated in his experiment had no counterpart in the sensory elements. Local sensory stimulation cannot be responsible for the actually perceived

phenomenon. Hence, a general re-evaluation of the-basic nature of perception seemed necessary to him.

Gestalt basic grouping principles

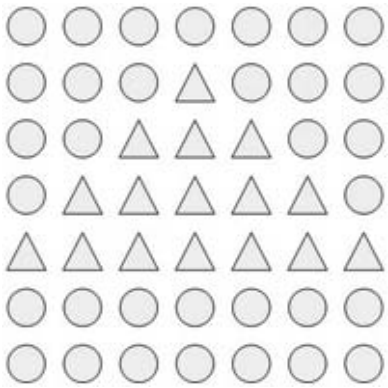
Gestalt theory starts with the assumption of active grouping laws in visual perception. These groups are identifiable with subsets of the retina. We shall talk in the following of points or groups of points which we identify with spatial parts of the planar rough percept. In image analysis we shall identify them as well with the points of the digital image. Whenever points (or previously formed groups) have one or several characteristics in common, they get grouped and form a new larger visual object, a gestalt.Gestalt psychologists developed five laws that govern human perception:

- **Law of Proximity** - Spatial or temporal proximity of elements may induce the mind to perceive a collective or totality. Elements that are closer together will be perceived as a coherent object.



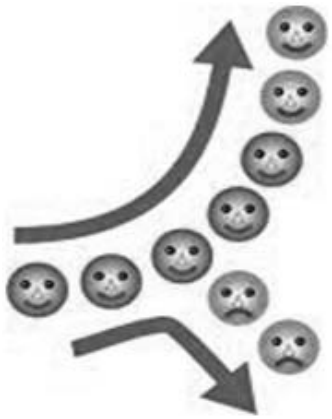
In the pictures left ones appears to be three horizontal rows, while on the right, the grouping appears to be columns.

- **Law of Similarity** - According to Fisher and Smith-Gratto (1998–99) similar objects will be counted as the same group and this technique can be used to draw a viewer's attention. The principle of similarity states that elements with similar properties (e.g., brightness, contrast, colour, texture) are more likely to group than elements that differ on these dimensions.



The human eye tends to build a relationship between similar elements within a design.There seems to be a triangle in the square. It states that the law of similarity is the tendency to perceptually group similar items and objects together. Gestalt psychology focuses on how we perceive individual items as a whole.

- Law of Good Continuation - A third Gestalt principle is good continuity: We prefer to see contours based on smooth continuity instead of abrupt changes of direction. humans tend to perceive things in good form.We prefer to ignore the abrupt changes in an image we are seeing.



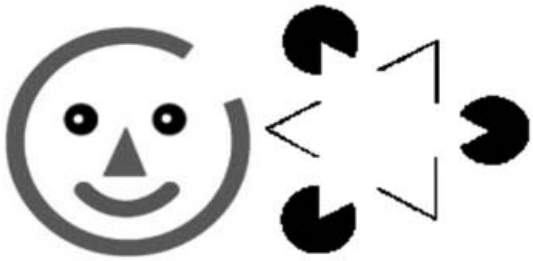
Generally speaking, we pay more attention to the characteristics of a stimulus that allow us to perceive a smooth continuity.

For better understanding, here is a screenshot of Google Maps walking directions. Rather than a series of blue dots, we perceive this as a single line.

We also understand we are to physically walk in the direction of this "line". Nothing in the interface explicitly tells us that the dotted line indicates direction. A small icon of a person walking and the blue dots create the idea of momentum and direction.People tend to draw a



good continuous line. Continuation is the eye's instinctive action to follow a direction derived from the visual field (Fultz 1999).



- **Law of Closure -** humans tend to enclose a space by completing a contour and ignoring gaps in the figure

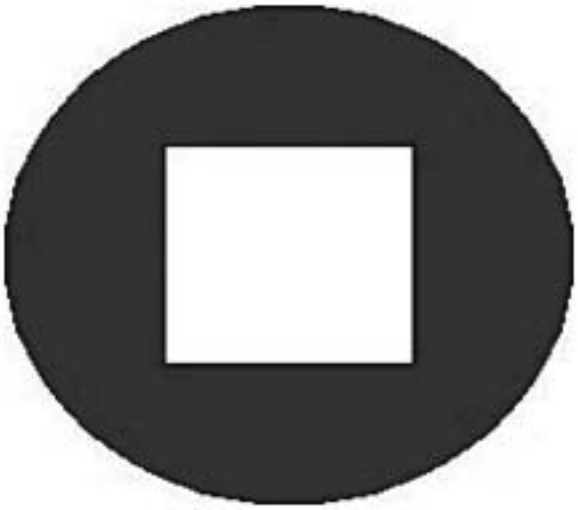
We tend to see complete figures even when part of the information is missing. Our minds react to



patterns that are familiar, even though we often receive incomplete information. This is a survival instinct, allowing us to complete the form of a predator even with incomplete information

- **Law of Prägnanz** - The fundamental core of gestalt perception is the law of prägnanz (German for pithiness) which says that we tend to order our experience in a manner that is regular, orderly, symmetric and simple. In attempts to discover refinements of the law of prägnanz. a stimulus will be organized into as good a figure as possible. Here, good means symmetrical, simple, and regular. This is the most basic rule of Gestalt.

Fultz (1999) defined prägnanz (good form) thus: "A stimulus will be organized into as good a figure as possible." The above figure appears to the eye as a square overlapping triangle, not a combination of several complicated shapes.



- **Law of Figure/Ground** - a stimulus will be perceived as separate from its ground.Figure–ground organization is a type of perceptual grouping which is a vital necessity for recognizing objects through vision. In Gestaltpsychology it is known as identifying a *figure* from the back*ground*.

The above figure appears to the eye as a square inside a circle, or as a donut shaped circle with a square hole.

(all figures are collected from various websites)

Above discussed laws not only apply to images, but to thought processes, memories, and our understanding of time.

Regarding thinking and learning, Gestalt psychology considered two concepts —

- Productive thinking - Productive thinking is insight-based reasoning. Wertheimer argued that only insightful reasoning could bring true understanding of conceptual problems and relationships. when a problem is solved through insight. Productive thinking involves producing a new organization of a problem's elements, as in the insight solutions of Koehler's chimpanzees.

Gestalt psychology is an attempt to understand the laws behind the ability to acquire and maintain meaningful perceptions in an apparently chaotic world. The central principle of gestalt psychology is that the mind forms a global whole with self-organizing tendencies.

- Reproductive thinking - Reproductive thinking applies past solutions to new problems. Reproductive thinking is associated with repetition, conditioning, habits or familiar intellectual territory.

1.2.7: CRITICISM OF GESTALT THEORY:

Their ideas are still successful, but they are not spared from critics. Some experts consider their perceptual organizational approaches to be vague and ambiguous. In addition, other professionals claim that their experiments were not scientific enough.

On the other hand, Gestalt therapy is blamed for its individualism. They propose that each person finds his or her own path in isolation rather than deepening his or her social side. This can lead to selfish behaviour. However, its followers claim that we need to discover ourselves first in order to connect with others afterward.

There are different approaches to psychology and we cannot determine who is right. Even so, it is possible to combine different perspectives in order to elaborate more complete and integrative explanations.

1.2.8: EDUCATIONAL IMPLICATUINS OF GESTALT THEORY

According to gestalt psychology, an individual has insight into a learning situation to the extent that he is able to understand the situation as a whole. A solution to a problem is an example of insight that results from integration of all the mental processes. All the higher learning takes place by this method. The concept of gestalt psychology has contributed in education from various aspects, some of those are as follows:

1. ***From Whole to Parts:*** Insightful learning actually advocates comprehensive learning. Without understanding higher type of learning is not possible, and understanding is only possible if the learner seeks out the organized whole pattern among several relations of the parts. The teacher should present the subject matter as a whole to facilitate insight learning.

2. ***Integrated Approach:*** According to Gestalts, the most general principle of learning is 'Pragnanz' or the goal-directed tendency to restore the equilibrium. Similarly, all principles of perception are active in learning. While planning curriculum, gestalt principles should be given due consideration. A particular subject should not be treated as the mere collection of isolated facts. It should be closely integrated into a whole.

3. ***Importance of Motivation:*** In Gestalt learning, motivation and goal are synonymous. To develop insight and thereby to reach the goal, the learner needs one thing, i.e., intrinsic motivation. For higher mental activities like problem-solving, intrinsic motivation is the essential condition. Hence, the teacher should arouse the child's curiosity, interest and motivation. He should gain full attention of the whole class before teaching.

4. ***Emphasis on Understanding:*** It has made learning an intelligent task requiring mental abilities than a stimulus - response association. So the learner must be given opportunities for using his mental abilities.

5. ***Problem Solving Approach:*** This theory emphasis that as the learner is able to solve problems by his insight, meaningful learning, learning by understanding, reasoning, etc. must be encouraged in the school.

6. ***Checking of Previous Experiences:*** As insight depends upon the previous experiences of the learner, the teacher must check the previous experiences of the child and relate them with the new learning situation.

Gestalt learning means that learning is concerned with the whole individual and arises from the interaction of an individual with his situations or environment. Through this interaction emerge new forms of perception, imagination and ideas which altogether constitute insight. Theschool has made Effective contributions to the study of learning, nature of thinking, and in the field of perception.

7. ***Goal Orientation***: As learning is a purposeful and goal oriented task, the learner has to be well acquainted with these objectives. He should be fully familiar with the goals and purposes of every task.

Above discussion reveals the fact that Gestalt psychology contributes to the nature and conditions of **effective learning and productive thinking.**Complex problems require higher learning and solutions are reached only by application of insight. All new ideas and concepts, inventions and discoveries are the result of insightful learning.

Questions

Let us review the topic by self questioning —

Let Us Check Our Progress

1. Who are the Gestalt psychologists?
2. What do you mean by the term 'Gestalt'?
3. What is isomorphism?
4. What is Figure-ground?
5. What is Pragnanz?
6. Point out the main areas of education where the Gestalt psychology has contributed to.
7. Explain the term'perception' according to Gestalt view.

1.2.9: LET US SUM UP

Gestalt psychology began in Germany as a reaction to the behaviourism. Max Wertheimer as a founder of Gestalt psychology started a series of experiments on phi-phenomenon. Later, with Koffka and Kohler, it gradually extended its research in the broader field of cognition like perception, thinking and learning. The essential point of gestalt is that in perception the whole is different from the sum of its parts.

There were a number of thinkers who had an influence on Gestalt psychology. Some of the best-known Gestalt psychologists included Wolfgang Köhler, Max Wertheimer, Kurt Koffka etc.

This belief that the whole is greater than the sum of the individual parts led to the discovery of several different phenomena that occur during perception.

Since learning is interrelated with perception, the laws of perception apply to learning. According to Gestalts, the most general principle of learning is 'Pragnanz' or the goal-directed tendency to restore the equilibrium. Similarly, all principles of perception are active in learning.

Gestalt psychology also helped introduce the idea that human perception is not just about seeing what is actually present in the world around us. Much of what we perceive is heavily influenced by our motivations and expectations.

1.2.10: ASSIGNMENTS

1. Describe the various laws of perceptions according to Gestalt School.
2. Briefly explain the educational contributions of Gestalt view.
3. Discuss the basic principles of Gestalt Psychology.
4. Critically Evaluate the Gestalt School of Psychology.

1.1.10: SUGGESTED READINGS

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5. Murphy, G. (1949) : Historical Introduction to Modern Psychology, (Rev.ed.), N.Y. Harcourt, Brace.
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Block – 1

Unit - 3

PsychoanalysisSchool of Psychology

CONTENT STRUCTURE:

1.3.1: Introduction

1.3.2 : Learning Objectives

1.3.3 :Psychoanalysis

1.3.4 : Basic Tenets

1.3.5 : Key Ideas In Psychoanalysis:

1.3.6 : Criticism Of Psychoanalysis

1.3.7 : Educational Contributions

1.3.8 : Let Us Sum Up

1.3.9 : Assignments

1.3.10: Suggested Readings

1.3.1: INTRODUCTION

In December of 1908, the Viennese physician Sigmund Freud (1856-1939) received an intriguing invitation from the American psychologist G. Stanley Hall (1844-1924), inviting him to visit Clark University in Worcester, Massachusetts, and deliver a series of lectures describing his novel views about abnormal psychology. Indeed, Hall was just now planning a conference to celebrate the University's 20th anniversary, which he assured Freud would attract "the best American professors and students of psychology and psychiatry," and which was the occasion for the present invitation.

Freud was flattered to receive an invitation from such an eminent representative of the psychological establishment, for he himself was anything but an establishment figure. For more than twenty of his fifty-two years he had been developing an innovative psychological theory and treatment method that he called "psychoanalysis," The core idea at the centre of psychoanalysis is the belief that all people possess unconscious thoughts, feelings, desires, and memories. By bringing the content of the unconscious into conscious awareness, people are then able to experience catharsis and gain insight into their current state of mind. In the present unit we will discuss the basic theme of this psychological school.

1.3.2 : LEARNING OBJECTIVES

By the end of this unit you will be able to, -

- Understand the basic concepts of Psychoanalysis;
- Know the psychic characteristics of man;
- Get ideas about the educational contributions of psychoanalysis.

1.3.3 : PSYCHOANALYSIS

Psychoanalysis is a school of psychology founded by Sigmund Freud. This school of thought emphasized the influence of the unconscious mind on behavior.

Freud believed that the human mind was composed of three elements: the id, the ego, and the superego. The id consists of primal urges while the ego is the component of personality charged with dealing with reality. The superego is the part of personality that holds all of the ideals and values we internalize from our parents and culture. Freud believed that the interaction of these three elements was what led to all of the complex human behaviors.

Freud first used the term psychoanalysis (in French) in 1896. Die Traumdeutung (The Interpretation of Dreams), which Freud saw as his "most significant work", appeared in November 1899. Psychoanalysis was later developed in different directions, mostly by students of Freud such as Alfred Adler and Carl Gustav Jung, and by neo-Freudians such as Erich Fromm, Karen Horney and Harry Stack Sullivan. Freud retained the term psychoanalysis for his own school of thought.

1.3.4 : BASIC TENETS

Some of the Basic Tenets of Psychoanalysis

- The way that people behave is influenced by their unconscious drives
- The development of personality is heavily influenced by the events of early childhood; Freud suggested that personality was largely set in stone by the age of five.
- Bringing information from the unconscious into consciousness can lead to catharsis and allow people to deal with the issue
- People utilize a number of defense mechanisms to protect themselves from information contained in the unconscious
- Emotional and psychological problems such as depression and anxiety are often rooted in conflicts between the conscious and unconscious mind
- A skilled analyst can help bring certain aspects of the unconscious into awareness by using a variety of psychoanalytic strategies such as dream analysis and free association

Important Dates in the History of Psychoanalysis

- 1856 – Sigmund Freud was born
- 1886 – Freud first began providing therapy
- 1892 – Josef Breuer described the case of Anna O to Freud
- 1895 – Anna Freud was born
- 1900 – Sigmund Freud published his book *The Interpretation of Dreams*
- 1896 – Sigmund Freud first coined the term psychoanalysis
- 1907 – The Vienna Psychoanalytic Society was formed
- 1908 – The first international meeting of psychoanalysts was held
- 1909 – Freud made his first and only trip to the United States
- 1913 – Jung broke from Freud and psychoanalysis
- 1936 – The Vienna Psychoanalytic Society was renamed and became the International Psychoanalytic Association
- 1939 – Sigmund Freud died in London following a long battle with mouth cancer

1.3.5 : KEY IDEAS IN PSYCHOANALYSIS

Freud's major discoveries and innovations

Freud's early discoveries led him to some ground breaking new concepts:

• **The Unconscious:** psychic life goes beyond what we are conscious of, also beyond what is preconscious in the sense of what we could become aware of once we tried to think of it. A major part of our mind is unconscious, and this part is only accessible with psychoanalysis.

• **Early childhood experiences** are an amalgam of fantasy and reality; they are characterized by passionate wishes, untamed impulses, and infantile anxieties. For example, hunger stirs a wish to swallow up everything, yet also the fear of being swallowed up by everybody else; the wish to be in control and independent is linked to fears of being manipulated or abandoned; to separate from an important care-taker could lead to remaining exposed, helpless and alone; to love one parent might risk to lose the love of the other. Thus early wishes and fears result in conflicts which, where they cannot be resolved, are repressed and become unconscious.

• **Psychosexual development**: Freud recognized that the progressive maturation of bodily functions centred on the erotogenic zones (mouth, anus, genitals) comes along with pleasures and fears experienced in the relationship with the care-taking objects, and these structure the development of the child's mind.

• **The Oedipus complex** is the core complex of all neuroses. A child of age four to six becomes aware of the sexual nature of the parents' relationship, from which they are excluded. Feelings of jealousy and rivalry arise and have to be sorted out, together with the questions of who is male and who female, who can love and marry whom, how are babies made and born, and what can the child compared to the adult do or not do. The resolution of these challenging questions will shape the character of the adult mind and the super-ego (see below in The Ego, the Id and the Super-Ego).

• **Repression** is the force that keeps unconscious dangerous fantasies related to unresolved portions of childhood conflicts.

• **Dreams are wish-fulfilments**. Most often they express the fulfilment of infantile sexual wishes or fantasies. Since they appear in disguise (as absurd, strange or incoherent scenes) they require analysis to reveal their unconscious meaning. Freud called the interpretation of dreams the royal road to the unconscious.

• **Transference** is the ubiquitous tendency of the human mind to view and identify new situations within the templates of earlier experiences. In psychoanalysis transference occurs when a patient views the analyst like a parental figure, with whom they can re-experience the major infantile conflicts or traumas as if within the original child-parent relationship.

• **Free association** describes the emergence of thoughts, feelings and fantasies when they are uninhibited by restrictions through fear, guilt, and shame (see below in The Core Psychoanalytic Method and Setting).

• **Levels of Personality**: In his early work Freud suggested that mental life consisted of two parts: conscious and unconscious. The conscious portion, like the visible part of an iceberg, is small and insignificant. It presents only the surface; that is, only a superficial glimpse of the total personality. The vast and powerful unconscious—like the portion of the iceberg that exists beneath the water's surface—contains the instincts, those driving forces for all human behaviour. In later writings, Freud revised this simple conscious-unconscious distinction and proposed the id, ego, and superego.

i) The id, which corresponds roughly to Freud's earlier notion of unconscious, is the most primitive and least accessible part of the personality. The id's powerful forces include the sex and aggressive instincts. Freud wrote, "We call it a cauldron full of seething excitations. [The id] knows no judgments of value, no good and evil, no morality" (Freud, 1933, p. 74). Id forces seek immediate satisfaction without regard for the circumstances of reality. They operate according to the pleasure principle, concerned with reducing tension by seeking pleasure and avoiding pain.

Freud's word in German for the id was es, meaning "it," a term suggested by the psychoanalyst Georg Groddeck, who had sent Freud the manuscript of his book called The Book of It (Isbister, 1985). The id contains our basic psychic energy, or libido, and is expressed through the reduction of tension. Increases in libidinal energy result in increased tension. And we then act in an attempt to

reduce this tension to a more tolerable level. However, we must interact with the real world in order to satisfy our needs and maintain a comfortable level of tension. For example, people who are hungry must act to find food if they expect to discharge the tension induced by hunger. Therefore, some functional link between the id's demands and reality must be established.

ii) The ego, serves as the mediator between the id and the circumstances of the external world to facilitate their interaction. The ego represents reason or rationality, in contrast to the unthinking, insistent passions of the id. Freud called the ego ich, which translates into English as "I." He did not like the word ego and rarely used it. Whereas the id craves blindly and is unaware of reality, the ego is aware of reality, manipulates it, and regulates the id accordingly.

The ego follows the reality principle, holding off the id's pleasure-seeking demands until an appropriate object can be found to satisfy the need and reduce the tension. The ego does not exist independently of the id; indeed, the ego derives its power from the id. The ego exists to help the id and is constantly striving to bring about satisfaction of the id's instincts. Freud compared the interaction of ego and id to a rider on a horse. The horse supplies the energy to move the rider along the trail, but the horse's power must be guided or reined in or else the horse may balk and throw the rider. Similarly, the id must be guided and checked or it will overthrow the rational ego.

iii) Super Ego: The third part of Freud's structure of personality, the superego, develops early in life when the child assimilates the rules of conduct taught by parents or caregivers through a system of rewards and punishments. Behaviours that are wrong and bring punishment become part of the child's conscience, one part of the superego. Behaviours that are acceptable to the parents or social group and that bring rewards become part of the ego-ideal, the other part of the superego. Thus, childhood behaviour is initially controlled by parental actions, but once the superego has formed behaviour is determined by self-control.

The superego represents morality. Freud described it as the "advocate of a striving toward perfection—it is, in short, as much as we have been able to grasp psychologically of what is described as the higher side of human life" (Freud, 1933, p. 67). You can see that obviously the superego will be in conflict with the id. Unlike the ego, which attempts to postpone id satisfaction to more appropriate times and places, the superego will attempt to inhibit id satisfaction completely

Some Weaknesses of Psychoanalysis

Psychoanalysis grew in its influence over the course of the early twentieth-century, but it was not without its critics.

- Freud's theories overemphasized the unconscious mind, sex, aggression and childhood experiences.
- Many of the concepts proposed by psychoanalytic theorists are difficult to measure and quantify.

- Most of Freud's ideas were based on case studies and clinical observations rather than empirical, scientific research.

Strengths of Psychoanalysis

Despite its critics, psychoanalysis played an important role in the development of psychology. It influenced our approach to the treatment of mental health issues and continues to exert an influence in psychology to this day.

- While most psychodynamic theories did not rely on experimental research, the methods and theories of psychoanalytic thinking contributed to the development of experimental psychology.
- Many of the theories of personality developed by psychodynamic thinkers are still influential today, including Erikson's theory of psychosocial stages and Freud's psychosexual stage theory.
- Psychoanalysis opened up a new view on mental illness, suggesting that talking about problems with a professional could help relieve symptoms of psychological distress.

1.3.6 : CRITISIGM OF PSYCHOANALYSIS

Freud's methods of collecting data have been the target of considerable criticism. He drew insights and conclusions from the responses of his patients while they were undergoing analysis. Consider the deficiencies of this approach when compared with the experimental method of systematic data collection under controlled conditions of observation used by the other schools of thought.

First, the conditions under which Freud collected data were unsystematic and uncontrolled. He did not make a verbatim transcript of each patient's words but worked from notes made several hours after seeing the patient. "I write them down from memory in the evening after work is done" (quoted in Grubrich-Simitis, 1993, p. 20). Some original data (the patient's words) were surely lost in the time that elapsed because of the vagaries of memory and the possibility of distortions and omissions. Thus, the data consist of only what Freud remembered.

Second, while recalling his patients' words Freud may have reinterpreted them, guided by a desire to find supportive material. He may have recalled and recorded only what he wanted to hear. Of course, it is also possible that Freud's notes were accurate, but the important point is that we cannot be certain because the original data have not survived.

Third, Freud may have inferred, rather than actually heard, the stories of sexual seduction in childhood based on his evaluation of the patient's symptoms. One writer suggested that although Freud claimed that almost all his female patients said they had been seduced by their fathers,Other critics contend that Freud may have used suggestion, or more coercive procedures, to elicit or implant such memories when no actual seduction had occurred.

Fourth, Freud's research was based on a small and unrepresentative sample of people, limited to himself and those who chose to undergo psychoanalysis with him. No more than a dozen or so cases have been detailed in Freud's writings, and most of those patients were young, unmarried, educated, upper-class women. It is difficult to generalize from this limited sample to the general population.

Fifth, there are discrepancies between Freud's notes on the therapy sessions and the published case histories supposedly based on those notes. Researchers have found differences involving the length of the analysis and the sequence of events disclosed during analysis as well as unsubstantiated claims of cures (Eagle, 1988; Mahony, 1986). There is no way to determine whether Freud made these statements deliberately to provide support for his position or whether they resulted from forces in his own unconscious.

1.3.7 : EDUCATIONAL CONTRIBUTIONS

Psycho-analysis has given rise to many movements and practices which have provided a stimulus to new education. Various psychoanalysts have written about the implications of psychoanalytic theory for teaching and learning. In general, the psychoanalysts argue that, in order to be existentially authentic, teaching and learning must involve the teacher and student in all their psychodynamic complexity as emotional and ethical beings.

Freud writes, 'has excited so much interest and aroused so many hopes…… as its use in the theory and practice of education….'

- It has changed the conception of education and intended its aim. Education is no longer considered as restraint to be achieved by external regulatory means such as punishment and rewards.
- The aim of education is the development of the whole personality – the development of intellect as well as emotions for socially desirable purposes.
- Psychoanalysis has laid stress on such psychological incentives as love, use of instincts, permissiveness and leniency and the child's own will or interest. It has thrown light on and explained the variations that we find in the assimilation of various subjects among different children. This means that specific disabilities may be due to affective inhibition among other causes.
- Psychoanalysis has explained the child's resistance to learning in terms of unfavourable environmental conditions, unsympathetic and critical teachers and parents, lack of preparations and emotional blocking caused by anxiety and aggression in the form of phobias or due to inharmonious parent-child or intra-parental relationships.
- Psychoanalysis, thus, brings out the importance or proper environment for the education of children. The environment in the school and in the home should be such as to reduce the chances of

repression and increase the chances of sublimation. It should provide opportunities for spontaneous and creative activities and for all sublimations.

- Psychoanalysis has stressed the significance of play in the education of children. Play along with other natural interests of children should determine the various curricular and co-curricular activities in the school. This emphasis play has given rise to play therapy and play-way as important techniques in the treatment of scholastic and emotional problems.
- Importance of respecting the child's individuality at an early age, of studying the early years of the child, of evaluating the standards of behaviour from a new angle, of recognising the strength of sex-impulse and sex-education are the other contributions of psychoanalysis to education.
- One of the significant contributions, however, is the understanding that psychoanalysis has imparted of 'mal-adjustments' in children's behaviour and delinquencies in adolescence. Emotional conflicts due to defective inter-personal relationships within the family, repression of the child's between the unconscious needs and the demand or reality have been highlighted as important causes without minimising the significance of the inadequate environmental conditions such as the broken home, poor economic situations, bad neighbourhood, inadequate school programmes, lack of proper recreational facilities and others.

To conclude, we can say that much of what is progressive in New Education, can be traced to the influence of psychoanalysis. The notion is expressed that perhaps the most valuable contribution that psychoanalysis can make lies in the field of education, the application of psychoanalytic concepts and understanding to the upbringing of the child, to the education and training of the youth.

Question :

Let Us Check Our Progress

1. Who is Freud?
2. What are its three basic principles?
3. To which field of Educational Psychology Freudian thoughts contribute most?
4. What are the contribution of psychoanalysis school of psychology?

1.3.8 : LET US SUM UP

Freud first used the term psychoanalysis (in French) in 1896. Die Traumdeutung (The Interpretation of Dreams), which Freud saw as his "most significant work", appeared in November 1899.Psychoanalysis Assumptions:

- Psychoanalytic psychologists see psychological problems as rooted in the unconscious mind.
- Manifest symptoms are caused by latent (hidden) disturbances.
- Typical causes include unresolved issues during development.

- Treatment focuses on bringing the repressed conflict to consciousness, where the child can deal with it.

Freud suggested that mental life consisted of two parts: conscious and unconscious. The conscious portion, like the visible part of an iceberg, is small and insignificant. It presents only the surface; that is, only a superficial glimpse of the total personality. The vast and powerful unconscious—like the portion of the iceberg that exists beneath the water's surface—contains the instincts, those driving forces for all human behaviour. In later writings, Freud revised this simple conscious-unconscious distinction and proposed the id, ego, and superego.

Psycho-analysis has given rise to many movements and practices which have provided a stimulus to new education. It has changed the conception of education and intended its aim. The aim of education is the development of the whole personality – the development of intellect as well as emotions for socially desirable purposes. Psychoanalysis, thus, brings out the importance or proper environment for the education of children. Psychoanalysis has stressed the significance of play in the education of children. Play along with other natural interests of children should determine the various curricular and co-curricular activities in the school.

1.3.9 : ASSIGNMENTS

1. Describe the historical development of psychoanalysis relative to the other schools of thought in psychology.
2. In what ways was psychoanalysis influenced by Freud's own childhood experiences and by his own views on sexuality?
3. Describe the psychosexual stages of development.
4. Define repression, instinct, id, ego, and superego.
5. What are the life instincts and the death instinct?

1.3.10: SUGGESTED READINGS

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Block – 1

Unit - 4

CognitiveSchool of Psychology

CONTENT STRUCTURE:

1.4.1: Introduction

1.4.2: Learning Objectives

1.4.3: Psychoanalysis school of Psychology

1.3.4: Gestalt Theories by Fundamental Psychologists

1.3.5 Basic talents of Gestalt Psychology

1.3.6: Some Important ideas of Gestalt School.

1.3.7: Criticism of Gestalt Theory

1.3.8: Educational Contributions of Gestalt school of Psychology

1.3.9: Let us Sum up

1.3.10: Assignment

1.2.11: Suggested Readings

Questions for checking progress

1.3.1: INTRODUCTION:

The word 'cognition' is derived from the Latin word ***cognoscere***, meaning "to know" or "to come to know". Thus, cognition includes the activities and processes concerned with the acquisition, storage, retrieval and processing of knowledge. In other words, it might include the processes that help us to perceive, attend, remember, think, categorize, reason, decide, and so on. Since the beginning of experimental psychology in the nineteenth century, there had been interest in the study of higher mental processes. But something discontinuous happened in the late 1950s, something so dramatic that it is now referred to as the 'cognitive revolution'. Cognitivism is the belief that much of human behaviour can be understood in terms of how people think. It rejects the notion that psychologists should avoid studying mental processes because they are unobservable. Cognitivism is, in part, a synthesis of earlier forms of analysis, such as behaviourism and Gestaltism. Like behaviorism, it adopts precise quantitative analysis to study how people learn and think; like Gestaltism, it emphasizes internal mental processes. Cognitive psychology is the study of how people perceive, learn, remember, and think about information. A cognitive psychologist might study how

people perceive various shapes, why they remember some facts but forget others, or how they learn language. In this unit we will discuss the Cognitive School of Psychology briefly.

1.3.2: LEARNING OBJECTIVES

After the completion of this unit you will be able to-

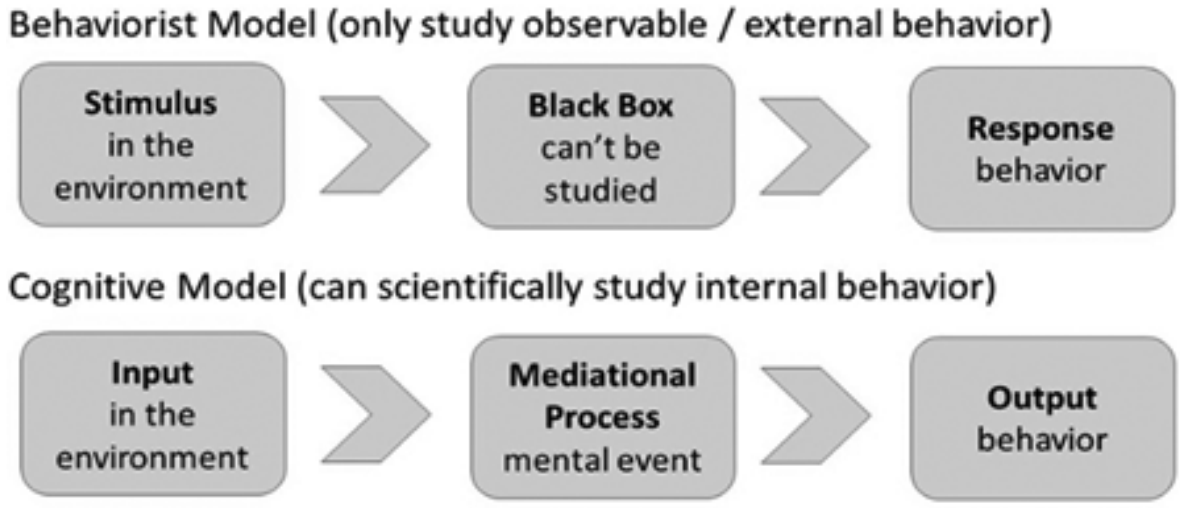
- Know the basic features of cognitive school of psychology.
- Understand that how individual learn.
- Explain the educational significances of cognitive school of psychology.

1.3.3: COGNITIVE SCHOOL

Cognitive psychology is the study of how people perceive, learn, remember, and think about information. A cognitive psychologist might study how people perceive various shapes, why they remember some facts but forget others, or how they learn. There are some foundational questions that cognitive psychology examines.

- How does memory work?
- How do we perceive our environment?
- How do we reason, and solve problems?
- How do we think?

It is a theoretical perspective that focuses on the realms of human perception, thought, and memory. Thought processes have been studied by philosophers for centuries. However, the psychological study of cognition is a relatively new area of study with its origins in the 1950's. Cognitive psychology has roots in many different ideas and approaches. The approaches that will be examined include early approaches such as structuralism and functionalism, followed by a



discussion of associationism, behaviourism, and Gestalt psychology. But cognitivism draws much from the Gestalts who focus upon the "whole pattern" rather than the parts. However, this psychology mainly focuses on topics such as attention, memory, and problem solving.

In the early 1950s, a movement called the "cognitive revolution" took place in response to behaviourism. Cognitivism is the belief that much of human behaviour can be understood in terms of how people think. It rejects the notion that psychologists should avoid studying mental processes because they are unobservable. Cognitivism is, in part, a synthesis of earlier forms of analysis, such as behaviourism and Gestaltism. Like behaviorism, it adopts precise quantitative analysis to study how peoplelearn and think; like Gestaltism, it emphasizes internal mental processes.

Some prominent cognitive psychologists in the development of cognitive theories in the field of education are Piaget, Vygotsky, Bruner, Ausubel, and Gagne, though Tolman is often uttered in this domain as a propagator of the ideas of this school of thought. **Jean Piaget** was one of the most influential cognitive psychologists. He was a student of biology and zoology and learnt that survival requires adaptation. Therefore, he viewed the development of human cognition, or intelligence, as the continual struggle of a very complex organism trying to adapt to a very complex environment. According to Piaget´s theory, human development can be outlined in terms of functions and cognitive structures.

Cognitive psychology is the branch of psychology that studies mental processes including how people think, perceive, remember, and learn. As part of the larger field of cognitive science, this branch of psychology is related to other disciplines including neuroscience, philosophy, and linguistics.

1.3.4: BASIC TENETS

Cognitive Psychologists are interested in trying to understand the mind in terms of its functions and processes. Cognitive theory mainly stresses the acquisition of knowledge and growth of the mental structure. On the basis of the above perspective, cognitive psychologists view that cognition is central to the development of psychology as a scientific discipline. Accordingly, they propose —

- **Focus on mental processes:**It sees the individual not as the somewhat mechanical product of his environment, but as an active agent in the learning process, deliberately trying to process and categorize the stream of information fed into him by the external world.Cognitivists therefore have focused on identifying mental processes – internal and conscious representations of the world – that they consider are essential for human learning.

- **Information processing:** Cognitive Psychologists see people as information processors who receive information via the senses, process it and use it to guide action and behaviour. According to them, if we are able to understand the connections between concepts break down information and rebuild with logical connections, then our retention of material and understanding will increase.

- **Peoples are active in Learning:** According to Cognitivism, People are actively involved in the learning process rather than being passive victims of environmental conditions.
- **Cognitive process can be inferred from their behaviours:** Behaviourists argue that we cannot directly observes someone thinking, therefore we cannot study it objectively and scientifically.

Cognitive psychologists disagree this view, they suggest by observing people's responses to various object and events, it is possible to draw reasonable inferences to make educated guesses about the cognitive process that probably underline their responses.

- **Metacognition:** Metacognition also involves thinking about one's own thinking process such as study skills, memory capabilities, and the ability to monitor learning. Due to metacognition we are aware of our own mental functions, monitor them and control our learning processes.

Cognitive psychology is concerned with identifying and describing mental processes that affect learning, thinking and behaviour, and the conditions that influence those mental processes.

1.3.5: CRITICAL EVALUATION

B.F. Skinner criticizes the cognitive approach as he believes that only external stimulus-response behaviour should be studied as this can be scientifically measured. Therefore, mediation processes (between stimulus and response) do not exist as they cannot be seen and measured. Skinner continues to find problems with cognitive research methods, namely introspection (as used by Wilhelm Wundt) due to its subjective and unscientific nature.

Humanistic psychologist Carl Rogers believes that the use of laboratory experiments by cognitive psychology have low ecological validity and create an artificial environment due to the control over variables. Rogers emphasizes a more holistic approach to understanding behaviour.

The information processing paradigm of cognitive psychology views that minds in terms of a computer when processing information. However, although there are similarities between the human mind and the operations of a computer (inputs and outputs, storage systems, the use of a central processor) the computer analogy has been criticised by many. Such machine reductionism (simplicity) ignores the influence of human emotion and motivation on the cognitive system and how this may affect our ability to process information.

Behaviourism assumes that people are born a blank slate (tabula rasa) and are not born with cognitive functions like schemas, memory or perception.

The cognitive approach does not always recognize physical (re: biological psychology) and environmental (re: behaviourism) factors in determining behaviour.

Cognitive psychology has influenced and integrated with many other approaches and areas of study to produce, for example, social learning theory, cognitive neuropsychology and artificial intelligence (AI).

Another strength is that the research conducted in this area of psychology very often has application in the real world. For example, cognitive behavioral therapy (CBT) has been very effective for treating depression (Hollon& Beck, 1994), and moderately effective for anxiety problems (Beck, 1993). The basis of CBT is to change the way the persons processes their thoughts to make them more rational or positive.

1.3.6: EDUCATIONAL CONTRIBUTIONS

Cognitivism school of psychology is the study about how people think, and unquestionably from Educational Psychological perspective, thinking is an essential condition of learning. The theories ofCognitive psychology have significant contribution in educational field, those are as follows:

Jerome Bruner – An early Cognitive psychologist who promoted ideas that students learn through discovery. He argued that students needed to use what they already knew to solve problems. True learning involves "figuring out how to use what you know to go beyond what you already think." A teacher's job thus would be to help a student do more efficiently what the student would do on his/her own. Teachers must guide students to make connections between various things they know and the ideas of others. Teachers are expected to design curriculum and learning experiences in ways that allow students to think with information they have, but go well beyond that knowledge to make new discoveries.

John Piaget a wellpopular cognitive-developmental psychologist, whose model focuses on changes that occur in how people think as they progress from infancy through childhood and adolescence and ultimately into adulthood. He revolutionized our understanding of how children think and construct knowledge. In this sense, he is the pioneer of 'constructivism' in the process of learning. From his theory of cognitive development, teachers understand about the cognitive nature of learners as well as the learning process.

Lev Vygotsky –sociocultural theorist who maintains that how we think is a function of both social and cultural forces. He believes that all learning is shaped by the way parents and cultures think and interact. Vygotsky says that social interaction is the primary cause of cognitive growth. Vygotsky suggests that learners can obtain cognitive skills through conversation and interactions with those who are older and more experienced. Vygotsky's social constructivism has made an enormous contribution to our understanding of language and thinking.

Piaget, Vygotsky and Bruner initiated and developed a new stream of cognitive psychology which is most popularly named as 'constructivism'. Educational Psychology is grateful to them. Because of constructivism, new modes of teaching - learning through 'cooperative learning', 'collaborative learning', 'peer tutoring' and similar others have been introduced.

Ausubel's approach of meaningful learning, organizer information plays an important role. These are starter expressions constituted by high-level concepts. An organizer can be a concept, a principle, a generalization and a rule. It is an advance organizer, a piece of information presented by the teacher, which helps student to organize the new information. Advance organizers help the process of learning when difficult and complex materials are presented.

There have some other cognitivists who make glorious contribution in education by their cognitive theory. Cognitivists have increased our understanding of how humans process and make sense of new information, how we access, interpret, integrate, process, organize and manage knowledge, and have given us a better understanding of the conditions that affect learners' mental states.

Question:

Let Us Check Our Progress

1. What is cognitive psychology?
2. Who are known as cognitive psychologists?
3. Tick out the correct answer:
   (a) Learning is a process of cognition / recognition / thinking.
   (b) Learner constructs knowledge actively / passively /automatically.
   (c) Vygotsky introduced individual / group / social constructivism.

1.3.7: LET US SUM UP

Cognitive psychology first emerged in the two decades between 1950 and 1970. Cognitive psychology is the study of how people perceive, learn, remember, andthink about information. A cognitive psychologist might study how people perceivevarious shapes, why they remember some facts but forget others, or how they learnlanguage.

Cognitive psychologists focus on our thinking patterns. They are concerned with how our mind processing information and the schemas we form (see Piaget). Unlike other schools of psychology, cognitive psychologists use the scientific method to analyze thought patterns.

A number of different approaches have been proposed in order to better understand the field of cognitive psychology. Each of these approaches emphasizes a different aspect and highlight distinct features underlying the cognitive processes. These methods provide us with an insight into how the human mind functions by giving us a general idea about the workings of the basic cognitive processes that we engage in.

The modern development of cognitive psychology is due to the focus on research on human performance and attention, information processing, developments in computer science, especially those in artificial intelligence, and the renewal of interest in the field of linguistics.

1.3.8: ASSIGNMENT

1. Explain the basic Characteristics of Cognitive School of Psychology.
2. Briefly discuss the educational contributions of Cognitive Psychology.
3. Critically analysis the Cognitive School of Psychology.
4. Describe the historicity of Cognitive psychological thought.

1.3.9: SUGGESTED READINGS:

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Unit - 5
Humanistic School of Psychology

CONTENT STRUCTURE:

1.5.1: Introduction

1.5.2: Learning Objectives

1.5.3: Humanistic Psychology

1.5.4: Humanistic Psychology assumptions

1.5.5: Basic tenets

1.5.6 Critical analysis of Humanistic Psychology

1.5.7: Educational contributions

Questions for checking progress

1.1.1 INTRODUCTION:

Once a time, Clinically-oriented practitioners favoured psychoanalysis, while experimental researchers tended to follow the precepts of behaviourism. Supporters of each approach viewed it as a comprehensive system for understanding human behaviour. Not surprisingly, however, not every psychologist felt comfortable with the existing approaches. Some found behaviourism too limited, because it focused on specific responses, while ignoring the person as a whole. Others found psychoanalysis both too rigid and too pessimistic. (Some of the pioneers of the humanistic approach started their careers in the psychoanalytic tradition.) Many people who were not formally trained in psychology also felt vaguely uncomfortable with the conceptions of the human being that were being proposed by these psychological approaches. They felt, as you may also have felt up to this point, that they were more than a collection of biological and/or conditioned responses or feelings and actions dictated by processes of which they had no conscious knowledge. Intuitively, many people felt that they were more than this – that they were unique, thinking, feeling, hoping, dreaming, planning, growing beings that were special in their own unique ways. Out of these concerns emerged the humanistic approach.

1.1.2 LEARNING OBJECTIVES:

The unit provides a comprehensive idea about the humanistic school of psychology. After the completion of the unit, you will be able to –

Humanistic Psychology

Humanistic psychology developed as an alternative to behaviourism and psychoanalysis. Avoid in psychology's conception of human nature was found in the 1950s. Psychoanalysis and behaviourism were then the leading school ideas, one focusing on the unconscious mind and the other on observable behaviour. Behaviourism was often criticized for lacking focus on human consciousness and personality and for being deterministic, mechanistic, and over-reliant on animal studies. Psychoanalysis was rejected for its strong emphasis on unconscious and instinctive forces and for being deterministic, as well.

Humanistic psychology was born out of the need to understand the conscious mind. Humanistic psychologists believe individuals are controlled by their own values and choices and not entirely by the environment, as behaviourists think, or by unconscious drives, as psychoanalysts believe. The goal of humanistic psychology is to help people function effectively and fulfill their own unique potential. Humanism is a psychological approach that emphasizes the study of the whole person. Humanistic psychologists look at human behaviour not only through the eyes of the observer, but through the eyes of the person doing the behaving.The followers of this approach include the American psychologists Abraham H. Maslow and Carl R. Rogers. In 1957 and 1958, AbrahamMaslow and Clark Moustakas met with psychologists who shared their goal of establishing a professional association that emphasized a more positive and humanistic approach. The discussions revolved around the topics they believed would become the core tenets of this new approach to psychology: Self-actualization, creativity, health, individuality, intrinsic nature, self, being, becoming, and meaning.

After receiving sponsorship from Brandeis University, The American Association for Humanistic Psychology was founded in 1961. Other major contributors to the development of humanistic psychology are Carl Rogers, Gordon Allport, James Bugental, Charlotte Buhler, Rollo May, Gardner Murphy, Henry Murray, Fritz Perls, Kirk Schneider, Louis Hoffman, and Paul Wong.

Humanistic psychologists start from the assumption that every person has their own unique way of perceiving and understanding the world and that the things they do only make sense in this light. Consequently, the kinds of questions they ask about people differ from those asked by psychologists from other approaches. Whereas other approaches take an objective view of people, in essence asking about them, 'what is this person like?' humanistic psychologists' priority is understanding people's subjectivity, asking 'what is it like to be this person?' As a result, they reject the objective scientific method as a way of studying people. Humanistic psychologists explicitly endorse the idea that people have free will and are capable of choosing their own actions (although they may not always realize this). They also take the view that all people have a tendency towards growth and the fulfilment

Humanistic psychology is a perspective that emphasizes looking at the whole individual and stresses concepts such as free will, self-efficacy, and self-actualization. Rather than concentrating on dysfunction, humanistic psychology strives to help people fulfill their potential and maximize their well-being.

of their potential. Much of their research has focused on how people can be helped to fulfil their potential and lead more contented lives.

HUMANISTIC PSYCHOLOGY BASIC ASSUMPTIONS

Humanistic psychology begins with the existential assumptions that phenomenology is central and that people have free will. Personal agency is the humanistic term for the exercise of free will. Personal agency refers to the choices we make in life, the paths we go down and their consequences.

A further assumption is then added - people are basically good, and have an innate need to make themselves and the world better. The humanistic approach emphasizes the personal worth of the individual, the centrality of human values, and the creative, active nature of human beings. The approach is optimistic and focuses on noble human capacity to overcome hardship, pain and despair.

Both Rogers and Maslow regarded personal growth and fulfillment in life as a basic human motive. This means that each person, in different ways, seeks to grow psychologically and continuously enhance themselves. This has been captured by the term self-actualization which is about psychological growth, fulfillment and satisfaction in life. However, Rogers and Maslow both describe different ways of how self-actualization can be achieved.

Central to the humanist theories of Rogers (1959) and Maslow (1943) are the subjective, conscious experiences of the individual. Humanistic psychologists argue that objective reality is less important than a person's subjective perception and understanding of the world. Because of this, Rogers and Maslow placed little value on scientific psychology especially the use of the psychology laboratory to investigate both human and animal behaviour.

Humanism rejects scientific methodology like experiments and typically uses qualitative research methods. For example, diary accounts, open-ended questionnaires, unstructured interviews and unstructured observations. Qualitative research is useful for studies at the individual level, and to find out, in depth, the ways in which people think or feel (e.g. Case studies).

Humanism views human beings as fundamentally different from other animals mainly because humans are conscious beings capable of thought, reason and language. For humanistic psychologists' research on animals, such as rats, pigeons, or monkeys held little value. Research on such animals can tell us, so theyargued, very little about human thought, behaviour and experience.

Humanistic psychologists rejected a rigorous scientific approach to psychology because they saw it asdehumanizing and unable to capture the richness of conscious experience. In many ways the rejection ofscientific psychology in the 1950s, 1960s and 1970s was a backlash to the dominance of the behaviourist approach in North American psychology.

1.1.3.2: BASIC PRINCIPLES OF HUMANISM

On the basis of humanistic assumptions, we can point out some principles of this thought. They are as follows:

- They believe that - Humans have free will; not all behaviour is determined.
- An individual's behaviour is primarily determined by his perception of the world around him.
- humanistic psychology focused on each individual's potential and stressed the importance of growth and self-actualization.
- They faith that human behaviour can only be achieved by studying humans - not animals.
- Emphasises on study the individual case (idiographic)rather than the average performance of groups(nomothetic).
- People are innately good and that mental and social problems result from deviations from this natural tendency.
- Do not believe that Individuals are solely the product of their environment.
- Humans are internally directed and motivated to fulfill their human potential.
- People are continually looking for new ways to grow, to become better, to learn new things
- Qualitative data gives genuine insight and more holistic information into behaviour.

On the basis of their fundamental principles of thought, they considered the principles of education known as 'humanistic education'. These principles are as follows:

1. Choice or Control

The humanistic approach focuses a great deal on student choice and control over the course of their education. Students are encouraged to make choices that range from day-to-day activities to periodically setting future life goals. This allows for students to focus on a specific subject of interest for any amount of time they choose, within reason.

2. Felt Concern

Humanistic education tends to focus on the felt concerns and interests of the students intertwining with the intellect. It is believed that the overall mood and feeling of the students can either hinder or foster the process of learning.

3. The Whole Person

Humanistic educators believe that both feelings and knowledge are important to the learning process. Unlike traditional educators, humanistic teachers do not separate the cognitive and affective domains. This aspect also relates to the curriculum in the sense that lessons and activities provided focus on various aspects of the student and not just rote memorization through note taking and lecturing.

4. Self Evaluation

Humanistic educators believe that grades are irrelevant and that only self-evaluation is meaningful. Grading encourages students to work for a grade and not for intrinsic satisfaction. Humanistic educators disagree with routine testing because they teach students rote memorization as opposed to meaningful learning. They also believe testing doesn't provide sufficient educational feedback to the teacher.

5. Teacher as a Facilitator

"The tutor or lecturer tends to be more supportive than critical, more understanding than judgmental, more genuine than playing a role." Their job is to foster a engaging environment for the students and ask inquiry based questions that promote meaningful learning.

Principles of humanist thought have served as a foundation for major developments in both psychology and education. Humanistic education viewed that education is a life-long process and the purpose of education is to develop self-actualizing persons who will be able to live joyous, humane, and meaningful lives. At the same time, it estimated that the essential characteristics of the humanistic educator are empathic understanding, respect or acceptance, and genuineness or authenticity.

The major focus of a humanistic approach is the development of the whole student with an emphasis on emotional aspects of the student. The learning concentrates upon the development of the students self-concept. If the student feels good about him or herself then that is a positive start. They believe Learning is not an end in itself. It is the means to progress towards the pinnacle of self-development (self-actualisation).

Critical Evaluation of Humanistic Psychology:

Humanism's reliance on the subjective experiences of individuals may make it difficult to objectively measure, record, and study humanistic variables and features.

The emphasis on gathering qualitative data makes it almost impossible to measure and verify any observations made in therapy. Not only might it be challenging to compare one set of qualitative data with another, the overall lack of quantitative data means that key theories cannot be supported by empirical evidence.

Other criticisms of the approach include its lack of effectiveness in treating severe mental health issues and the generalizations made about human nature, as well as the complete rejection of some important behaviourist and psychoanalytic concepts. For example, although humanistic psychology holds that animal studies are useless in the study of human behaviour, some animal studies have led to concepts that are applicable to people.

Additionally, humanistic psychology focuses exclusively on free will and the conscious mind, but research does show that the unconscious mind plays a significant role in human psychology.

1.1.3.3: EDUCATIONAL CONTRIBUTIONS

We can consider Humanistic education for brought radical changes in the thoughts on the nature of education and subsequently on its various sub processes.

Humanistic teaching approach is based on the premise that students have a need to become adults who are self-actualized. In order to become self-actualized adults, students need a classroom that gives them the freedom to be creative. Many humanistic teachers believe there should be no lesson plans or standard curricula and that grades should be de-emphasized or abolished completely. In practice, humanistic teaching methods combine individual and small-group instruction methods.

Another important contribution of humanistic education is the objective of promoting students' self-esteem and considering it as an intrinsic motivator. Therefore, according to this perspective, teaching-learning process should be conducted in such a way that the students will motivate themselves to learn.

Humanist educators attempt to build students' self esteem by using value education and teaching without grading. This value education is not transacted by teaching values, but by encouraging students to reflectively formulate their own values.

Above all, the humanistic education focuses on the affective or emotional components of learning. Therefore, teachers should be less concerned with 'what' students learn than that they learn 'how' to learn and develop positive attitudes toward learning and self-esteem. In this 'student-cantered' teaching, the teacher's role shifts from that of 'instructor' to that of 'facilitator'.

Humanistic approach as one of the mainstreams of contemporary educational theories and practices has influenced the second language pedagogy over the past two decades and has led to certain implications and applications both for language teachers and learners.

Humanistic education giving priority to learners' psychological states can prepare optimal learning conditions and, as a result, foster critical thinking in the learners. According to Brown (2007) in adjusting Rogers s notions to language learning/ teaching we need to make sure that learners realize themselves and communicate this self to others openly and non-defensively. Teachers who are regarded as facilitators should consequently provide the nurturing setting for learners to build their meanings in cooperation with others.

The implications of a humanistic approach, as Huo (2006) states, have been also considered for the educational administration itself. The mainspring in such an organization is should be the motivation for growth and learning which is implicit in each person. The task of decision maker is so to fix up the organizational conditions and ways of operation that people can reach their own goals by fostering the jointly defined ends of the institution. The administration seeks to ease the ability of teachers and students to formulate and use their potential, via removing obstructions and making a

climate of valuing, prizing, and trusting. Everyone takes part in the organizational process, sharing initiative, responsibility and authority.

humanistic education seeks to emphasize that the affective aspects of language learning are as important as the cognitive aspects, and therefore the learner should be treated in some sense as a 'whole person', that is, every student in the classroom should first be looked at as a human, then a learner.

It has also some implications for teacher education. A mix of the cognitive and the affective in education and a concern upon the interpersonal conditions for facilitating significant learning demand changes in the preparation of teachers. Teacher education presently emphasizes subject matter and methods of cognitive learning. To develop good interpersonal conditions, counseling learning or whole-person learning should be fostered and developed through teacher education programs.

Question :

Let Us Check Our Progress

1. What do you mean by humanistic psychology?
2. Who are the pioneer humanistic psychologists?
3. Mention three character of humanistic education?
4. Point out any three basic tenants of humanistic psychologists.

LET US SUM UP

Humanistic psychology theory first emerged in the 1950s in response to the resurgence of military conflict characterized during the first half of the 20th century. Abraham Maslow and Carl Rogers stood at the forefront of its development by publishing the first research papers on this approach during the 1950s and '60s. Both proponents upheld the belief that humans are inherently good and that optimism in humanity is an important aspect for human health.

Humanistic psychology expanded its sphere of influence throughout the 1970s and 1980s. During these periods, humanistic psychology impacted the mental health field by offering a new set of values to be applied to the understanding of the human condition. It also offered new and expanded on the methods of inquiry and study of human behaviour.

A humanistic approach to education and development is based on the foundation of an integrated approach to knowledge, learning and development. Some core principles are important: respect for life and human dignity; equal rights and social justice; respect for cultural diversity, as well as a sense of shared responsibility and a commitment to international solidarity. These principles are all fundamental aspects of our common humanity. It is an approach that recognizes the diversity of knowledge systems, worldviews, and conceptions of well-being as a source of wealth. It recognizes the diversity of lived realities while reaffirming a common core of universal values.

Humanistic psychology refers to a scientific discipline that focuses on the study of an individual's inherent drive towards self-actualization. It belongs to the field commonly known as transpersonal psychology. Humanistic psychology typically holds that people are inherently good and adopts a holistic approach to human existence, with a special emphasis on the creative aspects of human potential.

ASSIGNMENT

1. Discuss the basic assumptions of Humanistic psychology.
2. What are the basic principles of Humanistic psychology?
3. Briefly explain the educational significances of Humanistic Psychology.
4. Explore the Historical Background of Humanistic Psychology.

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EDC – 02

EDUCATIONAL PSYCHOLOGY - 1

Block – 2

Growth and Development

Unit - 1

Introduction to Growth and Development

CONTENT STRUCTURE:

2.1.1: Introduction

2.1.2: Learning Objectives

2.1.3: Meaning of Growth, Development and Maturation

2.1.4: Comparisons between Growth and Development

2.1.5: Stages of Development

2.1.6: Educational Implications of Growth and Development

2.1.7: Let us Sum up

2.1.8: Assignment

2.1.9: Suggested Readings

2.1.1: INTRODUCTION

The human being is never static. You must have noticed that from birth onwards something is always happening during an individual's lifetime and s/he keeps on changing. This change is constantly taking place in physical and different psychological capacities. The way they change differs from individual to individual. However, the fundamental underlying patterns of growth and development remainmore or less the same and take place in an orderly way.In this unit, we shall discuss the concept, principles andvarious stages of growth & development.

2.1.2: OBJECTIVES

By the end of this unit you will be able to

- define and explain the meaning of the terms growth, development and maturation.
- Differentiate among growth, development and maturation.

- Know various developmental stages.
- Understand their own developmental process.

2.1.3: GROWTH, DEVELOPMENT AND MATURATION

What do you think about yourself? Are you adult and are you capable of certain activities? Do you think that you were capable of these activities as a child also? Presumably not. Isn't it? Why is it so? This is due to the process called development. But there are some other terms, which we often use interchangeably, i.e., growth and maturation. Let use therefore firstly discuss the meaning and implications of these terms.

Growth: It refers to the structural or physiological changes of body parts or the organism as awhole, it can be measured or quantified easily, i.e., growth in height, weight, etc. It is mainly related with physical development of an organism.

- According to Hurlock: Growth is change in size, in proportion, disappearance of old features and acquisition of new ones.
- According to Crow and Crow (1962): Growth refers to structural and physiological changes.

Growth	1. Growth is quantitative.
	2. Growth comprises of height, weight, size and shape of body organs like brain, etc.
	3. It is due to cell division.
	4. Growth is for limited period.
	5. Growth can be measured.
	6. Growth tells about one aspect of personality but in limited scope.

Development: When we think of development, invariably we think of physical changes, as these are commonly observed at home with younger siblings, with parents and grandparents, in school with peers or others around us. From conception until the moment of death, we not only change physically, but we also change in the way we think, use language, and develop social relationships. Remember that, changes are not confined to any one area of a person's life; they occur in the person in an integrated manner. Development is the pattern of progressive, orderly, and predictable changes that begin at conception and continue throughout life. Development mostly involves changes — both growth and decline, as observed during old age.

* According to Hurlock (1959) Development means a progressive series of changes that occur in an orderly predictable pattern as a result of maturation and experience.

* According to J.E. Anderson (1950) Development is concerned with growth as well as those changes in behaviour which results from environmental situations.

* According to Liebert, Poulos and Marmor (1979) Development refers to a process of change in growth and capability over time, as function of both maturation and interaction with the environment Development.

Development	1. Development is quantitative as well as qualitative.
	2. In this with the physical changes cognitive social and emotional change are also included.
	3. It happen due to motor and adjust mental processes and their interplay.
	4. Development takes place till death.
	5. It can be observed by matured behavior.
	6. Development deals with all the aspect of personality and has a vast scope.

Maturation: It refers to the changes that occur spontaneously and naturally and that are largelydictated by the genetic blue print. Maturation emerges over time and are relatively unaffected by environment except in case of malnutrition and serious illness. Indeed, maturation is natural unfolding of inherited tendencies.

Maturation refers to the sequential characteristic of biological growth and development. The biological changes occur in sequential order and give children new abilities. Changes in the brain and nervous system account largely for maturation. These changes in the brain and nervous system help children to improve in thinking (cognitive) and motor (physical) skills. Also, children must mature to a certain point before they can progress to new skills (Readiness). For example, a four-month-old cannot use language because the infant's brain has not matured enough to allow the child to talk. By two years old, the brain has developed further and with help from others, the child will have the capacity to say and understand words. Also, a child can't write or draw until he has developed the motor control to hold a pencil or crayon.

2.1.4: COMPARISONS BETWEEN GROWTH AND DEVELOPMENT

The two terms are seems alike, but there have some differences.

Sl. No.	Growth	Development
1.	Growth refers to physiological changes.	Development refers to overall changes in the individual. It involves changes in an orderly and coherent type towards the goal of maturity.
2.	Changes in the quantitative respect is termed as growth.	Development changes in the quality along with quantitative aspect.

Sl. No.	Growth	Development
3.	Growth does not continue throughout life.	Development continues throughout life.
4.	Growth stops after maturation.	Development is progressive.
5.	Growth occurs due to the multiplication of cells.	Development occurs due to both maturation and interaction with the environment.
6.	Growth is cellular.	Development is organizational.
7.	Growth is one of the part of the developmental process.	Development is a wider and comprehensive term.
8.	Growth may be referred to describe the changes in particular aspects of the body and behaviour of the organism.	Development describes the changes in the organism as a whole.
9.	The changes produced by growth are subjects of measurements. They may be quantified and observable in nature.	Development brings qualitative changes which are difficult to measure directly.They are assessed through keen observation of behaviour in different situations.
10.	Growth may or may not bring development.	Development is possible without growth.

Therefore, we can say that development continues throughout life and growth is a part of this process. Development is the result of the interaction between **Nature** (heredity) and **Nurture** (environment). Development follows a pattern and it takes place gradually, but individuals differ in respect to the rate of development.

Growth and Atrophy
There are two antagonistic processes in development, which begin at conception and end at death namely growth (evolution) and atrophy (involution). Both the processes occur throughout the life of an individual concurrently, the early life being dominated by growth and the later by atrophy.

2.1.5: STAGES OF DEVELOPMENT

If you see your brother, sister or even yourself, you will notice that all of you behave in a different way. This difference is due to the different developmental patterns at different stages of life.

Human life proceeds through different stages. Each stage of development has its own characteristics. The transition from one stage to another is gradual, rather than sudden. The most widely used classification of developmental stages is mentioned below—

Developmental Stage	Approx. Age Range
Prenatal	Conception-birth
Infancy	Birth-2 years
Early childhood	2-5 years
Late childhood	5-11 years
Adolescence	11-19 years
Young adulthood	19-40 years
Middle adulthood	40-65 years
Aged adulthood	Over 65 years

2.1.6: EDUCATIONAL IMPLICATIONS OF GROWTH AND DEVELOPMENT

The human being is never static. From the moment of conception to the time of death, the person is undergoing changes. Development may be defined as a progressive series of orderly, coherent changes. The various developments that take place during the life time of an individual are physical, motor, social, emotional, intellectual, aesthetic and moral.

1. Development is a continuous process, so the teacher should take continuous efforts to achieve perfection in the various aspects of development of the child.

2. Development is individualized process. So, each child should be helped along the development process within the sphere of his individual ability.

3. Development follows an orderly sequence. This knowledge helps the teacher to plan learning process and arrange suitable learning experiences so as to achieve maximum gains in terms of growth and development.

4. Different aspects of development are interrelated and interdependent. The knowledge cautions the teacher not to encourage the development of a particular aspect at the cost of another.

5. The principle of interaction between heredity and environment reminds the teacher to arrange for the best environmental settings and experiences for children so that they can develop maximum within the limits of their genetic makeup.

6. The goal of developmental changes is that, to enable the people to adapt to the environment in which they live.

7. Maturation is the biological unfolding of the characteristics according to a plan contained in the genes, or the hereditary material passed from parents to child. Learning is the process through which experience brings about relatively permanent changes in thoughts, feelings or behaviour.

2.1.7: LET US SUM UP:

Growth, development and maturation are terms, which are generally used interchangeably but have different implications.

- Growth implies a quantifiable change in structure or physiology or the organism as a whole;
- development implies a series of change that takes place over time in an orderly manner and
- maturation implies the changes, which occur naturally governed by our genetic makeup.

2.1.8: ASSIGNMENT

1. Explain the meaning of growth, development and maturation.
2. Differentiate development from growth and maturation with suitable examples.
3. Discuss the educational implication of growth, development and maturation.

2.1.9: SUGGESTIVE READINGS

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Block – 2

Unit – 2

Different aspects of Development -1

CONTENT STRUCTURE:

2.2.1: Introduction

2.2.2: Learning Objectives

2.2.3: Characteristics and Educational Programmes of Different Developmental Aspects

2.2.3.1 : Physical Development

2.2.3.2 : Social Development

2.2.3.3 : Emotional Development

2.2.4: Let us sum up

2.2.5: Assignment

2.2.6: Suggested readings

2.2.1: INTRODUCTION

Children and adolescents grow and develop at very differentrates. Each individual is unique, with a distinct personality and lifeexperience. For this reason, age is not the only sign of where aparticular child or adolescent is in terms of development. Thedifferent aspects of development are Physical, Social, Emotional, Intellectual, Moral etc. In the present unit we will discuss Physical, Social and Emotional aspect of development and educational significances of them.

2.2.2: LEARNING OBJECTIVES

By the end of this unit you will be able to

- describe the characteristics of different aspects of human development, i.e., physical, social and emotionalduring different developmental stages.
- explain the educational significance of these developmental aspects.

2.2.3: CHARACTERISTICS AND EDUCATIONAL PROGRAMMES OF DIFFERENT DEVELOPMENTAL ASPECTS

The pertinent discussions can be done in a number of ways, viz., discussing the stages in relation to the developmental aspects but here the discussions will be done by considering the different

developmental stages under the broad headings of different developmental aspects. Also, since most of the developmental characteristics mature by the adolescent stage the discussions have been limited from infancy to the adolescent stage.

2.2.3.1 : PHYSICAL DEVELOPMENT

Infancy During this stage physical growth is rapid. Assuming that nutrition is sufficient, infantalmost triples in weight and increases in body length by about one-third of birth length during the first year alone. But in the second year, the rate of growth is not so rapid. There are two types of trends in development - **cephalocaudal trend** (development from top to bottom or head to toe) and **proximodistal trend** (development from centre to outside). At the end of infancy, all normal babies alreadylearn to crawl, sit, stand and finally walk. A newborn baby shows two types of reflexes, which are necessary for survival - **rooting** and **sucking**. If a newborn's check is stroked, the child turns toward the source of stimulation (rooting) producing sucking behaviour.

Early Childhood In this stage, the physical and motor coordination of children are furtherdeveloped and they can run, jump, climb, ride tricycle, throw ball and are also able to write.

Late Childhood At this stage, the child is able to eat, dress, bathe and groom himself as likeadult. He is also able to help others by making beds, dusting, sweeping. He can draw, paint, dance, sing, throw and catch ball, ride bicycle, swim at the end of this stage.

Adolescence This stage is a period of rapid physical growth. This growth spurt occurs for bothsexes, but it starts early for girls (about ten to eleven years) than for boys (about twelve to thirteen years). Hence the girls look a little bigger than the boys. But after this (about fourteen years) boys outgrow girls. This growth spurt is just one aspect of **puberty**, which is the main characteristic of adolescence. Puberty is the period in the developmental change when an individual change from an asexual to a sexual being. During this period, an individual becomes sexually mature and capable of producing offspring. Apart from these, adolescents have good appetite, enjoy better health and take part in groups and sports with greater interest.

Ageing
Primary Ageing: Changes caused by the passage of time and perhaps due to genetic factors. Secondary Ageing: Changes due to disease, disuse or abuse of a body part. Successful Ageing: Ageing with minimal physiological losses in many bodily functions relative to younger persons; results from a healthy lifestyle.

Educational significance and programmes of Physical Development

It is obvious that the physical health of an individual is indispensable for his success in life. The physical and motor development not only depends on neuromuscular maturity but also on environmental opportunities. This development influences other aspects of development of an individual especially social, emotional and intellectual aspect. Hence proper care should be taken for physical development. Proper nutrition is utmost necessary condition for proper physical development. A

child cannot be perfect in using his/her body without proper experiences. Therefore, s/he has to get opportunities and experiences to hold and manipulate different things to develop his/her physical development. Different indoor and outdoor activities at home and school give scope for physical development. During puberty, adolescents need sympathetic understanding and friendliness. Proper guidance should be given to direct their physical energies to healthy and useful ways. Otherwise, they become violent or aggressive. However, knowledge regarding physical development helps teachers and also parents to plan different programmes and activities for children. Some educational programmes for better physical development are stated below:

- ✓ provide meals with good nutrition value and make children inculcate healthy habits.
- ✓ help the children and also parents learn about good hygiene.
- ✓ give opportunities to practice large motor skills (balancing, galloping, skipping, etc.) and small motor skills (cutting, holding writing instruments, dancing, painting, etc.).
- ✓ present activities to develop eye-hand coordination.
- ✓ Organize different indoor and outdoor activities.

2.2.3.2 : SOCIAL DEVELOPMENT

"By social growth and development we mean increasing ability to get along well with oneself and others (Soreson, 1948) What will you call a newborn baby - is he social, unsocial or antisocial? No he is none of the above, actually this newborn baby is an 'asocial' human being. Infancy At around six weeks, a true social smile appears on the face of a newborn baby and this is regarded as the beginning of socialization. During the first year, the baby is easy to handle but in the middle of second year the baby is uncooperative and difficult to handle. But after the period of infancy the baby is again social and friendly in behaviour. The first social relationship most infants form is with a parent (generally mother) and this relationship is called attachment. Hence the baby shows proximity maintaining behaviour with his caregivers. At this stage, the baby differentiates between friends and strangers. The baby cooperates in a number of routine activities, like - being dressed, fed, bathe etc. During this stage, the baby does not want to share his/her toys with others, i.e. s/he is somewhat egocentric.

Early Childhood At this stage, the egocentric tendencies in social behaviour decrease. S/he imitates the attitude and behaviour of a person who s/he especially admires. During the period, s/he tries to excel others, implying development of competitive attitude. Cooperative play and group activities begin to develop during this span. Some unsocial behaviour, like negativism (resistance to adult authority), aggression, and selfishness develop at this stage, but these types of behaviour gradually decrease. However, these negative types of unsocial behaviours are important because

that will enable the child to know what others approve or disapprove. During this stage, the child gradually gives up 'I' feelings and develops 'WE' feelings.

Late Childhood At this stage, social consciousness develops. Gang and club enthusiasm increase in this stage. They form groups with their playgroup. Members of the gang are of the same sex during this stage. Their peer group becomes important agent for their socialization. They learn to be loyal to groups and conform to the stand of the gang. Gradually they learn to compete and cooperate with others, to carry out the responsibilities and also learn socially acceptable behaviours. Boys' gangs are more rebellious than girls and are more organized also. Sex differentiation becomes sharp at this stage. Delinquency begins more during this period.

Social Network & Friendship
Social network is a group of people with whom one interacts regularly. Friendship is the relationship involving strong, affective ties between two persons. Beyond midlife we reduce the size of our social network to about ten persons because of the realization that time is limited.

Adolescence Adolescents spend most of the time with their peers than with family members. They initially make friends with the members of their own gender and gradually with members of the other gender also. Their attitudes, values, interests etc, are influenced by these peer groups. Most adolescents frame an extensive social networking consisting of many friends. Gradually these networks tend to become smaller and more exclusive and this trend continues throughout life. Usually they have two or three close friends of the same sex having similar interests and attitudes.

Educational significance and programmes of Social Development

One of the most important aims of education is to make individual a social being. Hence this aspect of development is very much important for an individual. Initially an infant is egocentric in nature. Group and community activities are very helpful to make children move from egocentricity to altruism. Parents or teachers should promote a feeling of security in their minds. Children should be stimulated to participate in-group games and other organized recreational activities. They should be helped to develop a keen interest in hobbies and recreations. If the opportunities are provided to them to organize clubs, groups etc. it contributes towards maintaining good social health for him. The social developmentduring late childhood and adolescent periods is markedly influenced by the peer group. Hence, their interactions with these peers should be inspected to avoid moving into undesirable path. To develop the social outlook and perspective issues regarding social evils, social reform, social changes etc. should be discussed. A safe, healthy and democratic environment is good for proper social development of an individual. Educational programmes suggested for social development are highlighted below:

- ✓ encourage children to work together in small groups.
- ✓ give them responsibilities in the class room.

- ✓ help them learn to respect others.
- ✓ encourage children to help others in need and to share.
- ✓ introduce them to children of other cultures and different abilities.
- ✓ provide opportunities to make them learn to work and play cooperatively.
- ✓ encourage them to solve their problems with others.

Check your Progress - I

(Write your answer in the space and compare it with the Unit end answers)

1. **The period of conception to birth is known as_____.**
2. **The time of sexual maturation is known as_____.**
3. **Development from head to toe is known as _____.**
4. **_____ is the first social relationship of a human.**
5. **'WE' feelings develop during _____ stage.**

2.2.3.3: EMOTIONAL DEVELOPMENT

Very often we use the term '**emotion**' like 'emotional person', 'emotionally disturbed' etc. What do we want to mean? Let's discuss the meaning of the term. An 'emotion' is a disturbed state of organism involving external and internal changes in the body, like changes of gesture, muscular movement, facial expression, blood pressure, heart beat, respiration rate etc. Infants show a general pattern of emotion and this generalized pattern later get differentiated into different forms of familiar emotional behaviour.

Infancy Infants, up to one year, show emotion, which are mainly connected with biological needs.They mainly display three primary emotions - Love (in response to stroking), Fear (in response to loud noise and loss of support) and Anger (in response to physical restraints). The other forms of emotion during this stage are - curiosity (in response to anything new or unusual), joy (stimulated initially by physical well-being and then by being played with) and affection (in response to persons who play and take care of his biological needs).

Early childhood At this stage, children show most of the emotions normally experienced by adults,but their expressions are markedly different. The most common emotions of early childhood are as follows:

Anger — this is caused by conflict over playthings, the hindrances of wishes etc. *Fear* — any unpleasant experience plays important role in arousing fears. The most common fears are of doctors, dogs, storms, darkness etc. Some of the fears during this stage are purely imaginary.

Jealousy — whenthe child thinks that parental interest and attention are shifting towards someone else in the family (generally sibling), s/he becomes jealous.

Curiosity — become curious about anything new that they see. They also curious about their own bodies and the bodies of other.

Envy — may become envious about the material possessions and abilities of another person.

Grief — happens due to the loss of anything that they love or important for them. *Joy* and *affection* are also common emotions at this stage.

Late Childhood The characteristics of emotion during this stage differ from early childhood interms of the forms of emotional expressions. From experience and learning children understand the feelings of others about the violent expressions of emotions, especially unpleasant and socially unacceptable emotions. Hence they learn to control their outward expressions of emotions. Sometimes at this stage they experience more frequent and intense emotions due to physical and environmental causes.

Emotion and Health
Inadequate emotional expression, especially negative feelings can have an adverse effect on certain types of physical illness, viz., progression of hypertension wherein emotion can also play a significant role.

Adolescence Initially adolescents tend to suffer from swinging moods of emotional instability. Theyare likely to be over-sensitive and can be hurt easily. But by the end of this stage, they can assess a situation critically and respond in a socially acceptable manner. They can ignore such stimuli, which would cause emotional outburst. Finally mature adolescents can control their emotion and show a stable pattern of emotional expression.

Educational significance and programmes of Emotional Development

There are some emotions, which are positive, and some, which are negative. Experiencing positive emotions make a child happy and balanced. But it is not possible to always experience positive emotions. A child comes across a number of negative emotions in his/her life. If a person experiences these negative emotions again and again, then s/he becomes emotionally instable. Hurlock has pointed out five causes, which disturb an individual's emotional stability viz. - fatigue, poor health, association with emotional people, thwarted desires and unpreparedness. Children should be helped to express their emotions in natural way and this provides emotional security for them. Realistic understanding about the situations that arouse unpleasant emotions should be stimulated; it helps them to overcome the experiences of negative emotions. A matured individual can control his/her emotions. Hence children should be helped to learn to control their emotion, which may offend others. Healthy physical condition should be provided to avoid the feelings of fatigueness. Finally, it can be said that the emotional behaviour of parents and teachers should be balanced for the proper

emotional development of the children. The educational programmes, which can help in emotional development, are as follows:

- ✓ help children learn to control their emotions through setting a positive example.
- ✓ help them learn to wait for their turn and to share with others.
- ✓ reassure them that it is okay to have feelings and to express them in acceptable ways.
- ✓ help them to channelize their emotions in constructive ways.
- ✓ give emotional security by showing respect to them.

2.2.4: LET US SUM UP

Physical development is characterized by two types of trends namely - cephalocaudal and proximodistal trend. A new born baby shows two reflexes - rooting and sucking. After childhood s/he can do many activities for himself/herself and others. Adolescent period is characterized by puberty and sexual maturity. Good nutrition, different indoor and outdoor activities are very helpful for physical development.

A new born baby is asocial. During infancy s/he shows two types of social relationships - attachment and proximity maintaining behaviour. During childhood his/her egocentric nature decreases and 'WE' feeling develops and hey become members of a group. Adolescents spend most of their time with their peers and frame social networking. Games, recreational activities, community activities are very helpful in the social development of an individual.

Infants show a general pattern of emotion but after maturation an individual can control and differentiate his/her emotions. There are some positive and negative emotions. For proper social development children should be helped to express and control their emotions.

2.2.5: ASSIGNMENT

1. What are the main characteristics of physical growth and development from infancy to adolescence? Explain the educational significance of these characteristics.
2. Describe the characteristics of social development of human being till adolescence. What educational programme do you suggest for proper social development?
3. What is the meaning of emotion and emotional development? Describe general characteristics of emotional development of an individual. Suggest some educational programme, which can help emotional development.

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2.3.7: ANSWERS TO 'CHECK YOUR PROGRESS'

Check your Progress I

1. prenatal stage
2. puberty
3. cephalocaudal trend
4. attachment
5. early childhood

Block – 2

Unit – 3

Different aspects of Development - 2

CONTENT STRUCTURE:

2.3.1: Introduction

2.3.2: Learning Objectives

2.3.3: Characteristics and Educational Programmes of Different Developmental Aspects

2.3.3.1: Intellectual Development

2.3.3.2: Language Development

2.3.3.3: Moral Development

2.3.4: Let us sum up

2.3.5: Assignment

2.3.6: Suggested readings

2.3.7: Answer to Check your progress

2.3.1: INTRODUCTION

We already know that there have various developmental aspects, i.e.Physical, Social, Emotional, Intellectual, Moral and Language. Previous unit we discussed Physical, Social and Emotional development and their educational significances. Now we are going to discuss other significant aspects of human development (Intellectual, language and Moral). We also will discuss about their educational implications.

2.3.2: LEARNING OBJECTIVES

By the end of this unit you will be able to

- describe the characteristics of different aspects of human development, i.e., intellectual, language and moralduring different developmental stages.
- explain the educational significance of these developmental aspects.

2.3.3: CHARACTERISTICS AND EDUCATIONAL PROGRAMMES OF DIFFERENT DEVELOPMENTAL ASPECTS

Here we will discuss about Intellectual, Language and Moral aspect of human development along with the educational significances of those aspects in human life.

2.3.3.1: INTELLECTUAL DEVELOPMENT

At the time of birth, a baby cannot comprehend anything in his/her environment. Gradually s/he can understand these through maturation and experience and this depends on the level of intelligence and his/her previous experiences. This is true in case of your development too. Now you think critically, logically and also solve your problem without taking other's help. This is due to your intellectual development.

Infancy At this stage an infant shows recognition of familiar person and objects. He is able to comprehend the situation as a whole rather than any part of the situation. If you try to recall the Theory of Cognitive Development by Jean Piaget, you can see that, Piaget has named this stage as **Sensorimotor stage**. An infant's perception comes through sensory exploration. He can also make some action with the help of two basic reflexes (sucking and grasping) and these actions become meaningful to him. The major achievement of this stage is **Object Permanence**, which means understanding that objects and events continue to exist even when they cannot directly be seen, heard or touched. At this stage, concept of space and concept of self develop but the concept of weight and time is not accurate enough.

Early Childhood In this stage, the child is able to notice the details of an object and this forms concepts, which are specific and meaningful to him. But his/her concepts about weight and time are not developed properly. Piaget has labeled this stage as **Pre-operational Stage** because the child has not yet mastered the mental operation but is moving toward mastery. The important characteristic of this stage is to be able to form and use symbols like language (i.e. **semoitic functioning**). He is able to think in one direction only (called **Centration**). At this stage, reversible thinking is difficult for him/ her. S/he generally faces difficulties in understanding the **principles of conservation**, which refers to the principle that the amount or number remains the same even if the arrangement or appearance is changed. His/her thinking is **egocentric** in nature that means s/he is not able to take the point of view of others. His/her intellectual limitation is not be mistaken as his selfishness. S/he does not differentiate living and non-living objects and believes that all things are living (called an **Animism**).

Late Childhood At this stage, child starts thinking in a logical way; Piaget has called this stageas **Concrete-operational Stage**. S/he can now think in more than one direction and is also able to think reversibly. The abilities of **classification** and **seriation** have already developed during this

stage. But s/he is unable to think abstractly; his/her thinking is tied to concrete objects only. His/her egocentric nature of thinking wanes and s/he is able to reason inductively.

Adolescence Adolescents are able to think adult like. They enter the final stage of cognitivedevelopment as proposed by Piaget, i.e. **Formal operational Stage**. The main characteristic of this stage is **hypothetico - deductive thinking**. Adolescents can build up **hypotheses** and try to solve the problem through logical deduction that means they are able to verify the framed hypotheses and make inferences. In that way the intellectual development of an individual is matured.

There Are Three Basic Components To Piaget's Cognitive Theory:

1. Schemas

   (building blocks of knowledge).

2. Adaptation processes that enable the transition from one stage to another

   (assimilation, accommodation, and equilibrium,).

3. Stages of Cognitive Development:

- sensorimotor,
- preoperational,
- concrete operational,
- formal operational.

1. Schemas: Schemas are the basic building blocks of such cognitive models, and enable us to form a mental representation of the world. Piaget (1952, p. 7) defined a schema as:

> **"a cohesive, repeatable action sequence possessing component actions that are tightly interconnected and governed by a core meaning."**

A schema can be defined as a set of linked mental representations of the world, which we use both to understand and to respond to situations. The assumption is that we store these mental representations and apply them when needed.

For example, a person might have a schema about buying a meal in a restaurant. The schema is a stored form of the pattern of behaviour which includes looking at a menu, ordering food, eating it and paying the bill. This is an example of a type of schema called a 'script.' Whenever they are in a restaurant, they retrieve this schema from memory and apply it to the situation.

2. Assimilation, Accommodation, and Equilibrium

Jean Piaget (1952; see also Wadsworth, 2004) viewed intellectual growth as a process of **adaptation** (adjustment) to the world. This happens through:

- **Assimilation**– Which is using an existing schema to deal with a new object or situation.

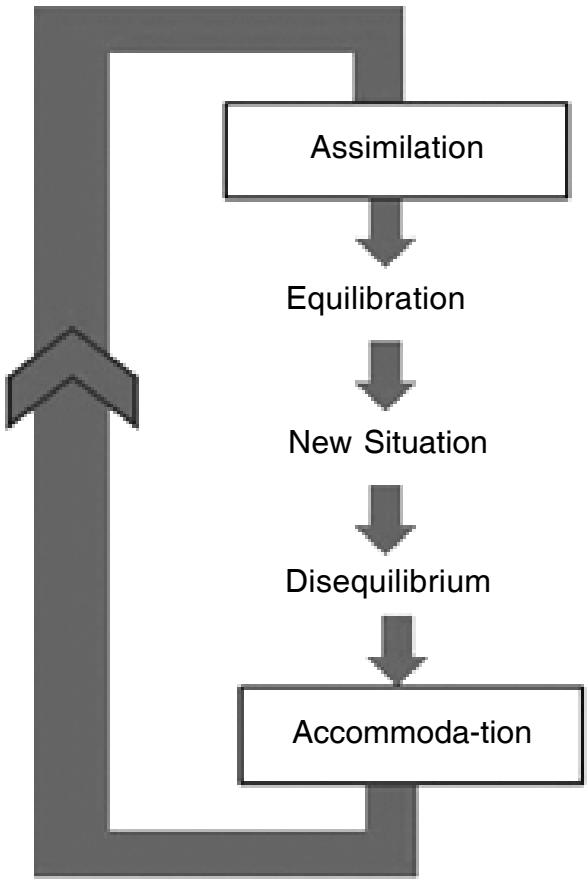
Example: A 2-year-old child sees a man who is bald on top of his head and has long frizzy hair on the sides. To his father's horror, the toddler shouts "Clown, clown" (Siegler et al., 2003).

- **Accommodation**– This happens when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation.

Example:In the "clown" incident, the boy's father explained to his son that the man was not a clown and that even though his hair was like a clown's, he wasn't wearing a funny costume and wasn't doing silly things to make people laugh.

With this new knowledge, the boy was able to change his schema of "clown" and make this idea fit better to a standard concept of "clown".

- **Equilibration**– This is the force which moves development along. Piaget believed that cognitive development did not progress at a steady rate, but rather in leaps and bounds.



Equilibrium occurs when a child's schemas can deal with most new information through assimilation. However, an unpleasant state of disequilibrium occurs when new information cannot be fitted into existing schemas (assimilation).

Equilibration is the force which drives the learning process as we do not like to be frustrated and will seek to restore balance by mastering the new challenge (accommodation). Once the new information is acquired the process of assimilation with the new schema will continue until the next time we need to make an adjustment to it.

3. Stages of Cognitive Development:

Piaget proposed four stages of cognitive development which reflect the increasing sophistication of children's thought:

a) Sensorimotor Stage (Birth-2 yrs)

The main achievement during this stage is object permanence - knowing that an object still exists, even if it is hidden.

It requires the ability to form a mental representation (i.e., a schema) of the object.

b) Preoperational Stage (2-7 years)

During this stage, young children can think about things symbolically. This is the ability to make one thing - a word or an object - stand for something other than itself.

Thinking is still egocentric, and the infant has difficulty taking the viewpoint of others.

c) Concrete Operational Stage (7-11 years)

Piaget considered the concrete stage a major turning point in the child's cognitive development because it marks the beginning of logical or operational thought.

This means the child can work things out internally in their head (rather than physically try things out in the real world).

Children can conserve number (age 6), mass (age 7), and weight (age 9). Conservation is the understanding that something stays the same in quantity even though its appearance changes.

d) Formal Operational Stage (11 years and over)

The formal operational stage begins at approximately age eleven and lasts into adulthood. During this time, people develop the ability to think about abstract concepts, and logically test hypotheses.

Stages of Cognitive Development as Proposed by Piaget	
Stage	Age (approx.)
Sensorimotor Stage	0 - 2 years
Pre-operational Stage	2 - 7 years
Concrete Operational Stage	7 - 11 years
Formal Operational Stage	11 years - adult

Educational Significance and Programmes of Intellectual Development:

Piaget mentioned four factors which influence the change in thinking - **biological maturation**, **activity**, **social experience** and**disequilibration**. He believed development is prompted to occur wheninformation does not fit with existing mental structure (**schema**) and then a new equilibrium has to be formed. Maturation is one of the most important factors for intellectual development. The activity or the active involvement of the child is very crucial in this respect. Social experience and social transmission or learning from others also play important role in this development. According to Brunner, thought involving direct physical experience (termed as **enactive mode**) is the earliest type of thought but this can be the basis of all initial learning, even in adult. Piaget emphasized the role of play in our cognitive development. On the other hand Vygotsky and Brunner highlighted that language is the main basis of knowledge and understanding. From the above discussion we can suggest certain education programmes to expedite this process.

- creating some disequilibrium conditions by stimulating a child with new information which s/he cannot explain or understand with his/ her existing mental structure.
- encourage children to interact more with others to increase social experience.
- provide opportunities to make children active.
- during infancy more care should be taken for the development of sense organs.
- during early childhood use concrete objects or visual aids whenever possible;
- give children a great deal of hands-on practice;
- provide wide range of experience for concept formation and language development.
- during late childhood provide them opportunities to classify and group objects;
- present problems that require logical and analytical thinking;
- and later give students opportunities to explore many hypothetical questions;
- ask open-ended question;
- encourage them to think divergently.

Check your Progress II

(Write your answer in the space and compare it with the Unit end answers)

1. **The three primary emotions during infancy are _____, _____ & _____.**
2. **The feeling that all things are living is called as _____.**
3. **Semoitic functioning refers to the child's ability to work with _____.**
4. **Imaginary fears develop during _____ stage.**
5. **The understanding that objects have separate and permanent existence is called _____.**

2.3.3.2: LANGUAGE DEVELOPMENT

Every living being might have some languages. But the way human being use language is quite different. We can use an extremely rich set of symbols and there are certain rules for using them. Language is essentially a set of signs and symbols, which have certain, fixed meanings, evoked in each society.

Different views of Language development

Social learning view proposes that speech is acquired through a combination of operant conditioning and imitation. Parents' praise or reward their children for making sounds as well as they often model sounds, words, or sentences for them. This type of learning contributes for acquisition

of language. Another view, proposed by Noam Chomsky, contends that human being has a **language -acquisition device (LAD)** - a built in neural system, which helps human being for acquisition of language. **Cognitive View** of language development, as proposed by Slobin, considers the importance of bothinnate mechanisms and also learning. It suggests that there must be certain information processing abilities (termed operating principles) in the children, which help in acquiring language.

There are two types of vocalization of a newborn infant - crying and explosive sounds (similar to heavy breathing), child starts to communicate with the help of some prespeech forms - crying, babbling (sounds like 'da-da', 'ma-ma', 'na-na' etc.) and gesturing.

Infancy The infant learns pronounced words by imitating adult speech. Vowels are easier to pronounce for them than consonants and diphthongs. At the age between 12 and 18 months, an infant can pronounce a word clearly. At first s/he learns the names of people and objects, then verbs and at the end of infancy s/he learns a few adjectives. Pronoun, conjunction or prepositions are not learned during the stage but s/he can use nearly 50 words. At the end of infancy stage, s/he can use two-word phrases (**telegraphic speech**).

Early childhood Child's vocabulary increases rapidly with many new words being learned eachday. At the age of six, most have a vocabulary of several thousand words. But the child faces some difficulties to pronounce certain sounds and sound combination like z, w, d, s, g, and st, str, dr, fl etc. After completing three years, the child forms 6 to 8 word sentences containing all parts of speech. Initially his/her speech at this stage is egocentric as s/he generally talks about himself/herself, but at the end of this stage his/her speech becomes socialized and s/he starts to talk about other people also. The children at this stage mainly talk about their personal likes and dislikes, clothes, living place and everyday routine.

Aspects of Language Development
Phonology: refers to the ability to pronounce sounds and words.
Semantics:refers to the meaning encoded in languages.
Syntax: refers to the forms in which words are arranged to make grammatical sentences in a given language.
Pragmatics: refers to knowledge about how language is used in different contexts.

Late childhood The children understand that speech is the most important way of gainingacceptance and so they try to learn to speak better. Not only that, they also learn that which forms of communication (like crying, gesturing) are not acceptable. At this stage, a child's vocabulary increases by leaps and bounds. Girls have larger vocabulary than boys in this stage. The child now makes fewer errors in pronunciation. In between the age of six and ten, the child has command over any forms of sentence structure, i.e. s/he can follow the grammar of the language.

Educational significance and programmes of Language Development

Human beings can communicate better than other living beings. Human language is characterized by wide vocabulary and structured **syntax**. Without language one cannot express his/her own

thoughts, it affects the other parts of development like social, emotional, etc. Hence a child should be helped to learn different aspects of language. During infancy, some pre-speech forms of communication develops like - crying, babbling, gestures. If these forms prove to be satisfactory and effective for communication, the infants' motivation to learn and speak will be weakened. A child learns to pronounce partly by trial and error but mainly by imitation. Therefore, parents and teachers must be serious in pronunciation when they talk to them. Use of effective language depends mainly on comprehension and this is greatly influenced by attentive listening. Listening to radio or television can be helpful in this regard. Initially, a child's speech is egocentric, as he/she talks mainly about himself/herself. But gradually this converts to socialize speech; child's play -group plays an important role in this respect. Small social groups are very helpful for language development. Therefore, social exposure is a good condition for language development. Parents or teachers should provide opportunities to develop listening, speaking, reading and writing skills. The educational programmes which could aid language development are —

- provide opportunities for children to converse.
- encourage playing word games.
- persuade story reading.
- help them learn nursery rhymes, singing, etc.
- provide opportunities to write in different ways.

2.3.3.3: MORAL DEVELOPMENT

You must face with some questions in your everyday life like what should you do? What you ought to do? And you have to take some decisions about what is right or what is wrong. All these questions are related to **morality**. Morality is concerned with the principles of right or wrong judgement. Moral development as defined by Kohlberg as the development of an individual's sense of justice. According to Baron, moral development refers to the changes in the ability to reason about what is right or what is wrong in a given situation. In the study of moral development there are two eminent psychologists namely L. Kohlberg and J. Piaget. In fact, Kohlberg has tried to extend and revise Piaget's theory of moral development.

Let us discuss about the views of Piaget and Kohlberg about an individual's moral development.

Piaget's Theory of Moral Development:

According to Piaget there are four stages of moral development, they are:

Anomy (0-5 years) — At this stage the behaviour of a child is not guided by any moral standards. The main responsible factors for the moral behaviour are pain and pleasure.

Heteronomy - Authority (5-9 years) — During this stage the moral behaviour is regulated byrewards and punishments of external authority (specially adults).

Heteronomy - Reciprocity (9-13 years) — During this stage morality is guided by conformitywith the group.

Autonomy (13-18 years) — This stage is characterized by reason, justice and mutual respect ofthe individuals and the individual is fully responsible for his behaviour.

Kohlberg's theory of Moral Development

This theory was influenced by Piaget's Moral Development and Cognitive Development Theory. For studying the moral development, Kohlberg posed some hypothetical moral dilemmas (which had no single correct or incorrect answer) to his subjects and asked them to give reasons for recommending a specific course of action. One of these dilemma (called **Heinz Dilemma**) is presented below:

A woman was near death from a unique kind of cancer. There was a drug that could save her. The drug cost $4000 per dosage. This sick woman's husband, Heinz, went to everyone he knew, to borrow the money and tried every legal means, but he could only get together about $2000. He asked the doctor scientist who discovered the drug for a discount or let him pay later. But the doctor refused. Being desperate, Heinz steals the drug. Should he have done so? Why or why not?

On the basis of responses from his subject, Kohlberg proposed that people progress through three levels (comprising six stages) in the respect to the development of moral reasoning.

(i) THE PRE-CONVENTIONAL MORALITY LEVEL: At this level, judgment is based on person'sown needs and perception. People at this stage do not really understand the conventions or rules of a society.

***Stage 1: Punishment-obedience Orientation* —** Morality is judged in terms of physicalconsequences. Rules are obeyed to avoid punishment. For example, at this stage the answer of Heinz dilemma might be "Heinz should not steal the drug because he might be caught and sent to jail". The concern is "will I get into trouble for doing (or not doing) it?"

Stage 2: Personal Reward Orientation (Naive Hedonistic Orientation) — Judgment is based onpersonal needs and interests. Morality is judged in terms of what satisfies own needs and occasionally the needs of others. The concern is "what is in it for me?" All the possible responses might be "It is right for Heinz to steel the drug because it can cure his wife and then she can cook for him."

(ii) THE CONVENTIONAL MORALITY LEVEL: At this level people conform to the conventions orrules of a society. They are aware of the social order and judge morality in terms of other's approval, family's expectations, traditional values, laws of the society etc.

Stage 3: Good Boy Nice Girl Orientation — Good behaviour is that which pleases or helps others and is approved by them. The concern is - "what will people think of me?". At this stage the possible answer might be "Yes, Heinz should steal the drug, then people will think he is a good husband."

Stage 4: Law and Order Orientation — At this stage, morality is judged by the laws and orderof the society. It is based on the consideration that authority must be respected and social order should be maintained, the concern now goes beyond one's immediate groups to the larger society for maintaining law and order. The probable answer at this stage might be "Heinz has a duty to save his wife, but it's wrong to steal, so he should be prepared to accept the penalty for breaking this law.

(iii) THE POST CONVENTIONAL MORALITY LEVEL: At this stage, peoples' judgment is basedon abstract principles and values that are not necessarily defined by existing rules or laws of society.

Components of Morality according to Shaffer

Cognition: Thoughts and decisions about moral issues. Emphasised by Piaget and Kohlberg.

Emotions: Feelings, such as guilt, connected to moral issues. Emphasised by Freud.

Behaviour: How we behave, and the extent to which we behave honourably or not. Emphasised by social learning theorists.

Stage 5: Social Contract orientation — Judgment is based in terms of general individual rightsand of standards agreed upon by the whole society. People of this stage demand the change of forms in term of rational consideration of social utility. The concern is social utility or public interests. The probable answer might be "Heinz should steal because everyone has the right to life and if necessary the law (against stealing) needs to be reinterpreted because a person's life in at stake".

Stage 6 : Universal Ethical Principle Orientation — Morality is judged by individual's conscience in accord with self-chosen ethical principles. The concern is universal principles of justice, equality and human dignity. The probable answer at this stage might be "Heinz should steal the drug to save his wife because preserving human life is higher moral obligation than preserving property".

There are certain criticisms of Kohlberg's Theory. The stages as proposed by him do not seem to be separate, sequenced and consistent in reality. An individual gives reasons for moral choices in different stages simultaneously. In moral reasoning there are some other reasons, which affect judgement, like emotions, competing goals, relationships, practical considerations, etc. Another important criticism raised by C. Gilligan that Kohlberg Theory is biased in favour of males and she proposed a different sequence of moral development based on '**ethic of care**'.

Educational significance and programmes of Moral Development

According to Kohlberg, everyone goes through the stages of morality sequentially without skipping any stage. People cannot understand moral reasoning more than one stage ahead of their own. People do not automatically move from one stage of morality to the next as they mature. Movement is effected when cognitive dissonance occurs, which means when a person notices inadequacies in his/ her present way of coping with a given moral dilemma. An individual should be helped to learn moral reasoning by discussing moral dilemmas that he is likely to face in his/ her daily life. For discussing a moral dilemma group should be heterogeneous and interaction among individuals should be encouraged. With the help of various curricular and co-curricular activities in school, the moral qualities of the students would be developed, like celebrating festivals of different religions, including national days, highlighting the teaching of saints, addressing school assembly, showing appropriate films, dramas, etc. Some educational programmes suggested for moral development are as below.

- ❖ highlighting the preachings of saints and seers.
- ❖ celebrating festivals including National Days and different religions.
- ❖ arranging community and school get-togethers.
- ❖ organizing educational trips and excursions.
- ❖ addressing daily school assemblies.
- ❖ discussing different moral dilemmas about real life.
- ❖ encourage students to make judgements about an issue.

Check your Progress III

(Write your answer in the space and compare it with the Unit end answers)

1. **Telegraphic speech is the characteristic at _____ stage.**
2. **Syntax of language is related with _____.**
3. **The final stage of moral development as proposed by Piaget is _____.**
4. **According to Kohlberg, morality judged by one's conscience, is the characteristic of _____ stage.**
5. **LAD means _____ _____ _____.**

2.3.4: LET US SUM UP

Piaget contributed a lot in understanding of intellectual development of human beings. At first, infants can think with their senses and actions, but finally, at adolescence they can solve their own problems by hypothetico-deductive thinking. Social exposure, activity, maturation play important role in intellectual development.

An infant has two types of vocalization - crying and explosive sound, but at the end of late childhood s/he is able to use all forms of language. Parent's correct pronunciation, radio, TV, peer group play important role in language development.

Morality is what one ought to do. Piaget and Kohlberg proposed two theories of Moral Development. Kohlberg mentioned three levels of morality each comprising of two stages. Cognitive dissonance is very important for moral development.

2.3.5: ASSIGNMENT

1. Suggest educational programmes for intellectual development of human being after describing the general characteristics of this developmental aspect.
2. Explain how language develops in a human baby starting from infancy and discuss the educational significance of this development.
3. What do you understand by moral development? Describe the theory of moral development as proposed by Piaget and Kohlberg. How can moral development be aided through various educational programmes?
4. Considering the 'Heinz's Dilemma' of Kohlberg's Theory, explain the probable answers of each stage.

2.3.6: SUGGESTED READINGS

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2.3.7: ANSWERS TO 'CHECK YOUR PROGRESS'

Check your Progress I

1. love, fear and anger
2. animism
3. symbols
4. early childhood
5. object permanence

Check your Progress II

1. infancy
2. grammar
3. autonomy
4. Universal Ethical Principle Orientation
5. Language Acquisition Device

Block – 3

Mental Health & Stress

Unit - 1

Mental Health and Adjustment

CONTENT STRUCTURE:

3.1.1: Introduction

3.1.2: Learning Objectives

3.1.3: Mental Health: Meaning and Concept

3.1.4: Characteristics of a Mentally Healthy Person.

3.1.5: Mental Health and Adjustment

3.1.6: Strategies for Promoting Mental Health

3.1.7: Let us Sum up

3.1.8: Assignment

3.1.9: Suggested Readings

3.1.1: INTRODUCTION

The aspects of development discussed in previous Block, if assumed to be well accomplished and coordinated would expectantly give us a human being who is well developed and healthy. Now the obvious question arises about what a 'healthy' human being implies. Health is a positive concept, as more than 190 signatory member states of World Health Organisation have endorsed. The WHO definition of health implies that mental health cannot be achieved merely by preventing or treating disorders. It must address the broader issues affecting the mental well-being of all sections of society. We are generally inclined to believe that a healthy human being is one who is physically fit, but do you think this is true? Obviously not. Being healthy not only requires a human being to be physically fit but also mentally sound. This leads to the concept of mental health. In this unit we are going to discuss Mental Health and its Adjustment Procedures.

3.1.2: LEAENING OBJECTIVES

After going through this Unit, you will be able to —

1. Understand the concept and importance of adjustment and mental health;

2. Conceptualize the different models of adjustment;

3. Recognise the characteristics of a mentally healthy individual;

4. Analyse and understand the different adjustment mechanisms which persons use.

3.1.3: MENTAL HEALTH: MEANING AND CONCEPT

Mental Health is the balance between all aspects of life - social, physical, spiritual and emotional. It impacts on how we manage our surroundings and make choices in our lives - clearly it is an integral part of our overall health. Mental health is not mere absence of mental illness. It is the ability to respond to the many varied experiences of life with flexibility and a sense of purpose. It is the capacity of an individual to form harmonious relations with his/her social and physical environment, and to achieve a balanced satisfaction of his/her own drives. Freud's definition of health as the capacity "to work and to love" is widely accepted by mental-health specialists as simple and accurate. Mental Health is actually the successful performance of mental functions, resulting in productive activities, fulfilling relationships with other people and the ability to adapt to change and cope with adversity.

Mental Health and Mental Hygiene

Mental Hygiene deals with the science and practice of maintaining and restoring mental health, and of preventing mental disorder through education, early treatment, and public health measures.

Mental health is a vital component of the total health of an individual because our entire thought process takes place in mind, ideas originate in mind and all kinds of directions are issued from mind which guide, shape and regulate communication, conduct and behaviour and determine personal and social functioning as well as adjustment (Bhargava and Raina, 2007).

Good health depends on the state of both mind and body. Health generally means sound condition, or well-being, or freedom from disease. Mental health, therefore, may refer to a sound mental condition or a state of psychological well-being or freedom from mental diseases.

3.1.4: CHARACTERISTICS OF A MENTALLY HEALTHY PERSON

The characteristics of a mentally healthy person are discussed below:

1. The ability to enjoy life — The ability to enjoy life is essential to good mental health. We need to plan for the future at times and we also need to learn from the past; but too often we make ourselves miserable in the present by worrying about the future. Our life metaphors are important factors that allow us to enjoy life.

2. Resilience — The ability to bounce back from adversity is referred to as "resilience". It is a long known fact that some people handle stress better than others. Why do some individuals raised in alcoholic or broken families do well, while others have repeated problems in life? The characteristic of "resilience" is shared by those who cope well with stress.

3. Balance — Balance in life seems to result in greater mental health. We all need to balance time spent socially with time spent alone. Those who spend all of their time alone may get labelled as "loners", and they may lose many of their social skills. Extreme social isolation may even result in a split with reality. Those who ignore the need for some solitary times also risk such a split. Balancing these two needs seems to be the key - although we all balance these differently. Other areas where balance seems to be important include the balance between work and play, the balance between sleep and wakefulness, the balance between rest and exercise, and even the balance between time spent indoors and time spent outdoors.

4. Flexibility — We all know people who hold very rigid opinions. No amount of discussion can change their views. Such people often set themselves up for added stress by the rigid expectations that they hold. Working on making our expectations more flexible can improve our mental health. Emotional flexibility may be just as important as cognitive flexibility. Mental healthy people experience a range of emotions and allow themselves to express these feelings. Some people shut off certain feelings, finding them to be unacceptable. This emotional rigidity may result in other mental health problems.

5. Self-actualization — What have we made of the gifts that we have been given? We all know people who have surpassed their potential and others who seem to have squandered their gifts. We first need to recognize our gifts, of course, and the process of recognition is part of the path toward self-actualization. Mentally healthy persons are persons who are in the process of actualizing their potential. In order to do this, we must first feel secure.

These are just a few of the concepts that are important in attempting to explain mental health. The ability to form healthy relationships with others is also important. Adult and adolescent mental health also includes the concepts of self-esteem and healthy sexuality. How we deal with loss and death is also an important element of mental health. According to Hadfield mental health is the full and free expression of all our native and acquired potentialities, in harmony with one another by being directed towards a common end or aim of the personality as a whole. He has also identified a standard of mental health that in principle applies to everyone but as each of us is born with different potentialities and also acquires differently from the varied experiences in life, it differs in practice for each individual. Accordingly, mental health is the functioning of the whole organism towards an end, not an attainment of a certain state: it is not stagnation but a harmony of movement, living and active. Hadfield has also identified other standards for the purpose, all legitimate in their way and for the purpose for which they are designed, viz., biological efficiency, social adaptation and ethical ideals.

3.1.5: MENTAL HEALTH AND ADJUSTMENT

We see that a mentally healthy person requires to adapt himself in a number of ways. It also implies a large degree of adjustment to the social environment, as indicated by the satisfaction

derived from interpersonal relationships, as well as achievements. It is the psychological state of someone who is functioning at a satisfactory level of emotional and behavioural adjustment. Generally, adaptation is a terminology used in biological sciences but in psychology the term adjustment is used *in lieu* of adaptation.

Adjustment does not only cater to the demands of an individual, but also to the demands and expectations of the society of which he is a part. It may thus be stated that adjustment is a state or condition in which lie individuals behaviour conforms to the demands of the culture or society to which he belongs and at the same time, he feels that his own needs have been or will be fulfilled. Psychologists often define adjustment as a compromise between the needs of the individual andthe demands of the society in which he lives.

Most activities of living organisms are directed to make them more comfortable and peaceful in their relationship with the environment. Human behaviour normally represents an effort on the part of the organism to avoid tension, trouble and other unpleasant consequences. By and large, behaviour is always an effort towards adjustment. The process by which a living organism acquires a particular way of acting or behaving or changes an existing form of behaviour or action is called adjustment. According to the dictionary of behavioural science by Wolman, 'adjustment is harmonious relationship with the environment, involving the ability to satisfy most of one's needs and meet most of the demands both physical and social that are put upon one'. According to White, 'adjustment represents a compromise between the needs of the individual ademand of the society in which he lives', therefore you can say that adjustment is the perfect relationship with the environment involving the satisfaction of needs and demands of an individual.

An individual has to adjust both to external and internal conditions. **External adjustments** are of two types; one is **physical adjustment** (adjustment with physical conditions like weather, time, etc.) and the other **social adjustment** (adjustment with the people around us). Likewise, **internal adjustments** are also of two types, **biological adjustment** (adjustment with biological conditions like hunger) and **psychological adjustment**.

An individual always makes adjustive behaviour to adapt with his/her environment. But, all adjustive behaviours may not be effective. The range of adjustive behaviours can range from a high degree of effectiveness to total ineffectiveness. In extreme cases, the ineffectiveness may create further problems of adjustment. In such cases, the individuals are known as **maladjusted**. On the other hand, in instances where the behaviour of the individual, while not contributing to effective adjustment, does not however, result in a disruption of existing conditions, the behaviour is said to be **non adjustive**. There are several causes of non-adjustive and mal adjustive behaviour, like non-development or under development of certain needs or exaggerated needs, unrealistic needs, frustration, conflicts, etc. There are also certain mechanisms for solving these sorts of behaviours.

3.1.6:STRATEGIES FOR PROMOTING MENTAL HEALTH

There is a strong reciprocal relationship between school and mental health as because, education plays an important role in promoting mental health and good mental health promotes success in the school setting. Mental health is an important component of a child being "ready to learn"; if a child is experiencing mental health problems, s/he will likely have trouble focusing in school activities. Very often we assume that dealing with mental health is about a specialist activity — something that a mental health professional deal with. This is not the case, schools and teachers can and do provide environments in which young people's mental health can be promoted and can often even provide supportive and facilitating factors for young people who may already be experiencing difficulties. Some general tips for promoting mental health are as below.

- Help children relate to others and build their confidence by giving children a chance to talk about experiences and feelings.
- Encourage exercise and sports.
- Suggest involvement in after-school activities.
- Encourage strong family relationships.
- Spend time with children daily, listening to them and talking to them about what is happening in their lives.
- Provide unconditional love and support to children.
- Teach and model tolerance and understanding about mental illness.
- Use teaching methods that reinforce the development of a sense of personal and social responsibility.

3.1.7: LET US SUM UP:

Good mental health means harmonious functioning of the whole personality. It is the ability to adjust with the environment in all respect.

The characteristics of a mentally healthy person includes - the ability to enjoy life, resilience, balance, flexibility and self actualization.

There is a strong reciprocal relationship between school and mental health as because, education plays an important role in promoting mental health and good mental health promotes success in the school setting.

Adjustment refers to the perfect relationship between an individual and the environment for satisfying one's needs and demands. Failure of adjustive behaviour results in non adjustive or mal adjustive behaviour.

3.1.8: ASSIGNMENT:

1. Discuss the Meaning and Nature of Mental Health.

2. What are the Characteristics of a Mentally Healthy Person?

3. Explain the Strategies for promoting Mental Health.

4. Elaborate the relation between mental health and adjustment.

3.1.9: SUGGESTED READINGS

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Block – 3

Unit – 2

Stress, Anxiety and Their Management

CONTENT STRUCTURE

3.2.1 : Introduction

3.2.2 : Objectives

3.2.3 : Concept of stress and its management

3.2.3.1 : Introduction

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Questions for checking progress

3.2.4 : Test anxiety

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3.2.4.2 : Concept and nature of Test Anxiety

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3.2.5 : Conflicts and Complexes

3.2.5.1 : Introduction

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3.2.5.3 : Psychology of Complexes

Questions for checking progress

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3.2.6.1 : Introduction

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Questions for checking progress

3.2.7 : Adjustment mechanisms

3.2.7.1 : Introduction

3.2.7.2 : Different adjustment / defense mechanisms

Questions for checking progress

1.3.8 : Let Us Sum Up

1.3.9 : Assignment

1.3.10 : Suggested Readings

3.2.1 : INTRODUCTION

The modern world, which is said to be a world of achievements, is also a world of stress. One finds stress everywhere, whether it be within the family, business organization, or any other social or economic activity. Right from the time of birth till the last breath drawn, an individual is invariably exposed to various stress situations. The current complexity of civilization, the rapidity of change, and the loss of some traditional religious and familial values are creating new conflicts and anxieties. In fact, the present century is being manifested as the 'Age of Anxiety and Stress'. Stress and its concomitant anxiety is an inevitable phenomenon of life. Psychologically speaking, life would be enjoying indeed if one's biological and psychological needs were automatically gratified. But there are many obstacles, both environmental and personal, that may interfere. Such obstacles place adjustive demands or stress on the individual and produces obvious anxiety. Adjustive demands may be classified as frustrations, conflicts, and pressures. All these are, however, closely interrelated. But the relation between stress and anxiety is not so simple and linear. Personal anxiety may generate occasional stress. On the other hand, stress and anxiety are not always harmful; sometimes they are required to energize ourselves. Thus, as a student of psychology, viz. Educational Psychology, you have to know and understand the psychological nature of these two constructs, and how to manage yourself in stressful life situation in order to become mentally healthy and emotionally poised.

In the following discussion you will get some orientations about the concepts like psychosocial stress, test-anxiety, psychological conflicts and complexes, mental frustration and anxiety. Though they will be presented separately and one by one, in reality they are not separable. An individual may be somehow conflict-ridden, may develop certain complex, may somehow frustrated and anxious - and, it may be that each is due to some external or internal causes. However, in either of the cases, the individual will experience stress. As a student, you surely have had some experiences of stress regarding your exams. But have you ever thought of test-anxiety? Have you ever identified some of your friends suffering from that? So, let's go through the concepts. It will help your daily living.

3.2.2 : OBJECTIVES

After going through this Unit you will be able —

- To understand the concept and nature of psychosocial stress
- To understand how to manage such stresses

- To understand the psychological nature of test-anxiety and its management
- To understand the concepts like conflict, complex, frustration and anxiety
- To understand their interrelationships
- To understand the mechanisms of adjustment and their uses in life situations.

3.2.3 : CONCEPT OF STRESS AND ITS MANAGEMENT

3.2.3.1 : INTRODUCTION

Life without stimulus would be incredibly dull and boring. Life with too much stimulus becomes unpleasant and tiring, and may ultimately damage our health or well-being. Too much stress can seriously interfere with our ability to perform effectively. Stress is the "wear and tear" our bodies experience as we adjust to our continually changing environment; it has physical and emotional effects on us and can create positive or negative feelings. **As a positive influence**, stress can help compel us to action; it can result in a new awareness and an exciting new perspective. **As a negative influence**, it can result in feelings of distrust, rejection, anger, and depression, which in turn can lead to health problems such as headaches, upset stomach, rashes, insomnia, ulcers, high blood pressure, heart disease, and stroke.

Stress is a part of day to day living. As college students you may experience stress meeting academic demands, adjusting to a new living environment, or developing friendships. The stress you experience is not necessarily harmful. Mild forms of stress can act as a motivator and energizer. However, if your stress level is too high, medical and social problems can result.

With the death of a loved one, the birth of a child, a job promotion, or a new relationship, we experience stress as we readjust our lives. In so adjusting to different circumstances, stress will help or hinder us depending on how we react to it.

The concept of stress was first introduced in the life sciences by Hans Selye in 1936. It is a concept borrowed from natural sciences. In psycho-physiology, stress refers to some stimulus resulting in a detectable strain that cannot be accommodated by the organism and which ultimately results in impaired health and behaviour.

3.2.3.2: CONCEPT AND NATURE OF STRESS

In psychology, stress is generally considered from its negative point of view. In that sense, stress is an unpleasant state of emotional and physiological arousal that people experience in situations that they perceive as dangerous or threatening to their well-being. The word 'stress' means different things to different people. Some people define stress as events or situations that cause them to feel tension, pressure, or negative emotions such as anxiety and anger. Others view stress as the response to these situations. This response includes physiological changes-such as increased heart rate and

muscle tension-as well as emotional and behavioural changes. However, most psychologists regard stress as a process involving a person's interpretation and response to a threatening event.

The circumstances that cause stress are called **stressors**. Stressors vary in severity and duration. Stressors can be classified into three general categories: catastrophic events, major life changes, and daily hassles. In addition, simply thinking about unpleasant past events or anticipating unpleasant future events can cause stress for many people. Most people realise that aspects of their work and lifestyle can cause stress. While this is true, it is also important to note that it can be caused by our environment and by the food and drink we consume. There are several major sources of stress:

- **Survival Stress:** this may occur in cases where our survival or health is threatened, wherewe are put under pressure, or where we experience some unpleasant or challenging event. Here adrenaline is released in our body and we experience all the symptoms of our bodypreparing for 'fight or flight'.
- **Internally generated stress:** this can come from anxious worrying about events beyond ourcontrol, from a tense, hurried approach to life, or from relationship problems caused by our own behaviour. It can also come from an 'addiction' to and enjoyment of stress.
- **Environmental and Job stress:** here our living or working environment causes the stress. Itmay come from noise, crowding, pollution, untidiness, dirt or other distractions. Alternatively stress can come from events at work.
- **Fatigue and overwork:** here stress builds up over a long period. This can occur where wetry to achieve too much in too little time, or where we are not using effective time management strategies.

Although we tend to think of stress as caused by external events, events in themselves (except natural calamities) are not stressful. Rather, it is the way in which we interpret and react to events that makes them stressful. There are several signs and symptoms that you may notice when you are experiencing stress. These signs and symptoms fall into four categories: Feelings, Thoughts, Behaviour, and Physiology. When you are under stress, you may experience one or more of them. Accordingly, short-term or long-term nature of stress can be identified.

While a certain level of stress is necessary to avoid boredom, high levels of stress over a sustained period can damage our health. The strategies that we should adopt to manage stress depend on the source of that stress.

3.2.3.3 : MANAGEMENT OF STRESS

Under this topic you will find two concepts - coping strategies and management techniques. The former is associated with the 'internal' conditions, and the latter with the development of certain 'skills'.

Coping strategies

Coping with stress means using thoughts and actions to deal with stressful situations and lower our stress levels.

Many people have a characteristic way of coping with stress based on their personality. People who cope well with stress tend to believe they can personally influence what happens to them. They usually make more positive statements about themselves, resist frustration, remain optimistic, and persevere even under extremely adverse circumstances. Most importantly, they choose the appropriate strategies to cope with the stressors they confront. Conversely, people who cope poorly with stress tend to have somewhat opposite personality characteristics, such as lower self-esteem and a pessimistic outlook on life.

Psychologists distinguish two broad types of coping strategies: **problem-focused coping** and **emotion-focused coping**. The goal of both strategies is to control one's stress level. In problem-focused coping, people try to short-circuit negative emotions by taking some action to modify, avoid, or minimize the threatening situation. They change their behaviour to deal with the stressful situation. It also involves **appraisal-focused coping** which includes such strategies as logical analysis and cognitive redefinition.In emotion-focused coping, people try to directly moderate or eliminate unpleasant emotions. Examples of emotion-focused coping include rethinking the situation in a positive way, relaxation, denial, and wishful thinking.

In general, problem-focused coping is the most effective coping strategy when people have realistic opportunities to change aspects of their situation and reduce stress. Emotion-focused coping is most useful as a short-term strategy. It can help reduce one's arousal level before engaging in problem-solving and taking action, and it can help people deal with stressful situations in which there are few problem-focused coping options.

Management techniques

You can manage your stress successfully if you develop the following skills through practice:

- Become aware of your own reactions to stress.
- Reinforce positive self-statements.
- Focus on your good qualities and accomplishments.
- Avoid unnecessary competition.
- Develop assertive behaviors.
- Recognize and accept your limits. Remember that everyone is unique and different.
- Get a hobby or two. Relax and have fun.
- Exercise regularly.
- Eat a balanced diet daily.
- Talk with friends or someone you can trust about your worries/problems.
- Learn to use your time wisely:

- ✓ Evaluate how you are budgeting your time.
- ✓ Plan ahead and avoid procrastination.
- ✓ Make a weekly schedule and try to follow it.

- Set realistic goals.
- Set priorities.
- When studying for an exam, study in short blocks and gradually lengthens the time you spend studying. Take frequent short breaks.
- Practice relaxation techniques. For example, whenever you feel tense, slowly breathe in and out for several minutes.

Remember that the stress you experience is something that is largely under your control, that stress can come from a range of different sources, and that many stresses can be changed, eliminated, or minimized. By using a stress diary, you can monitor and understand the causes of stress in your life. The diary can help you to evaluate your performance under stress. Once you understand what is causing you stress, you can make an action plan for stress management. This gives you positive goals to work towards.

Questions

We've tried to understand the psychological nature of stress and how to cope with it, and how to manage it. Let us review the topic by self questioning —

Question :

Let Us Check Our Progress

1. What do you mean by 'stress'?
2. What are the sources of stress?
3. What is problem-focused coping?
4. Name two / three practices that you should do if in stress.

3.2.4: TEST ANXIETY

3.2.4.1: INTRODUCTION

Generally, we all experience some level of nervousness or tension before tests or other important events in our lives. A little nervousness can actually help motivate us; however, too much of it can become a problem - especially if it interferes with our ability to prepare for and perform on tests. Most students experience some level of anxiety during an exam. However, when anxiety begins to affect exam performance it has become a problem.

It's pretty normal to feel a little nervous and stressed before a test. Just about everyone does. And a touch of nervous anticipation can actually help you get revived and keep you at peak performance while you are taking the test. But for some people, this normal anxiety is more intense. The nervousness they feel before a test / exam. can be so strong that it interferes with their concentration or performance. This type of anxiety and nervousness brings the importance of the concept 'test anxiety'.

3.2.4.2: CONCEPT AND NATURE OF TEST ANXIETY

Suppose that you have participated in class, done all of your homework, studied hard, and you think you have a grip on the material. But then the day of the test comes. Suddenly, you blank out, freeze up, zone out, or feel so nervous that you can't get it together to respond to those questions you knew the answers to just last night.

If this sounds like you, you may have a case of test anxiety - that nervous feeling that people sometimes get when they're about to take a test.

Thus, test anxiety is actually a type of **performance anxiety** - a feeling someone might have in a situation where performance really counts or when the pressure is on to do well. In actual situation test anxiety can bring on "butterflies", a stomachache, or a tension headache. Some people might feel shaky, sweaty, or feel their heart beating quickly as they wait for the test to be given out. A student with really strong test anxiety may even feel like he or she might pass out or throw up.

But **remember that** test anxiety is not the same as doing poorly on a certain test because your mind is on something else like death of someone close or some disturbances in your personal life.

All anxiety is a reaction to anticipating something stressful. The same is true to test-anxiety also.

Like other anxiety reactions, test anxiety affects the body and the mind. When you're under stress, your body releases the hormone **adrenaline**, which prepares it for danger (this is referred to as the "fight or flight" reaction). That is what causes the physical symptoms, such as sweating, a pounding heart, and rapid breathing. These sensations might be mild or intense.

Focusing on the bad things that could happen also fuels test anxiety. For example, someone worrying about doing poorly might think thoughts like, "What if I forget everything I know?" or "What if the test is too hard?" Too many thoughts like these leave no mental space for thinking about the test questions. People with test anxiety can also feel stressed out by their physical reaction and think things like "What if I throw up?" or "Oh no, my hands are shaking."

It is normal to feel nervous about an exam. A little tension can give you just the right amount of adrenaline you need to do your best. However, if your level of stress rises too high, it can result negatively in your performance on the examination, even can end in failure. This performance anxiety is called test anxiety. It is psycho physiological as well as psychosocial in nature.

Just like other types of anxiety, test anxiety can create a vicious circle: The more a person focuses on the bad things that could happen, the stronger the feeling of anxiety becomes. This makes the person feel worse and, because his or her head is full of distracting thoughts and fears, it can increase the possibility that the person will do worse on the test.

Besides, other factors which generate test anxiety are lack of preparation as indicated by cramming the night before the examination, poor time management., failure to organize text information and poor study habits,

and/or worrying about past performance on exams, how friends and other students are doing, the negative consequences of failure, and the like.

3.2.4.3 : MANAGEMENT OF TEST ANXIETY

There are a number of strategies, counselors have recommended for reducing test anxiety and managing such stress. Basically, these concentrate on two factors - (1) academic like study habits and study environment, and (2) psychological like some auto-suggestions. In a nutshell you can follow the 'do's and 'don't's given below in order to deal with test anxiety successfully —

- **Don't** cram for an exam. The amount you learn won't be worth the stress.
- **Don't** think of yourself or the test in a negative sense.
- **Don't** stay up late studying the night before. You need the sleep. Begin studying a week inadvance if possible.
- **Don't** spend time with classmates who generate stress for you on test day.
- **Don't** take those last few moments before the test for last minute cramming. Try to relaxand spend that time reading the newspaper or some other distraction.
- **Do** remind yourself that the test is only a test.
- **Do** focus on integrating details into main ideas.
- **Do** reward yourself after the test with food or a movie or some other treat.
- **Do** something relaxing the last hour before the test.
- **Do** tell yourself that you will do your best on the test, and that will be enough.

The effect of test anxiety is detrimental to your mental and physical health. So you have to manage it if and when it occurs. There are so many remedial measures. Best strategies are to be psychologically a positive being, academically a sincere learner and physically a fit person who can take test as a test, can take preparation following adequate study habits and can maintain physical health with proper exercise and good food habits.

Questions

We've tried to understand the psychology of 'Test Anxiety'. Let us review the topic by self questioning —

Question :

Let Us Check Our Progress

1. What do you mean by 'test anxiety'?
2. Why is it psycho physiological in nature?
3. Why is it psychosocial in nature?
4. Suggest some remedial measures.

3.2.5: CONFLICTS AND COMPLEXES

3.2.5.1: INTRODUCTION

Everyday experience suggests **conflict** cannot be avoided in interaction with others as well as within oneself. Interpersonal and / or intrapersonal conflicts generate stresses. But to understand Stress Psychology, intrapersonal / intrapsychic conflict is more vital than interpersonal or social conflict. In many instances stress results from the necessity of choosing between two needs or goals. Usually, the choice of one alternative means frustration with regard to the other. The key element in conflict is often the frustration that arises when we must choose one alternative and give up the other. In addition, this type of choice commonly involves "cognitive strain".

Psychological complex is another genesis from which stress results. In psychology a **complex** is generally an important group of unconscious associations, or a strong unconscious impulse lying behind an individual's otherwise mysterious condition: the detail varies widely from theory to theory. However, their existence is quite widely agreed upon in the area of depth psychology at least, being instrumental in the systems of both Sigmund Freud and Carl Gustav Jung, a collaborator of Freud.

3.2.5.2: PSYCHOLOGY OF CONFLICTS

Conflict is difficult to define. It involves a struggle for mastery, a combat to overcome, active opposition, strife, etc. However, in any case, conflict involves opposing forces and differing objectives. Thus, it can be defined as a painful state of mind resulting from the simultaneous presence of opposing or mutually exclusive impulses, desires or tendencies. We all display predispositions when faced with conflict; some approach, some withdraw; orientation involves beliefs and perceptions. Some see opportunity in conflict, some destruction; some want to face and resolve; some want to win. Our orientations change from situation to situation.

A major source of frustration is conflict between two opposing motives. When two motives conflict, the satisfaction of one leads to the frustration of another. Even when only one motive is involved, there may be various ways of approaching the goal, and conflict arises when the paths to the goal diverge. Sometimes conflict arises between a motive and a person's internal standards, rather than between two external goals. This type of conflict can often be more difficult to resolve than conflicts between external goals.

Most conflicts involve goals that are simultaneously desirable and undesirable - both positive and negative. A person confronted by a goal at once attractive and dangerous vacillates while trying to decide what to do. The dangers seem less real when the goal is at a distance, but the sense of danger increases as the goal is approached. In this type of situation comes the concept of 'approach-avoidance' conflict. Approach-approach conflict occurs in a situation of indecision and vacillation

when an individual is confronted with two equally attractive alternatives. Approach-avoidance conflict occurs in a situation of indecision and vacillation when the individual is confronted with a single object or event which has both attractive and unattractive qualities. Kurt Lewin elaborated this concept by viewing that conflict occurs when a person experiences demands or desires that are incompatible with each other. In approach-approach conflict we are attracted to two equally desirable goals. In avoidance-avoidance conflict we must choose between two equally undesirable demands. In approach-avoidance conflict we have one goal that has positive and negative aspects. And in double approach-avoidance conflict we experience two or more goals, both of which have positive and negative aspects.

There are other types of conflict as well. For example, there is **role conflict**, which involves conflict between expectations for how people will act. This can be a **conflict between the person and the role**, which would involve a person being assigned a role that they are not comfortable with (i.e., a role that is inconsistent with or in conflict with their personality), or **intra-role conflict**, which would occur when a person feels conflict between the different demands of a single role (e.g., conflict a parent feels between being a friend to their children but also being a disciplinarian), or **inter-role conflict**, which occurs when a person feels demands to play more than one role (e.g., an employee being asked to do one set of tasks by one supervisor and another conflicting set of tasks by another supervisor).

Besides all these, there are intrapsychic conflicts popularly known as 'mental / internal conflict'. In true sense, this psychological conflict occurs at the person's unconscious level of mind, and can be explained by the tripartite model of Freudian psychoanalysis where mind experiences continuous conflict among three coexisting contradictory forces - impulsivity, morality and reality. The ways the person resolves his internal conflicts manifest his nature of mental healthiness and adaptability.

In our society the approach-avoidance conflicts that are most pervasive and difficult to resolve generally take place in the areas like 'independence versus dependence', 'cooperation versus competition' and 'impulse expression versus moral standards'. These three areas present the greatest potential for serious conflict and consequent stresses, and failure to find a workable compromise may lead to severe psychological problems.

In fact, genesis of conflict is certain disequilibrium. Whether the imbalance is external, between the pressures of the outside world and the patient's ego, or internal, between the patient's impulses (e.g. aggressive, sexual, or dependent) and conscience, the imbalance produces a conflict. Conflicts caused by external events are usually termed 'interpersonal', whereas those caused by internal events are called intrapsychic or intrapersonal. A combination of the two is possible. In effect, interpersonal and intrapsychic conflicts are usually combined because human beings are social animals and their main conflicts are with other people. Conflict seems to be another essential ingredient of anxiety.

But regardless of categories, conflicts represent a major source of stress and can be overwhelming in their intensity. In general, conflicts are dysfunctional in nature. It disrupts, hinders job performance, and upsets personal psychological functioning.

3.2.5.3 : PSYCHOLOGY OF COMPLEXES

The complex is a meaningful feeling-toned group of representations in the unconscious level of human mind. It is one of the concerns of depth psychology which is a psychoanalytic approach examining the depth (the hidden or deeper parts) of human experience. The term "complex", or "feeling-toned complex of ideas", was adopted by Jung, a contemporary psychoanalyst to Freud and the propagator of Analytical Psychology. But it is Theodor Ziehen who is credited with coining the term in 1898. Jung is recognized for explaining this psychic phenomenon carefully. After Jung, Alfred Adler introduced in his Individual Psychology the two most popular and universally spoken complexes like superiority complex and inferiority complex. Thus, psychological complex which originate significant stresses has been sincerely dealt in psychoanalytic psychology.

Jung described a "complex" as a "node" in the unconscious; it may be imagined as a knot of unconscious feelings and beliefs, detectable indirectly, through behaviour that is puzzling or hard to account for. The nucleus of any complex is an emotionally charged core which functions like a magnet, gathering to itself by lines of association a cluster of ideas, images, memories and feelings. The resultant constellation has qualities of coherence, energy, autonomy, and self-personification. It is highly sensitive and reactive; in the vernacular, it is "touchy", a "loaded subject", a "sore spot", etc. When triggered, it manifests itself by emotional upset and disturbance of normal ego functioning. It seeks expression while resisting consciousness, and thus often becomes a distinctive feature of the personality visible to others while remaining obscure to its processor. In Jungian sense, complex is not undesirable but it forces and mediates the growth of psyche, and the accompanying "growing pains" are an inevitable part of the development of realistic consciousness.

"The existence of a complex only means that something incompatible, unassimilated, and conflicting exists - perhaps as an obstacle, but also as a stimulus to greater effort, and so, perhaps, as an opening to new possibilities of achievement" — C. G. Jung.

Whether the complexes remain merely a cause of pain or disruption, or whether it fulfills its "seminal function" depends essentially on the individual ego's capacity to accept that which is, in its origin and essence, unacceptable. If the ego does not succeed, the conscious mind fells a victim to the complex, and is in greater or lesser degree engulfed by it. But if the process is successful, there is a rich reward, not just the alleviation of distress, but a positive enlargement of the personality, and mobilization on the road to growth.

However, Adler presented his views of psychological complex from the perspective of pathology. An **inferiority complex** is a feeling that one is inferior to others in some way. Such feelings can arise

from an imagined or actual inferiority in the afflicted person. It is often subconscious, and is thought to drive afflicted individuals to overcompensate, resulting either in spectacular achievement or extreme antisocial behaviour, or both. Unlike a normal feeling of inferiority, which can act as an incentive for achievement, an inferiority complex is an advanced state of discouragement, often resulting in a retreat from difficulties. On the other hand, **superiority complex** refers to a subconscious neurotic mechanism of compensation developed by the individual as a result of feelings of inferiority. The term was coined by Alfred Adler as part of his school of Individual Psychology. Those exhibiting the superiority complex commonly project their feelings onto others they perceive an inferior to themselves. Accusations of arrogance and cockiness are often made by others when referring to the individual exhibiting the superiority complex. Superiority and Inferiority complexes are often found together as the different expressions of the same pathology.

When the conflict seems irresolvable for consciousness, when its desires are continually thwarted, we often find that it is the contents of the collective psyche that are intractable. If a complex remains only a greater or lesser strange attractor in the deep psyche, if it doesn't swell up with too much personal baggage, then it usually stays positive. It functions as the energy-giving cell from which all psychic life flows. But if it is overcharged it can turn negative, in the form of mental diseases like neurosis or psychosis.

Person's ego feels complexes and the ego can take four different attitudes toward the complex: total unconsciousness of its existence, identification, projection or confrontation. These strategies help ego to overcome the generated stresses successfully or to cope with it through defenses or to master it.

Questions

We've tried to understand the psychology of 'conflicts and complexes'. Let us review the topic by self questioning —

Let Us Check Our Progress

1. What is conflict?
2. What is complex?
3. Identify the conflicts and complexes from the following statements, and name them:

(a) Ram's behaviour seems that he is omnipotent_____

(b) In school days Atanu does not want to go to school and does not even like to stay at home. _____

(c) Maya has got two jobs at a time - one is of fat salary but she does not like the nature of that job, and the other of poor salary but she likes its nature. She has to join on the same date.

_____

(d) You like to enjoy a popular movie at home TV at 2 p.m. and another one at multiplex at matinee show._____

(e) Rina feels deprived of marks at mathematics tests in her school and becomes aggressive towards her classmates.

_____

4. Who are the pioneer thinkers in explaining complexes?

3.2.6 : FRUSTRATION AND ANXIETY

3.2.6.1: INTRODUCTION

Human mind has three domains of mental function - cognition, conation and affection. Frustration and anxiety fall under the last one. Affective mental processes deal with feelings and emotions. Other names for feelings are 'affect' and 'mood'. These are the internal or subjective feeling states. Affect is also used to describe the feeling state that can be seen by an observer making an objective assessment. Emotions are feeling states that involve both physiological and psychological changes. If a need is satisfied, the resulting emotion tends to be pleasant, and the person feels satisfied and remains in a contended emotional state. On the contrary, if a need is blocked, or ungratified, the resulting emotion is unpleasant; the person becomes tense and frustrated usually showing the frame of mind by such behaviour that indicates anxiety. Thus, frustration and anxiety are interrelated - just the two sides of a coin.

Abnormal psychology and clinical psychology have made a threadbare discussion on human frustration and anxiety. We shall get some orientations from them in order to understand these two mental functions and to apply this knowledge to overcome stress if such situation arises.

3.2.6.2: PSYCHOLOGY OF FRUSTRATION AND ANXIETY

The term **frustration** has at least two different connotations in everyday speech. In one sense it refers to the blocking of motive satisfaction. When progress toward a desired goal is interfered with or delayed, we say that the person encounters frustration. But frustration is also used to describe the unpleasant emotional state that results from blocked goal-seeking, rather than the event itself. Here frustration is equated with an internal state. Both of these frustrations are concerned much in psychology.

A wide range of obstacles, both environmental and internal, can lead to frustration. Often frustrations arise out of psychological barriers in the form of ethical or moral restraints. The frustrations we face depend heavily on such factors as age and other personal characteristics, our specific life situation, and the society in which we live.

The physical environment presents such obstacles as natural calamities; the social environment presents obstacles through the restrictions imposed by other people and customs of social living.

Sometimes the barriers to goal satisfaction lie within the individual's own deficiencies or limitations. If goal are set beyond one's ability, then frustrations will inevitably result. A major source of frustration is **conflict** which we have discussed earlier.

Frustration - whether it is the result of environmental obstacles, personal limitations, or conflict- has a number of possible consequences. Common immediate reactions are restlessness and tension, aggression, apathy, fantasy, stereotypy (exhibiting repetitive, fixated behaviour), and regression. Among these reactions the most potent one is aggression.

Frustrations create uncomfortable emotional tensions that operate as insistent drives influencing the individual to engage in various tension-reducing activities. The variety of reactions to frustration is practically unlimited. The reactions may range from the constructive direct approaches of normal individuals to the mental symptoms of psychotic patients.

In turn, it is found that the single most potent means of inciting human beings to aggress is frustration. In this sense, frustration always leads to some form of aggression and aggression always stems from frustration.

Frustrated persons, however, do not always respond with aggressive thoughts, words, or deeds. They may actually show a wide variety of reactions, ranging from resignation, depression, and despair to attempts to overcome the source of their frustration. It is also apparent that not all aggression results from frustration. People act aggressively for many reasons and in response to many different stimuli. A careful examination of existing evidence suggests that whether frustration increases or fails to enhance overt aggression depends largely on two factors. First, it appears that frustration increases aggression only when the frustration is quite intense. When it is mild or moderate, aggression may fail to be enhanced. Second, growing evidence suggests that frustration is more likely to facilitate aggression when it is perceived as arbitrary or illegitimate rather than when it is viewed as deserved or legitimate.

We have mentioned a number of observable reactions to frustration, and highlighted the significance of aggression in frustration. In order to explain these reactions and as well as reactions to other forms of stress, psychologists have introduced the concept of **anxiety**. Any situation that threatens the well-being of the organism is assumed to produce a state of anxiety. Thus, threats to one's self-esteem and physical well-being, frustration and pressures to perform beyond one's capabilities all generate anxiety.

Anxiety is a normal reaction to stress. It helps one deal with a tense situation in the office, study harder for an exam, and keep focused on an important speech. In general, it helps one cope. But when anxiety becomes an excessive, irrational dread of everyday situations, it has become a disabling disorder. Prevention of anxiety essentially involves an awareness of life's stresses and your own ability to cope with them.

Following Freudian psychoanalytic model of mind, you can recapitulate that internal conflict usually occurs between the id, which contains the basic drive for survival, pleasure, and aggression, and the ego (the rationality) or superego (the morality). According to this model, anxiety is caused by internal conflict in the psyche. It is experienced in the ego, as are all the emotions.

Anxiety is a diffuse, highly unpleasant, often vague feeling of apprehension that produces many somatic effects or physical sensations in the body: tenseness tremors, cardiovascular excitation, gastrointestinal tightening, and restlessness. It causes feelings of apprehension, helplessness, and general distress.

Anxiety is not fear; it is different from fear in that a specific cause for the feeling cannot be identified for the anxious feelings. This continues to promote feelings of apprehension and helplessness because it is difficult to overcome a cause if it is not identified. Fear is an emotion similar to anxiety, but it has a specific cause that is recognized by the person. Fear occurs in response to a threat that is known, external, definite, or nonconflictual in origin but anxiety occurs in response to a threat that is unknown, internal, vague, or conflictual in origin. The main psychological difference between the two emotional responses is in the acuteness of fear and the chronicity of anxiety.

Freud, who was one of the first to focus on the importance of anxiety, differentiated between 'objective anxiety' and 'neurotic anxiety'. The former is a realistic response to perceived danger in the environment; it is synonymous with fear. Neurotic anxiety stems from an unconscious conflict within the individual, and the person is not aware of the reason of his anxiety.

Because anxiety is a very uncomfortable emotion that threatens our well-being, it cannot be tolerated for long. We are strongly motivated to do something to alleviate the discomfort. Here comes the question of coping with anxiety which is obviously associated with the management of stress. We shall discuss it in the following topic entitled 'Adjustment Mechanisms'.

Questions

We've tried to understand the psychology of 'frustration and anxiety'. Let us review the topic by self questioning —

Let Us Check Our Progress

1. Tick out the correct answer:
   (a) Frustration is associated withcognition / conation / affection
   (b) Anxiety is in the domain ofcognition / conation / affection
   (c) Frustration is caused byanxiety / conflicts / depression
   (d) Anxiety is normalwhen adapted / when excessive / when minimum
2. How do you feel when frustrated?
3. What is neurotic anxiety?
4. Name one / two reactions of frustration.

3.2.7 : ADJUSTMENT MECHANISMS

3.2.7.1 : INTRODUCTION

In order to cope with anxiety which is threatening, sometimes we attempt to deal directly with the anxiety-producing situation by appraising the situation and then doing something to change or avoid it. These methods are called 'direct coping'. Other methods focus on defending us against anxious feelings without trying to deal directly with the anxiety-producing situation. These are called 'defensive coping'. Psychologists believe that whether an event is perceived as stressful or not depends on the nature of the event and on the resources, the defenses, and the coping mechanisms. In psychoanalytic model, anxiety is experienced in the ego. The ego uses many types of defense mechanisms to reduce or to do away with the undesired affects of anxiety. These are called defenses as these unconscious processes defend a person against anxiety, protect against external threats or against internal anxiety-arousing impulses by distorting reality in some way. In popular terms, these are called 'adjustment mechanisms'.

3.2.7.2: DIFFERENT ADJUSTMENT / DEFENSE MECHANISMS

The way in which the ego uses defense mechanisms can be adaptive, that is promoting emotional well-being, or maladaptive, resulting in a decrease in the quality of life of the person or those in his family and close surroundings. Thus, depending on the consequences a defense mechanism can be adaptive or maladaptive. Each person has an adaptive capability that is his normal coping style. This forms the basis for his normal tolerance as far as stress and nervous tension are concerned.

Repression

Repression, a fundamental, usually unconscious function of the ego maintains equilibrium in the individual by repressing inappropriate, unfeasible, or guilt-causing urges, memories and wishes (all usually of the id) to the level of the unconscious, where they will be out of sight, if not out of mind. It is expelling, withholding, excluding anxiety-producing ideas or feelings from consciousness, or curbing ideas or feelings before they reach consciousness. Repression is used many times in the course of a person's life to achieve harmony with environment and self. Ego realizes the forbidden nature of the material represses it through censor. Successful repression causes total forgetting but these repressed materials become the content of dreams.

Denial

It is the refusal to accept reality and to act as if a painful event, thought or feeling did not exist. It is considered one of the most primitive of the defense mechanisms because it is characteristic of very early childhood development.

Reaction Formation

It is concealing the original wish and expressing just the opposite to it. To ward off an anxiety-causing and unacceptable impulse, one may replace it with its over-emphasized diametrical opposite. The best indication that an emotion or act is a formed reaction is any noticeable persistence or excess in the behavior.

Projection

It is attributing one's own unacknowledged feelings to others. In projection, forbidden, unacceptable urges build up and break into consciousness, but are attributed to others. Freud's example: A jealous husband may call his wife unfaithful, while it is he who wants to have an affair but cannot face this.

Rationalization

It is called 'fallacious justification'. If repressed thoughts break through into the conscious mind, they may be reinterpreted and misunderstood as something other than they actually are. This unconscious rationalization rids a person of anxiety or guilt by formulating perfectly reasonable reasons for the unacceptable behavior. Most common example is 'grapes are sour'.

Displacement

When a natural urge is not acceptable, and is then repressed, it is often displaced to another, disguised, outlet. A man's anger at his boss, unacceptable because of his position, may be displaced in a later beating of his child. Here the unacceptable urge is vented in a manner which is acceptable to the ego and superego.

Regression

It is the reversion to an earlier stage of development in the face of unacceptable impulses. For an example an adolescent who is overwhelmed with fear, anger and growing sexual impulses might become clinging and begin thumb sucking or bed wetting.

Sublimation

It is the channeling of unacceptable impulses into more acceptable outlets. It allows us to act out unacceptable impulses by converting these behaviors into a more acceptable form. For example, a person experiencing extreme anger might take up kick boxing as a means of venting frustration. Freud believed that sublimation was a sign of maturity that allows people to function normally in socially acceptable ways. Sublimation is probably the most useful and constructive of the defense mechanisms as it takes the energy of something that is potentially harmful and turns it to doing something good and useful. Freud believed that the greatest achievements in civilization were due to the effective sublimation of our sexual and aggressive urges.

Altruism

It is vicarious but constructive and instinctually gratifying service to others. The individual deals with emotional conflict or internal or external stressors by dedication to meeting the needs of others. The individual receives gratification either vicariously or from the response of others.

All these defenses and others are good to use with respect to protection of self-esteem of the individual. All these adjustment mechanisms help individual to manage stress. Only if symptoms of pathological behaviour result can repression or any other defense mechanism be considered abnormal.

Humour

The individual deals with emotional conflict or external stressors by emphasizing the amusing or ironic aspects of the conflict or stressors.

Suppression

It is usually listed as an ego defense mechanism but actually is the conscious analog of repression; intentional exclusion of material from consciousness. At times, suppression may lead to subsequent repression.

There are so many other defenses, and at the same time there are various classifications of defenses, but these are not discussed here. If you are interested, go through the books in 'Suggested Readings'.

Questions

We've tried to understand the defense mechanisms as 'adjustment mechanisms'. Let us review the topic by self questioning —

Let Us Check Our Progress

1. What are the strategies to cope with anxiety?
2. What is adjustment mechanism?
3. Why do we need 'repression'?
4. Name the correct 'defenses' in the following situations:
   (a) A boy is angry to his teacher and kicks his dog at home.

   _____

   (b) Swati fails in the exam and makes excuses for illness.

   _____

   (c) Somebody doesn't like you but says "you are so good" every time he meets you.

   _____

   (d) Sania is an excellent tennis player. _____

3.2.8 : LET US SUM UP

No matter how resourceful we may be in coping with problems, the circumstances of life inevitably involves stress. Our motives are not always easily satisfied; obstacles must be overcome, choices made, and delays tolerated. Each of us develops characteristic ways of responding when our attempts to reach a desired goal are blocked. These responses to frustrating situations determine, to a large extent, the adequacy of our adjustment to life.

Under the above backdrop we have discussed here the nature of psychosocial stress and its management. In the course of discussion, it was obvious to scan the psychological nature of different components as well as sources of such stress. Consequently, we have concentrated upon intrapersonal and intrapsychic conflicts, and more complicated conflict-ridden structure like complexes which have some positive contribution in personality development of the individual (Jungian view) besides their pathological manifestations (Adlerian view). We have also seen that frustration and anxiety are inseparable, and how they significantly contribute to generating stresses.

In order to master our anxiety and its concomitant stresses we usually take shelter under our ego's defensive coping strategies. Among us who are mature enough can take task-oriented strategies, direct problem-solving approaches. In either case, we are confronted with two problems — (a) to meet the requirements of the adjustive demands, and (b) to protect the self from psychological damage and disorganization. For adequate resolutions, we use a variety of defenses in the name of adjustment mechanisms. But mind that the defense mechanisms do not alter the objective conditions of danger; they simply change our ways of thinking about it. Thus, they all involve an element of self-deception. Excessive use of defenses may result in psychopathology.

To make us 'feel good' in stress, psychologists have suggested a number of valuable measures and if we sincerely practice them it can help us maintaining our sense of well-being.

In the midst of discussion we have spend a good many time on 'test-anxiety', and this is only for yours sake. We, the stakeholders of Educational Psychology, think that each and every learner should enjoy and experience academic satisfaction barring all kinds of anxiety concomitant to studying. In this endeavor, as test-anxiety is an expected obstacle, some orientations regarding its nature and some do's and don'ts to be followed may make you emotionally steady and upright in the course of your study and evaluation.

3.2.9 : ASSIGNMENTS

1. Show your acquaintances with the psychosocial stress and their different sources.
2. Suggest some measures for managing such stresses.
3. How do you differentiate management techniques from coping strategies?

4. Explain the nature of test-anxiety.
5. What to do if test-anxiety occurs?
6. Give an account on the psychology of conflict.
7. How do general complexes differ from pathological ones?
8. Explain frustration and anxiety highlighting their interrelations.
9. Why defenses are called adjustment mechanisms?
10. Explain with illustration:

(a) Repression

(b) Sublimation

(c) Altruism

(d) Projection

3.2.10 :SUGGESTED READINGS

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Block – 4

Learning

Unit - 1

Introduction to Learning

CONTENT STRUCTURE:

4.1.1: Introduction

4.1.2: Objectives

4.1.3: Concept & Nature of Learning

4.1.4: Types of Learning

4.1.5: Influencing Factors of Learning

4.1.5.1: Attention

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4.1.1: INTRODUCTION

Learning occupies a very important place in our life. Most of what we do or do not do is influenced by what we learn and how we learn it. Learning, therefore, provides a key to the structure of our personality and behaviour. It is a vital part of education.

In this Unit, we shall discuss the concept, nature and various types of learning. You will learn different influencing factors of learning like attention, interest, maturation, motivation, remembering, forgetting etc. and their characteristics. You will also understand the types of memory and informationprocessing model.

4.1.2: OBJECTIVES

After going through this unit you will be able to:

1. estimate the concept of learning.
2. write in own words the nature and types of learning.
3. illustrate the conditions influencing learning.
4. analyse the information-processing model.

4.1.3: CONCEPT AND NATURE OF LEARNING

What is learning? How do we learn? These are some of the questions, which should be answered by each one of us. The answers to the questions provide us a sound basis for understanding the concept and nature of learning.

Now let us try to understand the concept of learning. Learning is a life-long process and universal in nature. It is not confined to human being only. In fact, all living creatures learn. Animals can learn simple acts whereas man is capable of learning very complex acts. Man is endowed with intelligence, reason and other higher mental processes and so learns the most. All living beings learn in their own ways. They learn by interaction with environment. As the human child comes in contact with the environment he starts reacting and in this process of interaction of the individual with the environment he starts reacting and in this process of interaction of the individual with the environment the foundations of learning are laid down. Throughout the life one learns something either formally or informally.

According to the psychologists' point of view it is a form of growth or change in an organism (human or nonhuman), which is manifested as new modes or patterns of behaviour. This change or modification especially in human being, shows itself as a skill, a habit, an attitude, an understanding, or as knowledge or an appreciation. Experience, direct or indirect as found to play a dominant role in moulding and shaping the behaviour of the organism from the very beginning. At any rate, an organism is not the same as it was before the learning. This kind of change or modification is termed as 'learning'. This change can be intentional, deliberate and controlled, or may take place without intention, in an uncontrolled haphazard manner. Thus, the psychologists look for evidence of learning in the changes that occur in organism's behaviours as a result of experience. But not all changes in behaviour are examples of learning. Behavioural changes that are the temporary results of things like fatigue or drugs don't illustrate learning. Similarly, changes that are mainly biologically determined, like physical growth or sexual maturation, or that result from injury or disease (especially of the brain and other parts of the nervous system), are not examples of learning.

Psychologists' Views on Learning

Many attempts have been made to define learning, yet a definition acceptable to all has not been evolved. The ***behaviouristic psychologists*** defined learning as a relatively permanent change in potential for behaviour of an organism (human or nonhuman) that results from experience but is not due to fatigue, maturation, drugs, injury or disease. On the other hand, the ***cognitive psychologists*** explained learning as a process of change in the cognitive structure of the learner. Again the ***constructivistic psychologists*** declared that people learn best when they actively construct their ownunderstanding.

Learning

According to behaviouristic psychologists, learning is the relatively permanent change in potential for behaviour of an organism (human or nonhuman) that results from experience and training but is not due to fatigue, maturation, drugs, injury or disease. For cognitive psychologists. It is the process of change in the cognitive structure of the learner.

However, various definitions given by different thinkers and psychologists help us in visualizing from different angles what takes place during learning. According to *Hilgard*, "Learning is the process by which behaviour is originated or changed through practice and training."

For *Brook*, "Learning is a process of acquiring the ability to do something which the learner never did before." *Munn* has also given a flexible definition that "Learning is more or less permanent incremental modification of behaviour which results from activity, special training or observation." According to *Boaz*, "Learning is a process by which the individual acquires various habits, knowledge and attitudes that are necessary to meet the demand of life in general." Again *Kimble* defined, "Learning is a relatively permanent change in behavioural potentiality that occurs as a result of reinforced practice." *Commins*and *Fagin* have described learning as a sequence of mental events or conditions leading tochanges in the learner.

On analyzing the above similar other explanations and definitions of learning, we can easily inferthat:

a. there are some general characteristics of learning; and

b. there are various effective factors that influence learning.

Nature

If we analyse the definitions and interpretations of learning we can form some idea about the nature of learning. Thus, learning has the following nature and characteristics :

Nature of Learning

Learning involves new ways of doing things, and it operates in an organism's attempts to overcome obstacles or to adjust to new situations. It represents progressive changes in behaviour to meet environmental requirements and enables the learner to satisfy interests to attain goals.

1. Learning is a life-long process.
2. Learning is growth through experience.
3. Learning is an relatively enduring change of behaviour, cognitive structure or knowledge.

4. Learning is new/novel.

5. Learning is rather a process than a product.

6. Learning is based on readiness, interest, incentives, motivation etc.

7. Learning is not the changes as results of maturation, though learning cannot take place until maturation reaches respective stages.

8. Learning is both individual and social as well as formal and informal. It is the product of the environment.

9. It is organization of experience.

10. Learning in academic parlance is generally verbal in nature.

11. Learning is always goal-directed and purposive. Hence it is a planned and systematic process.

12. Learning affects the conduct of the learner. There is a change in the mental structure of the learner after every experience.

13. Learning is active & creative.

14. Learning is the outcome of the interaction of the individual with the total situation.

15. Learning is transferable.

From the overall point of view, we can say that learning is a process of self-activity, self-direction and self-realisation of man's highest potentialities. However, the nature of 'learning' as a construct seems complicated. Hence it is explained differently by different theories of learning.

Question :

Let Us Check Our Progress

Note: Verify your answer with those materials stated earlier of this Unit.

1. Define the term 'learning' with the help of definitions given by renowned psychologists.
2. Mention at least five chief characteristics of learning.

4.1.4: TYPES OF LEARNING

We have discussed the nature of learning and defined learning as a process of bringing about the relatively permanent changes in the behaviour of an organism, which may be classified into a number of categories depending upon:

(a) the domain or specific area of behaviour in which changes are introduced, or

(b) in terms of the methods that are employed for the introduction of the behavioural changes. If we follow *the former criterion*, learning can be classified as:

Right from birth through out our life-time, we learn many skills and with the passing away of time gradually we learn more complex skills to acquire the ability of various types of problems. Thus there is a gradual change from the simpler form of learning to the complex ones, like problem solving. There is no single way of acquiring all types of learning. If we understand how much each mode operates, we should be able to design our classroom teaching more effectively.

1. Cognitive learning (learning of concepts, principles, problem solving etc.)

2. Affective learning (learning of habits, interest, attitudes, appreciation etc.)

3. Learning of motor skills (eg. walking, dancing, swimming,typingetc.)

According to the *latter criterion*, we may categorize learning as:

(a) Trial & error learning

(b) Learning through classical conditioning

(c) Learning through operant conditioning

(d) Chain learning

(e) Shaping

(f) Learning through generalization

(g) Learning through discrimination

(h) Serial learning

(i) Associate learning

(j) Learning by imitation

(k) Insightful learning and so on.

By taking into consideration a specific hierarchical order, Gagne (1970) has classified learning into the following types:

(i) Signal learning

(ii) Stimulus-Response learning

(iii) Chain learning

(iv) Verbal association learning

(v) Multiple discrimination

(vi) Learning of concepts

(vii) Learning of rules/principles learning and

(viii) Problem solving learning

Various types of such learning will be discussed in Unit-2 of this Module in proper context.

However, we are discussing here a few types of learning.

1. *Verbal learning*

Learning of this type helps in the acquisition of verbal behaviour. The languages we speak, the communication devices we use, are the result of such learning. Signs, pictures, symbols, words, figures, sounds and voices are employed by the individual as essential instruments for engaging in the process of verbal learning.

2. *Motor learning*

The learning of all types of motor skills may be included in this type of learning. Learning of swimming, riding a horse, driving a car, playing the piano, hitting a moving target, handling various instruments, drawing a geometrical design etc. are examples of such learning.

3. *Trial & error learning*

In many situations we learn by random trial and error. Here we make a number of attempts for a particular task or problem and find some attempts rewarding. The satisfying feeling of rewards strengthens particular stimulus-response connections while the unsuccessful attempts are stamped out through practice. This type of learning is based on Thorndike's theory of connectionism. In such a learning, the learner has to give a precise response to a discriminated stimulus. Eg. a dog leans to shake hands in response to a vocal stimulus provided by its master or by another friendly person.

4. *Learning through classical conditioning*

The basic phenomenon of this type of learning is simple one. A great variety of responses are classically conditionable in our daily life situations. Learning through classical conditioning may be defined as a process in which a neutral stimulus, by pairing with a natural stimulus acquires all the characteristics of natural stimulus. Eg. A car horn blasts. A man jumps widely. The same man sees another car - a quiet one. He jumps widely again.

5. *Concept learning*

A concept in the form of a mental image denotes a generalized idea about things, persons or events. For example: our concept of 'tree' is a mental image that throws up the similarities or common properties of all the different trees we know. We will call a thing 'tree' when it has some specific characteristics, the image of which we have already acquired in our mind on account of our previous experience, perception or exercise of imagination. The formation of such concepts on account of our previous experience, training or cognitive processes is called concept learning. Concept learning proves very useful in recognizing, naming and identifying things.

6. *Problem solving learning*

Problem solving learning denotes a higher type of learning. This learning requires the use of the cognitive abilities like reasoning, thinking, power of observation, discrimination, generalization, imagination, the ability to infer, draw conclusions, experimenting, try out novel ways etc. Based on

earlier experiences, coaching, training, formal or informal learning, acquisition of knowledge, habits, attitudes, interests etc., an individual may be motivated to reach an unknown target or to unfold the mystery of an unresolved problem.

7. Serial learning

Serial learning is a learning situation in which the learner is presented with learning material, which exhibits some sequential or serial order. Children encounter it often in school where they are expected to master lists of material such as the alphabet, multiplication tables, the names of all the states in their country or the names of the presidents in order etc.

8. Paired-associate learning

In this type of learning, learning tasks are presented in such a way that they may be learned by reason of their associations. The name of a place like *Krishnanagar* is remembered on account of its association with the name of Lord Krishna, Tista, a girl's name may become easy to remember in a paired association with the river Tista.

9. Learning by imitation

Living beings can learn a great deal by observing but they should also try to copy others for perfecting their performances and learning. Like observation, imitation is also an innate tendency of the individual to repeat the observed actions of others. In the beginning the child learns his movements, actions and gestures by imitation. Modeling includes imitation of special personalities such as a student imitates the activities immediately of the well-known cricketer Sachin Tendulkar.

10. Learning by Observation

Observation is a basic requisite for all kinds of learning. In the process of observation we not only take the help of our eyes alone (as for 'seeing') but we also use all our sense organs. We often use 'observation' in order to foster learning in our students. We may evoke interest in children by presenting concrete objects, illustrations, pictures, models etc., in class and may relate the topic to them.

11. Insightful learning

Most of the learning in human beings takes place not only through observation or imitation, but also by solving problems, which they come across in their day to day life. While solving a problem if an individual reaches the solution all of a sudden, we say that he has learned by insight. In fact, the person reaches the solution by understanding the relation between different elements of the problem situation. Insightful learning emphasized that human learning is always purposeful and goal-directed and is essentially based on one's cognitive powers. On the basis of different learning experiments, the cognitive psychologists concluded that

(i) a learner always perceives the situation in its totality or as a whole, (ii) analyses & evaluates all the relationships among various factors involved in the situation, and (iii) then, arrives at an insightful solution.

From the above discussion, we understand that learning can be classified into various categories. Psychologists differ in opinion regarding the types of learning process. To understand as to how human beings learn in different situations is, therefore, important for attaining competence in teaching.

Question :

Let Us Check Our Progress

Note: Verify your answer with those materials stated earlier of this Unit.

1. Name the different types of learning?
2. Give examples of the various modes of learning from classroom situations.
3. Define the term 'concept learning'.
4. Give an example of Trial & error learning.

4.1.5 : INFLUENCING FACTORS OF LEARNING

Learning, as you have studied, can be defined as a process of bringing relatively permanent changes in the behaviour of the learner through experience, activity or practice. An assessment of this definition may reveal that learning process is centered mainly on three elements :

(a) The learner whose behaviour is to be changed or modified.

(b) The type of experience or training required for modification in the learner's behaviour.

(c) The men and material resources needed for providing desired experiences and training.

Therefore, the success or failure in the task of learning in terms of introducing desired modification in the behaviour of a learner would automatically depend upon the quality as well as control and management of the factors associated with the above- cited main elements. Learner is the key figure in any learning task. He has to learn or bring desired modification in his behaviour. How he will learn or what he will achieve, through a particular learning act depends heavily upon his own characteristics and ways of learning. Such factors associated with this can be described as follows:

A Physiological Factors **—**Physical health, Nutrition, Age, Gender-difference, Defects in senseorgans, Handicappedness, Fatigue, Disease, Excited Physical condition etc.

B Psychological Factors **—**Motivation, Maturation, Intelligence, Attention, Interest, Aptitude,Attitude, Readiness, Tension or Anxiety, Memorization, Imagination, Emotion, Mental Health, Conflict, Sentiment etc.

C Methodology of Instruction **—**Use of Activity-centric or dynamic methods, Revision &Practice, Supply of properly planned sufficient learning materials, Feedback & Reinforcement, Utilization of maximum senses (sight, hearing, taste, smell, touch) etc.

The process of learning is influenced by a variety of personal factors, a thorough knowledge of which will prove very helpful for teachers and parents in understanding and guiding their children's learning. Some of the personal factors that influence learning may be classified as internal (learner's physiological, psychological and genetic factors) and external (environmental factors & methodology of instruction).

D Environmental Factors **—**Atmospheric Environmental Conditions like high or lowtemperature, nature of sunlight, noise etc., Social Environmental factors like competition, cooperation, imitation, praise & blame etc., and Educational &Economic status of the Family or Home.

E Genetic or Hereditary Factors **—**Every child is born with certain potentialities orcharacteristics which are inherited from his parents at the moment of conception. Some children are very rich in hereditary endowment while others are very poor. Genetic or hereditary factors play an effective role in influencing the learning of an individual.

From the above discussion, we may conclude that learning is affected by the total situation, which depends upon a number of factors. Some are external while some are internal. Among these factors to the classroom situation, we may mention two important factors of *heredity* and *environment* (particularly home environment) of the learner. A classroom teacher can never change these factors. Our ability to learn and the rate of learning are conditioned by our *heredity*. *Home conditions* like bad ventilation, unhygienic living, overcrowding etc. affect the rate of learning and the general response of the learner. Physiological conditions also matter. *Physical conditions* like bodily weakness, chronic illness, malnutrition, fatigue, bad health etc. are a great hindrance in learning.

We are now discussing some of the important internal factors of the learner which influence learning effectively.

4.1.5.1 : ATTENTION

We use the word 'attention' frequently in our day-to-day conversation. At a railway station or the other public places, announcements start with 'your attention please' before informing the passengers or other people about the schedules of the trains or some other matter of public interest. Thus attention is taken as a power, capacity or faculty of our mind, which can be turned on or off at will or something in kind or form that can be lent or given to this or that situation. Attention is closely related to the processes and products of learning. It refers to a deliberate and conscious effort on the part of an individual to select one out of the various stimuli present in his environment and bring it to the center of his consciousness in order to perceive it clearly to achieve a desired result. It is concerned with thought, feeling and action alike. When the mental energy is focussed on a particular object, one becomes vividly aware of it, which is called attention.

Some definitions provided by eminent authorities :

Valentine: "Attention is not a faculty of mind. It rather describes an attitude or activity of the mind."

Ross: "Attention is the process of getting an object of thought clearly before the mind."

Dumville: "Attention is the concentration of consciousness upon one subject rather than upon another."

McDougall: "Attention is merely conation or striving, considered from the point of view of its effect on cognitive process."

According to Ross (1951), attention may be classified in two categories:

(i) Involuntary attention — This type of attention is aroused without the will coming into playand we attend to an object or an idea without any conscious effort on our part. Example: a mother's attention to her crying child.

(ii) Voluntary attention — Attention is voluntary when it calls forth the exercise of the will.Example: attention paid at the time of solving an assigned problem of mathematics.

Factors or Determinants of Attention

A. External Factors:

(i) Nature of Stimulus — The most effective stimulus always capture our attention. Acoloured picture attracts more attention than black & white ones. Among pictures of human beings, those of great personalities as also of beautiful women or handsome men attract more attention. Thus, the most effective stimulus should always be chosen by the teacher for capturing attention of his students.

(ii) Intensity & Size of Stimulus — The stronger stimulus, in comparison to the weakerones always attracts more attention. Our attention becomes more easily directed to a loud sound, a bright light, a strong smell or a large object.

(iii) Contrast, Change & Variety — Change, variety and contrast attract attention more easily than sameness or regular routine. During teaching, the use of maps, charts or models by the teacher suddenly attracts the attention of the students. Again, for example, if all the LETTERS on this page were printed in capitals, the capitalized word in this sentence would have no greater attention-getting value than any other word. Contrast or change makes it more forceful. Novelty also attracts more attention.

(iv) Repetition of Stimulus — We may ignore a stimulus the first time, but when it isrepeated several times, it captures our attention. In a classroom, the particular point on which the teacher tries to draw the attention of the students is raised again and again. But too much repetition of a stimulus may bring diminishing returns.

(v) Movement of Stimulus — A moving stimulus catches our attention more quickly thanone, which is still.

B. Internal Factors:

(i) Interest — Interest is very helpful factor in securing attention. A boy interested incricket, will be more interested in watching a cricket match than football match being played at the same time. A wise teacher is able to draw the attention of his students by making his lesson interesting.

(ii) Motives — Thirst, hunger, curiosity, sex, fear etc. are some of the important motivesof an individual that exercise a definite influence upon attention. So motives or basic drives of an individual are very important in securing his attention.

(iii) Mind set — Mind set means the tendency or bent of the whole mind. A person alwaysattends to those objects towards his mind has set. On the day of an examination the slightest thing concerning the examination easily attracts the attention of the students.

Attention is a necessary condition for any mental task in the classroom and outside. In fact, it is the 'hub' of the entire teaching-learning process. Teacher has to do his best to make the students learn as to how attention could be secured. At the same time he has to create such conditions in the classroom, which enable him to make students attentive to learning.

2.1.5.2 : INTEREST

Let us consider an example: a farmer, an artist, and a botanist standing on a hill together and looking down over the landscape, they perceive different things differently. The farmer primarily perceives the crop and fertility of the land; the artist perceives the aesthetic aspect of the landscape' and the botanist sees the vegetation, relationship among living organisms etc. They attend to different aspects of the situation depending on their interests. Thus, interest is something that concerns us, and can be an activity in which we may like to participate. Interest is the feeling that prompts us to spontaneous activity.

One of the greatest problems in education is how to arouse the interest of the students. When students take interest in the activity or experience of the lesson, the problem of inattentiveness will be solved by itself. So, 'Interest' is considered a powerful 'dictator', 'inspirer' and 'motivator' in the learning process.

Let us see how the eminent authorities scientifically define 'interest'.

Some definitions provided by eminent authorities:

Bingham: "An interest is tendency to become absorbed in an experience and to continue it."

Crow & Crow: "Interest may refer to the motivating force that impels us to attend to a person, a thing, or an activity or it may be the effective experience that has been stimulated by the activity itself."

James Drever: "Interest is latent attention."

Ross: "A thing that interests us is just something that concerns us or matters to us."

Factors or Determinants of Interest

Interest is innate as well as acquired. It is influenced by a number of factors, as a result of which, we take interest in some things and not in others.

A. Personal Factors of the Child: These include - (a) Physical health, (b) Mental health, (c) Age, (d) Sex, (e) Pattern of instinctive behaviour, (f) Ideals, motives & wishes, (g) Emotion, sentiments, conflicts, complexes etc.

B. Socio-economic or Environmental Factors of the Child: These are — (a) Socio-economicstatus of the family, (b) Cultural status (c) Educational background of the family, (d) Opportunities to the child for exploring interests etc.

Various types of interests of the students can be exploited to facilitate their learning. Life is so exiting that many interesting things and activities often clamor to attract our attention. Children frequently face the dilemma of mutually conflicting interests. Immediate interests often seem to be clashing with the remoter ones. A student might be in a quandary at least for the time being when his interest in sports impels him towards the play-field and his interest in studies force him to concentrate on books. Once the student's interest is aroused in an activity, the teacher should expend more effort on it.

4.1.5.3 : MATURATION

Learning and maturation are closely interrelated and interdependent. Some psychologists defined the term 'maturation' in terms of behaviour change. Learning is directly dependent upon age and maturation. Mental age increases with the chronological age and ceases at about the age of sixteen years. Increase in age means intellectual maturation which helps in solving difficult problems. No learning can take place unless the individual is matured enough to learn. Some children can learn better at earlier age while others take more time to learn the same content.

Some eminent psychologists endorse the meaning of 'maturation' in following words :

McGoeth: "Maturation includes any change with age in the conditions of learning, which depends primarily upon organic growth factors rather than upon prior practice or experience."

Biggie & Hunt: "Maturation is a development process within which a person from time-to-timemanifests different traits, the blueprints, which have been carried in his cellsfrom the time of conception."

Thompson: **"**Maturation is a name for the growth process during which a structure or a function ismore and more becoming adult that is, mature."

Critical Discussion:

From the above noted definitions, given by various psychologists, we may say that maturation involves changes that are associated with normal growth. It is relatively independent of activity, experience and practice. Learning, on the other hand, is a change in the individual that is not on account of genetic inheritance. It is a process, which takes place as a result of 'stimuli' from 'without'. Activity, experience and training lead to changes in behaviour in the process of learning. But sometimes it becomes difficult to determine definitely as to which of the behavioural change is the result of learning and which of the consequence of maturation. The most simple example is that of a child. The child learns to talk only when he reaches a certain stage or age in maturation. It is also equally true that he does not learn the language just because he attains the age. The language is taught to him. The language, which he learns is that which he hears. It is very clear that two processes - maturation and learning are closely related to each other. Maturation assists in the process of learning. Learning takes place only if the stage for that type of learning has been achieved through a process of maturation.

Children learn best when they are mature enough and ready to learn; when they are motivated, attentive and interested in learning. Apart from these the learning of the children is also influenced by their memory system, which helps in acquiring, storing and reproducing information.

A teacher would be effective if he understands the complexity of the changes that take place as a result of both processes and the interaction between the two. The reverse would be harmful. For instance: the normal development of speech in the child would be disrupted if a child is forced to learn certain speech pattern before a certain maturation has occurred. On the other hand, failure to provide specific training in speech at the appropriate time may be a great educational error. Thus the principle of maturation warns us about the learning of specific contents or subjects on a child in his appropriate maturation stage.

4.1.5.4: MOTIVATION

We see an athlete to rise quite early in the morning and regularly visit the track or field for continued practice irrespective of the odds of the seasons. Similarly a student may be seen to burn the midnight oil as the examination approaches. Now question arises what makes the athlete or the student behave in a particular manner? The answer to such questions on the why and how of behaviour lies in the key word 'motivation'. They behave as they do because they are motivated to do so.

Motivation, thus may be regarded as something, which prompts, compels and energizes an individual to act or behave in a particular manner at a particular time for attaining some specific goal or purpose. Motivation is the heart of learning process. Adequate motivation not only engages the studentin an activity, which results in learning but also sustains and directs it. *G. M. Blair* stated that: "motivation is a process in which the learner's internal energies or needs are directed towards various goal objects in his environment" and *T. W. Atkinson* said that: "the term 'motivation' refers to the arousal of tendency to act to produce one or more effects." But questions arise: what exactly is responsible for the motivation of an individual? What are the real activating forces that pull and push an individual to move or act for achieving a specific goal?

Tremendous research has been conducted on motivation in the last six decades and a number of definitions and theories have been given to explain motivation. Some important theories of motivation and their educational implications will be discussed.

4.1.5.5 : REMEMBERING OR MEMORIZATION

Let us consider the case of Prof. Bhatia, a renowned mathematician who has the capacity to tell correctly, within seconds, the date & day of any year and any month, without any device or even the paper and pencil. Though it is a rare capacity, still we are curious about what it is that helps him respond so promptly. The only answer scientists can attribute to this is his excellent mental imagery with a well-designed retrieval plan. All of us have the capacity to recall our past, remember a person, situation or place, act the way we have learned, and guide our future behaviour on the basis of what has been useful and purposeful to us in the past. It is possible only because we have *memory*. In psychological terms, the faculty of mind to store the past experiences or learning and to reproduce them for use when required at a later time is known as 'memory'. Memorization or remembering is the function of the mind by virtue of which it records, retains and produces ideas gained by its own activity. However the term 'memory' or 'memorization', cannot be viewed merely in terms of reproduction or retrieval of past experiences or learning. It is quite a complex process, which involves factors like learning, retention, recognition and recall. The process of memorization (or remembering), thus, begins with learning or experiencing something and ends with its revival and reproduction. Therefore, memorization is said to involve four major stages like: learning (acquisition), retention, recognition and recall.

Ryburn:

"The power that we have to 'store' our experiences, and to bring them into the field of our consciousness some time after the experiences have occurred, is termed as memory."

Drever: "Memory is that characteristic which underlines all learning, theessential feature of which is reflection. In a narrow sense, it covers recall and recognition."

Woodworth & Marquis: "Memory is a mental power which consists of learning, retaininingand remembering what has previously been learnt."

Kinds of Memory

Psychologists have tried to classify memory into certain types according to its nature and the purpose it serves, which are as follows :

Sensory or immediate memory is the memory that helps an individual to recall somethingimmediately after it is perceived. In this type of memory, the retention time is extremely brief -generally from a fraction of a second to several seconds.

Short-term memory is also temporary, though not nearly as short-lived as immediate memory.This type of memory is the phase of information processing during which information from the sensory register is stored, and held for as long as 30 seconds (Shiffrin & Atkinson, 1969).

Long-term memory is the relatively permanent memory store in which we hold information evenwhen we are no longer attending to it. It has a seemingly limitless capacity to store information, undergoes little or no decay, and requires little or no rehearsal.

Episodic memory is connected with the specific episodes and events. Events that are personallyexperienced, e.g., our first day of flying or seeing a battle are stored in the episodic memory. The meaning of words, rules for using them in thinking and communication (language), etc., are stored in the Semantic memory.

Photographic memory stands for a kind of memory possessed by an individual who can remembera scene in photographic detail.

When we prepare to write something, we retrieve a programme for writing from the **Motoricmemory** (Singer, 1978) that guides our writing movements. As we see someone we know, we retrievesome kind of feeling towards the person from the **Affective memory** (Zajone, 1980).

4.1.5.6 : FORGETTING

We frequently hear the expression: "I'm sorry, I have forgotten". The power of long retention and rapid reproduction (recall & recognition) makes for a good memory. It counts towards the success of an individual in the task of learning or remembering. Forgetting on the other hand, contributes towards failure. "I have forgotten" implies that I have failed to retain or have been unable to recall what was learned or experienced by me earlier. In this way, forgetting is just the opposite of remembering and is essentially a failure in the ability to reproduce experienced or studied material.

Let us see how the eminent writers scientifically define 'forgetting'.

Some definitions provided by eminent authorities:

Drever: "Forgetting means failure at any time to recall an experience, when attempting todo so, or to perform an action previously learned."

Munn, et al: Forgetting is "failing to retain or able to recall what has been acquired."

Morgan, et al: "Forgetting from long-term memory refers to the apparent loss of information that hasalready been stored."

Types of Forgetting

Forgetting may be broadly classified as *natural&morbid forgetting*. In *natural forgetting*, forgetting occurs with the lapse of time in a quite normal way without any intention of forgetting on the part of the individual, while in *morbid* or *abnormal forgetting*, one deliberately tries to forget something.

According to another view, forgetting may be categorized as *general&specific*. In *generalforgetting*, one suffers a total loss in one's recall of some previous learning, while in *specific forgetting*,the individual forgets only one or other specific parts of his earlier learning.

According to other view related to the cause of its occurrence, forgetting may be classified as *physical* or *psychological*. When a person losses his memory on account of his physical factors likeage, disease, biological malfunctioning of brain or nervous system etc. it is termed as *physical forgetting*; while loss of memory occurs on account of psychological factors like anxiety, stresses, conflicts etc. the resulting forgetfulness is termed as *psychological*.

Munn and his associates advance five different views of forgetting, such as : the absence of adequate stimulation, the mere passage of time, interference, obliteration of the memory trace and repressive forgetting.

Causes of Forgetting

Natural forgetting can be properly explained through the theory of *trace decay*, which holds that we forget on account of decay of the memory traces with the lapse of time. The *repression theory* is held to be more applicable to explaining morbid forgetting. According to this theory, we forget the things we do not want to remember by burying them in our unconscious. According to the *theory ofinterference*, we forget things because of the interference of other things. *Proactive* inhibition occurswhen earlier learning interferes with the later learning. *Retroactive* inhibition is the result of later learning coming in the way of earlier learning.

Question :

Let Us Check Our Progress

Note: Verify your answer with those materials stated earlier of this Unit.

1. Mention any four factors, which influence learning.
2. Give an example of interrelation between learning and maturation.
3. What are the internal factors of attention?
4. Mention the various types of forgetting and name at least three causes of forgetfulness.

4.1.6 : INFORMATION PROCESSING MODEL

Several theories and models have been devised by psychologists to explain how we remember or how our memory works. Traditionally, learning was defined solely as a change in observable behaviour resulting from practice. At present, though cognitive psychologists agree that learning results in a change in observable behaviour, they also regard learning as a change in the learner's knowledge - both the amount of knowledge and the way it is organized. Cognitive psychology is particularly interested in mental processes that students or any person employ in learning mathematics, science and in other fields of knowledge. When learning is related to information processing there is a better understanding of these mental processes. The interpretation of information processes described here focuses on the internal cognitive operations and includes the control of the operations by the individual. The term 'information' as used in this discussion, simply refers to sensory input from the environment that informs us about something that is happening there. Secondly, cognitive processes refer to the mental processes involved in knowing about the world as such they are important in perception, attention, thinking, problem solving and memory.

Computer and Human Information Processing

Cognitive psychology and computer information processing are integrated to stimulate human learning processes in information processing model. Considerable success has been achieved in stimulating less complex thinking processes and in formulating models of human information processing (Bower & Hilgard, 1981).

Computers input, process and output information rapidly without making errors. The following Figure shows the main features of computer information processing.

		Information is inputted by a card reader,		Information is coded, stored and processed		Information is outputted by printer, tele-	
Environment	→	tape drive etc.	→	electronically	→	type etc.	→ Environment

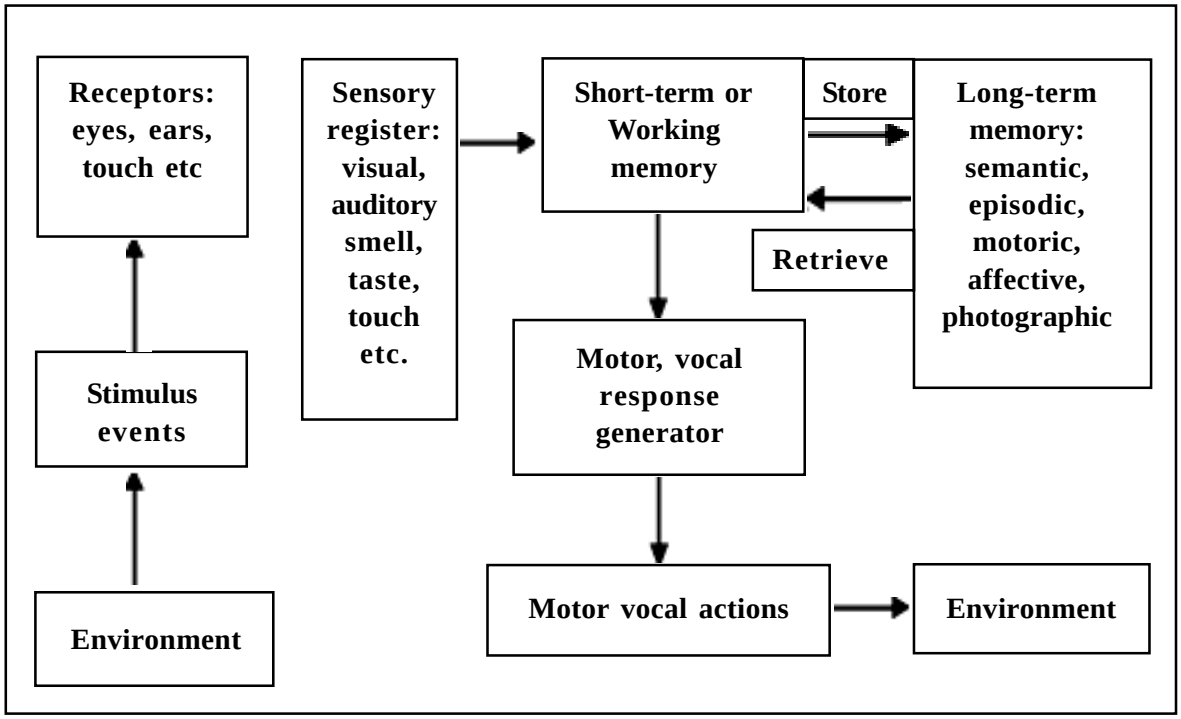
(Major Phases of Computer Information Processing)

How computer operation and human learning processes are analogous may be explained thus: the computer takes in information from the environment from a card reader or other device. Human beings take in information through their sense organs (hearing or reading or observing). The information is coded, stored, retrieved from storage, and processed electronically by the computer. Human beings also encode, store and process information; however, this sequence is controlled and monitored by programmes that they learn. Finally, after the information is processed by the computer, it is outputted to the environment through a device such as a line printer in the form of a computer print out. Human beings after they process information may generate and make vocal responses, such as speaking, or muscular movements like typing. In some cases, human beings may not respond overtly and may instead store the processed information in their long-term memory.

Thus, the programmes for controlling and monitoring information processing are fed as input to the computer, but are learned by the human being. The cognitive psychologists are more interested in the nature of these human programmes - how they are learned and how they function in the processing, storage, and retrieval of information. They make detailed analyses about the phases of human information processing of what occurs internally as a person learns.

Phases of Human Information Processing

The phases of human information processing are described below. The model shown in the following Figure summarizes the idea drawn from the models of *Shiffrin*&*Atkinson* (1968), *Atkinson*&*Shiffrin* (1971), *Bower* &*Hilgard*(1981) and*Wickelgren*(1981).



(Model of Major Phases of Human Information Processing)

In connection with the working of the memory, *Atkinson and Shiffrin* (1968, 1971) have suggested three different memory storage systems: *sensory stores* or sensory registers, a *short-term store* or short-term memory and a *long-term store* or long-term memory which were discussed earlier in short in the previous pages of this Unit during discussing the various kinds of memory.

How we remember can be explained through the information- processing model. The human memory storage and transfer model, suggested by Atkinson & Shiffrin (1968,71), put forward three distinct memory stores: sensory memory, short-term memory, and long-term memory. Human information processing is analogous to that of computer information processing system.

Sensory Storage

The process of memorization starts with the interaction of one's sense organs with one's environment. Information enters the human information processing system via a variety of channels associated with the different senses and then it travels through the nervous system and reaches the brain, which interprets it. The sensory information or message must stay in the nervous system briefly, to give the brain time to interpret it. This momentary pause of less than a second, or lingering of the sensory information, is referred to as sensory storage. Sensory store is really many sensory memory systems, one associated with each sense like visual, auditory, smell, taste etc. (Atkinson & Shiffrin, 1971). Sensory information passing through the sensory stores (or registers) either disappears within a second or is transferred to the short-term store. Old sensory impressions disappear as they are 'erased' by new information.

Short-term Memory (STM) or Working Memory

According to Atkinson and Shiffrin, the information transferred from the sensory store to the short-term store may automatically stay for up to 20 seconds. It can be retained for as long as an individual wants it in the short-term store through rehearsal, or repetition. Another way to think of the duration of short-term memory is in terms of the amount of information that is stored. On the average, one can receive and retain only seven items (picture, word, meaning) of information, plus or minus two (Miller, 1956). Some people are able to retain much more information in their short-term memories by a process called chunking, which groups information by coding it, e.g. the number 25828348 can be remembered by listing under 4 heads: 25 82 83 48 and the number 2582837885612456 can be arranged as: 258 283 788 561 24 56 for better remembering. In case the short-term store is able to hold the information up to 20 seconds, it may move into the long-term store. The short-term memory is thus responsible for the transformation of sensory information to the long-term store as well as its retrieval and also decides which responses should be made. For this reason, the short-term memory is sometimes called the working memory. For transferring information from the short-term memory to the long-term store, one can make use of many control processes. Rehearsal is one such process while coding and other mental activities may aid long-term memory much more than simple repetition. In the retrieval (recalling what has been stored in the long-term memory) also, various control processes and retrieval strategies like decoding of stored information are put into use in the short-term storage.

Long-term Memory (LTM)

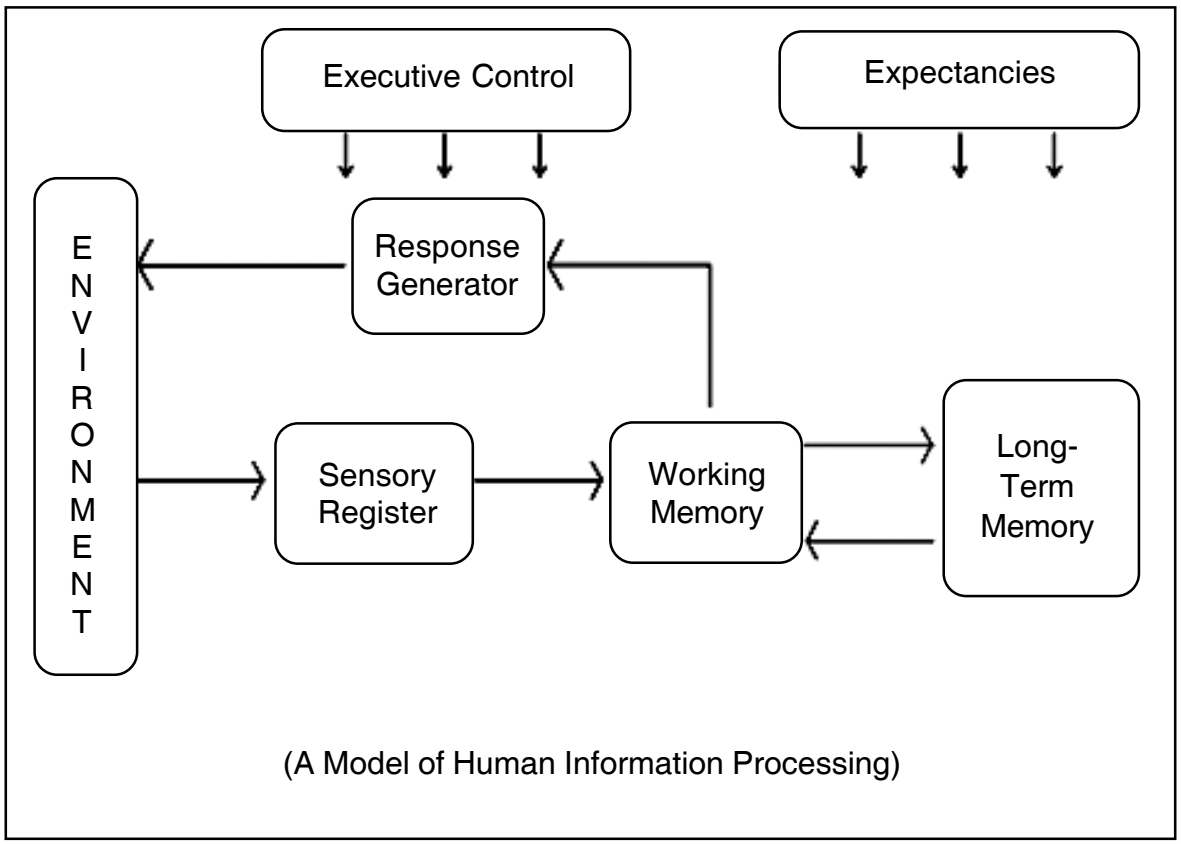
The long-term store is used for storing the sensory information on a permanent basis and is assumed to have almost unlimited capacity for the storage of the encoded currently inactive material. The sensory information is stored (or transformed from STM) in the coded form. At the time of reproduction or retrieval, this is again decoded. The different forms of such coding are linguistic (verbal), imaginal and motor. In linguistic coding, the coding of the sensory information is done in the form of language or words. Imaginal coding makes use of images, mental picturization for the storage of information and the motor code is employed for remembering physical skills like swimming, cycling etc. the stored and organized information in the long-term memory, in the coded form is transferred back to the short-term memory where it is decoded and employed for response as desired and ordered by the brain.

Capacity of LTM is unlimited in the sense that nobody seems to run out of the capacity to store new information, even if they live beyond 100 years. If they did, then either they would stop learning entirely or new learning could only take place by first erasing something already stored in LTM. This does not appear to happen - when storage or retrieval capability is lost it is due to deterioration of

brain systems rather than to systems exceeding their holding capacity. It is difficult to determine how long memories can exist in LTM. If you cannot remember something you once knew, is it because it has been lost from the system, or because you have developed a problem locating it for retrieval. Permanent losses do occur as a result of brain damage, and it is possible that some memories simply decay away if they are not accessed for a very long time. We do know with certainty, however, that some failures of retrieval are due to temporary blockages and not to the loss of the information in memory. You may be unable to remember someone's name at present, for example, but later it comes to you. Obviously, it was there in memory all the while.

Critical Discussion

When we deal with information, we do so in steps. One way to think of this is to picture the process of acquiring, retaining, and using information as an activity called information processing, which is diagrammed in the following Figure. Information comes from the outside world into the sensory registers in the human brain. This input consists of things perceived by our senses. We are not consciously aware of most of the things we perceive; we become aware of them only if we consciously direct our attention to them. When we do focus our attention on them, they are placed in our working memory.



(A Model of Human Information Processing)

It may be convenient to view information processing as parallel to the way in which an executive manages a business. Information comes into the business across the executive's desk - mail, phone calls, personal interactions, problems, etc. (This is like short-term memory.) Some of this information goes into the waste basket (like being forgotten), and some of it is filed (like being stored in long-term memory). In some cases, when new information arrives, the executive gets old information from a file and integrates the new information with the old before refilling it. (This is like retrieving information from long-term memory to integrate it with new information then storing the new information in long-term memory.) On other occasions the executive may dig out the information in several old files and update the files in some fashion or integrate them in some way to attack a complex problem. The business of human learning operates in much the same manner.

This above figure represents an imperfect model - an oversimplification of human thought processes. We all engage in information processing; but nobody - not even the greatest neurological scientist in the world - fully understands what happens when we do so. Nevertheless, this model does provide useful insights into how to help learners acquire and retain information. It is also important to note that the components of memory undergo considerable development as the child grows into adulthood (Schneider, 1989). Cognitive frame of reference for analysing the process of learning is now multi-disciplinary. Now, executive process and metacognitive knowledge (knowledge about one's own cognitive system and how it functions) have been taken into account seriously in explaining human information processing.

Question :

Let Us Check Our Progress

Note : Verify your answer with those materials stated earlier of this Unit.

1. From what sources does information enter the working memory?
2. From what source does information enter long-term memory?
3. What process causes information to stay *in the working*

4.1.7 : LET US SUM UP

To sum up we can say that learning is a process that brings relatively permanent changes in behaviour of a learner through activity, experience or practice. It can be classified into specific categories like trial & error, conditioning, insightful learning, chain learning, concept learning, verbal learning etc. As its outcomes it helps in bringing desirable modifications in behaviour, attaining teaching-learning objectives, achieving proper growth and development, seeking balanced development of personality and proper adjustment and realizing the goals in life. Understanding of the nature of learning process helps us in solving the problems related to the educational processes.

Learning is affected by so many factors that may be broadly classified as those associated with learner, the type of learning experiences provided to the learner, and the men and material resources available for learning. Actually learning is influenced by the individual's psychological and physiological states, his environment and methods of learning.

How we remember can be explained through the models of memory. Atkinson and Shiffrin's memory storage and transfer model, put forward the concept of three separate kinds of storage for the three types of memory - sensory, short-term and long-term. Sensory or immediate memory helps an individual to recall something a split of a second after he perceives it, which has an extremely brief retention span. Short-term memory is also temporary, though not nearly as short-lived as immediatememory. Here the time of retention may be further extended through rehearsal. Long-term memory, unlike short-term memory, has a seemingly limitless capacity to store information, undergoes little or no decay, and requires little or no rehearsal. It is also able to code information according to meaning, pattern and other characteristics. The deeper the processing of the information, the longer it can be remembered.

4.1.8: ASSIGNMENTS

1. Write an essay on the nature and concept of learning.
2. Discuss briefly the psychological factors of a learner influencing learning. Which factors are the most important? — Give reasons.
3. What do you mean by 'problem solving learning' and 'learning by insight'?
4. "Attention and Interests are said to be inter-related." Explain this statement and bring out the meaning of both.
5. Analyse memory. State the different types of memory. Can it be improved?
6. In what ways is human information processing both similar to, and different from, computer information processing? — Discuss.
7. Illustrate the processes involved in each phase of information processing.

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Block – 4

LEARNING

Unit - 2

Transrer of Learning

CONTENT STRUCTURE:

4.2.1 : Introduction

4.2.2 : Objectives

4.2.3 : Meaning and Concept of Transfer of Learning

4.2.4 : Need and importance of Transfer of Learning

4.2.5 : Factors Influencing Transfer of Learning

4.2.6 : Types of Transfer of Learning

4.2.7 : Let Us Sum Up

4.2.8 : Suggested Readings

4.2.9 : Assignments

4.2.1 INTRODUCTION

Processes of learning and the transfer of learning are central to understanding how people develop important competencies. Learning is important because no one is born with the ability to function competently as an adult in society. It is especially important to understand the kinds of learning experiences that lead to transfer, defined as the ability to extend what has been learned in one context to new contexts. Educators hope that students will transfer learning from one problem to another within a course, from one year in school to another, between school and home, and from school to workplace. Assumptions about transfer accompany the belief that it is better to broadly educate people than simply "train" them to perform particular tasks.

Transfer of learning has been discussed in a number of different contexts, including education, psychology and management and as such has been defined in a number of ways.

Some examples are:

- Real transfer happens when people carry over something they learned in one context to a 'significantly different' context (Fogarty et al., 1992).
- Transfer is the application of knowledge learned in one setting or for one purpose to another setting and/or purpose (Gagne et al., 1993).
- Transfer of learning is a fundamental assumption of educators. We trust that whatever is learned will be retained or remembered over some interval of time and used in appropriate situations (Ripple and Drinkwater, 1982).
- In a sense any learning requires a capful of transfer. To say that learning has occurred means that the person can display that learning *later* (Perkins and Salomon, 1996).
- **Encyclopaedia of Educational Research:**"The term' learning' would be applied to the special kind of transfer phenomena in which there is great similarity between training conditions and test conditions."

4.2.2 OBJECTIVES

After going through the Unit, you will be able to :

- Define Transfer of Learning.
- State the influencing factors of transfer of learning.
- Explain the nature and types of Transfer of Learning.

4.2.3 MEANING AND CONCEPT OF TRANSFER OF LEARNING

Transfer of Learning is the ability to take information learned in one situation and apply that to another and different situation. One example of this is being able to take mathematic techniques and procedures learned in a classroom and applying these to a practical situation, i.e. going to the grocery store and using multiplication or division to determine the price per gram of foods to determine the actual best prices.

Transfer of learning occurs when learning in one context or with one set of materials impacts on performance in another context or with other related materials. For example, learning to drive a car helps a person later to learn more quickly to drive a truck. Transfer is a key concept in education and learning theory because most formal education aspires to transfer. Usually the context of learning

(classrooms, exercise books, tests, simple streamlined tasks) differs markedly from the ultimate contexts of application (in the home, on the job, within complex tasks). Consequently, the ends of education are not achieved unless transfer occurs. Thus, the prospects and conditions of transfer are crucial educational issues.

The word transfer is used to describe the effects of past learning upon present acquisition. In the laboratory and in the outside world, how well and how rapidly we learn anything depends to a large extent upon the kinds and amount of things we have learned previously.

In simple way transfer may be defined as "the partial or total application or carryover of knowledge, skills, habits, attitudes from one situation to another situation"

Hence, carryover of skills of one learning to other learning is transfer of training or learning. Such transfer occurs when learning of one set of material influences the learning of another set of material later.

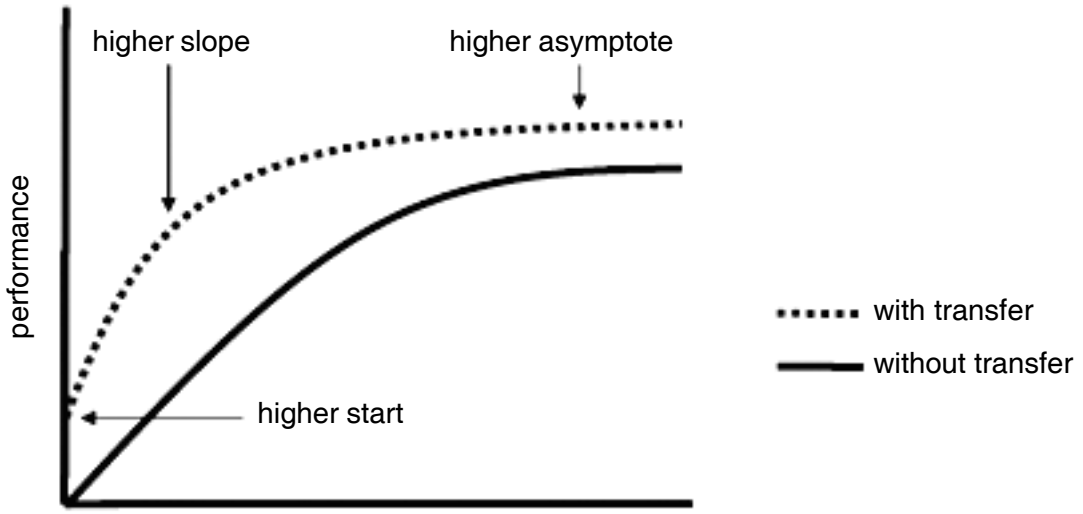


Fig. 2. Three ways in which transfer might improve learning.

Source: ftp.cs.wisc.edu/machine-learning/shavlik-group/torrey.handbook09

Definition of Transfer of Learning:

References	Definition
Grohmann et al. (2014)	Training transfer occurs when changes in on-the-job behaviour is apparent due to the individual applying what they have learned in training to their actual work setting.
Culpin et al. (2014)	Learning transfer refers to "the application, generalizability and maintenance of new knowledge and skills to a wide variety of managerial situations, and fundamentally examines the extent to which course content is transferred or applied by participants back in their workplace."
Bates et al. (2012)	Transfer of learning refers to "the extent to which knowledge, skills and abilities learned in work-related training are generalized and maintained on the actual situation."
Blume et al. (2010)	Transfer of learning is referred to as positive transfer of training and defined as "the extent to which the learning that results from a training experience transfers to the job and leads to meaningful changes in work performance."
Cheng and Hampson (2008)	"Transfer of learning occurs when the knowledge learned is actually used on the society for which it was intended."
Burke and Hutchins (2007)	"Training transfer generally refers to the use of trained knowledge and skill back on the Real situation."
Kirwan and Birchall (2006)	Learning transfer refers to how pupil generalize what they have leamed to their classroom and how they maintain this content over a period of time.
Baldwin and Ford, (2006).	"Transfer of training is of paramount concern for training researchers and practitioners. Despite research efforts, there is a growing concern over the "transfer problem."

Question :

Let Us Check Our Progress

Give a suitable definition of transfer of learning.

Notes : (a) Space is given below for your answer.

(b) Write in your own words.

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4.2.4 NEED AND IMPORTANCE OF TRANSFER OF LEARNING

The challenge for the teacher is then to promote the transfer. While many times students will subconsciously apply the previous lessons to the new situation, they will sometimes need some help. A teacher should be prepared to help their students when facing a new lesson. Remind them of previous lessons or experiences and then help them to see how they could apply the previous information to the new situation.

Transfer of learning is also important for teachers, learners, supervisors, trainers, etc. for a number of reasons :

- Transfer of learning is in the best interest of teachers and students. Students acquire new knowledge and skills in a learning event to improve their ability to meet the needs of their future learning process.

  Improving the transfer of learning enhances the quality of learning and thus may lead to increase their satisfaction, which helps further learning.

- Learning interventions can be expensive. Improving the transfer of learning helps save time and money.

- Learners are motivated to perform well at their jobs when they are able to apply what they have learned previously. The support and guidance of the teachers can encourage and empower learners to make changes and improve performance.

- Teachers and learners are more accountable for implementing new knowledge and skills if there is early knowledge on what will occur after training. Transfer of learning may help in this case.

- Spending valuable time for the outcome of learning helps teachers and learners to prepare for the future that meet the specific needs of learners as well as teachers.
- In a world in which globalisation, technological advances and increased interdependence are required, there is an increasing acknowledgement that we need information and thinking that will transfer. As Haskell (2001) observes, the Information Age necessitates innovative responses and some (for example, Senge et al., 1994) see the need for organisations to reposition themselves as learning organisations to maintain high quality outcomes. A key prerequisite of this is, of course, transfer of learning.
- The rapid growth in knowledge, technology and scientific change combined with the frequent job changes of workers will favour those who have a broad-based and transferable set of behaviours and skills. Life-long learning has become a necessity and transfer of learning provides the vehicle for this to occur.
- The trainee and employer want transfer to occur, but there is a clear understanding that education and training is often too theoretical, and consequently there is a failure to integrate the learning and for the training to impact on-the-job (Haskell, 2001). This promotes disillusionment and frustration in trainees and management alike. Attention to the needs of the individual learner and the organisation require balancing, so that the transfer outcomes benefit both and enhance development.
- Improved accountability and evaluation systems have highlighted the importance of return-on-investment and the need to promote education and training programmes that do have impact (Phillips, 1996; Williams et al., 2003). Throughout the world, large amounts of funding are devoted to training and it is suggested that the impact is often minimal (Williams et al., 2003).

Question :

Let Us Check Our Progress

1. State two importance of transfer of learning.

Notes : **(a)** Space is given below for your answer.

(b) Write in your own words.

i.

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4.2.5 FACTORS INFLUENCING TRANSFER OF LEARNING

In the teaching-learning environment, several factors are influences. According to Blume et al, (2010) and De Rijdt et al, (2013) the main three aspects of factors influence the transfer of learning:

1) Instructional Design Factors:

Good Instructional design encourages learners to interact with the material, come up with their own ideas and apply what they're learning within the classroom environment.

Consider the Theories of Training:

There are three main theories on a successful transfer of training.

- The first is called Theory of Identical Elements and states that teaching occurs when the skills in the course are identical to what is needed for the learning (context relevant).
- Secondly, there's Stimulus Generalization Approach. With this method, lessons are structured, so only the most important and relevant parts of what is needed are taught. This maximizes instruction transfer by relying on far transfer, or the learner's ability to apply knowledge even when the classroom environment is not similar to the learning environment.
- Lastly, we have Cognitive Theory of Transfer which theorizes that the success of transfer is dependent upon the learner's ability to remember learned skills. To increase transfer, this theory emphasizes making the material meaningful and giving the learner methods, tricks and schemes to make information easier to remember.

2) Learner Factors:

Self efficiency:

While a learner's self-reliance and sufficiency levels are very important, as a teacher you will benefit from identifying this before ready your class. To combat low capability from learners, you can incorporate more background information, and relevant lessons to both teach and raise confidence.

Motivation:

Motivation is key to encouraging retention of knowledge. It's also important to remember it well enough to apply it to other situation. Fortunately, a well-designed learning metirial can increase

motivation with various methods such as reward systems and by reinforcing how these new skills will benefit the learner.

Barriers to Effective Learners:

Learners can be de-motivated and fail to transfer due to a variety of reasons including: Inefficient support from peer group and superiors, difficulties with the lession itself, time constraints and outdated or backdated teaching equipments.

Personal Time and Stress Factors:

Often underestimated as a cause of ineffective transfer, personal difficulties can make it very difficult to accomplish this. You and your learners all have limited energy, time and mental capacity which hinders your ability to teach effectively and their ability to retain and transfer information.

3) External Factors:

Despite being one of the most significant factors in the transfer, a learner's class room environment is often ignored as a factor. What's happening at class room before and after your delivered lesion

- Is there a lack of proper equipment?
- Is there not enough management support?
- Are there outdated or unsafe conditions they have to contend with?

If so, transference can be even more difficult.

Given Resources:

Learners will remember content back at their lesion by being given opportunities to apply what they've learned and also the proper equipment to do this with. This includes everything from paper to write on up to practical educational and technological support.

Support from Higher-Ups:

Transfer can also be facilitated and hindered by the involvement of a higher authority or other teacher. If the teacher takes the course seriously and lends support, then students are more likely to retain and transfer the knowledge. When a authority encourages participation in learning and use of new methods on the lesion, this is when the transfer is most successful.

Positive Support from Peers:

Adequate support from peers, including feedback from the group, is important to reinforce the importance of the learning and encouraging transfer. This factor can and should also include success stories from peers who have already used the knowledge.

External Encouragement:

This factor includes peer and teacher support along with whether or not a learner is being given the opportunity to use new skills without repercussions.

Direction & Amount of Transfer Guidelines In comparing two movements, situations, drills, and activities the following identical element transfer principles apply: 1. Stimuli same & responses same = High Positive Transfer 2. Stimuli different & responses same = Slight + Transfer 3. Stimuli same & responses different = Negative Transfer 4. Stimuli different & responses different = Zero Transfer

4.2.6 TYPES OF TRANSFER OF LEARNING

Transfer can also be positive or negative. In positive transfer, previous learning facilitates performance in the transfer task. In negative transfer, the opposite is the case: previous learning interferes with the transfer task.

Ellis has defined three types of transfer: positive transfer, negative transfer and zero transfer.

Salomon and Perkins again (1992) suggested six different types of transfer of learning :

: (a) Low-road and (b) High-road transfer (c) Positive transfer (d) Negative transfer (e) Near and (f) Far transfer.

Seel and some researchers (2012) have considered the following types of transfer: (a) Lateral transfer (b) Sequential transfer (c) Horizontal transfer (d) Vertical transfer and (e) Bilateral transfer.

Explain there are some types of transfer of learning:

1. Positive transfer:

When learning in one situation facilitates learning in another situation, it is known as positive transfer. For example, skills in playing violin facilitate learning to play piano. Knowledge of mathematics facilitates to learn physics in a better way. Driving a scooter facilitates driving a motorbike.

Positive Transfer: Transfer of learning or training is said to be positive when the learning or

training carried out in one situation proves helpful to learning in another situation. Examples of such transfer are:

- The knowledge and skills related H.S. school mathematics help in the learning of statistical computation;
- The knowledge and skills acquired in terms of addition and subtraction in mathematics in school may help a child in the acquisition of knowledge and skills regarding multiplication and division;
- Learning to play badminton may help an individual to play ping pong (Table Tennis) and lawn tennis.

2. Negative transfer:

When learning of one task makes the learning of another task harder- it is known as negative transfer. For example, speaking Telugu hindering the learning of Malayalam.

Left hand drive vehicles hindering the learning of right hand drive.

The basic causes of negative transfer are - Spatial location and timing between two tasks, Memory representation, Mental confusion

3. Neutral transfer:

When learning of one activity neither facilitates nor hinders the learning of another task, it is a case of neutral transfer. It is also called as zero transfer.

For example, knowledge of history in no way affects learning of driving a car or a scooter.

4. Bilateral transfer:

Transfer of learning relates to learning of the same task but with different features. Important concept about bilateral transfer is the direction of transfer.Human body is divided into two lateral : right and left. Training of one lateral automatically helps other half on the body. This lateral transfer of learning is called 'Bilateral transfer'.

For instance, once a person has learned to shoot a basketball with their right hand it is not difficult to transfer that learning to the left hand.

5. Near and Far transfer:

Transfer of learning can be divided into two categories, Near and Far (Cree, Macaulay, 2000).

Near transfer of skills and knowledge are applied the same way every time the skills and knowledge are used. Near transfer training usually involves tasks that are procedural in nature, that is, tasks which are always applied in the same order. Although this type of training is easier to train and the transfer of learning is usually a success, the learner is unlikely to be able to adapt their skills and knowledge to changes.

Far transfer tasks involve skills and knowledge being applied in situations that change. Far transfer tasks require instruction where learners are trained to adapt guidelines to changing situations or environments. Although this type of training is more difficult to instruct (transfer of learning is less likely), it does allow the learner to adapt to new situations

Near transfer is the direct application level of learning that involves a higher level of cognitive processing (Hung, 2013) When the same application of learned behavior, content knowledge, conceptsor skills in one situation is transferred to another very similar situation is called 'Near transfer'.

According to Hung (2013), far transfer presents challenges for students due to the decrease in the degree of similarity and pragmatic relevance between the forms of original knowledge and target far transfer knowledge, the unfamiliarity of the target context, or a higher number of variables involved. "Far transfer also requires more modification of the original knowledge than near transfer to adapt to the target transfer condition" (Hung, 2013).

6. Lateral transfer:

Lateral transfer occurs when learners are able to solve different but similar problems of equal complexity as soon as they have learned to solve one of them. Lateral transfer involves a learning achievement at the same level as the initial learning but in another context.

7. Sequential transfer:

The concept of sequential transfer corresponds with the observation that most content learned in school is organized into broad disciplines and is taught sequentially. Sequential transfer happens in one and the same context, i.e. both are organized horizontally.

8. Vertical transfer:

Vertical transfer, on the other hand, requires that learning at a lower level must be transferred to a higher level of cognitive skills. Thus, vertical transfer is the ability to solve similar and at the same time more complex or elaborated problems with the help of previously acquired knowledge.

9. **Horizontal transfer :**

Lateral transfer and Sequential transfer are jointly called horizontaltransfer, because in both the cases the learner remains in the same behaviour category.

10. Low-road transfer and High road transfer:

In recent years, the low-road/high-road transfer of learning, developed by Salomon & Perkins (1988), has proven to be a more fruitful.

Low-road transfer refers to developing some knowledge/skill to a high level of automaticity. It usually requires a great deal of practice in varying settings.

High-road transfer involves: cognitive understanding; purposeful and conscious analysis; mindfulness; and application of strategies that cut across disciplines. In high-road transfer, there is deliberate mindful abstraction of an idea that can transfer, and then conscious and deliberate application of the idea when faced by a problem where the idea may be useful.

11.Specific transfer:

Specific transfer occurs when the contents of learning are transferred. For example, a student who is taught the basic organizational components of a narrative uses exactly those components later in writing an organized and elaborated story.

12. General transfer:

In the case of general transfer, general skills or underlying principles are transferred. For example, the same student may recognize that there is an organized structure that needs to be imposed on other types of writing as well, not just stories.

13.Surface & deep transfer:

In surface transfer, the student transfers learning to a similar set of circumstances. For example, having learned about the items present on a car dashboard, the student driver applies that learning to a different-looking dashboard. In deep transfer, the student might transfer that learning to an airplane dashboard that looks very different.

The following table presents different types of transfer, as adapted from Schunk (2004)

Type	**Characteristics**
Near	Overlap between situations, original and transfer contexts are similar.
Far	Little overlap between situations, original and transfer settings are dissimilar.
Near	Overlap between situations, original and transfer contexts are similar.
Far	Little overlap between situations, original and transfer settings are dissimilar.
Positive	What is learned in one context enhances learning in a different setting.
Negative	What is learned in one context hinders or delays learning in a different setting.
Vertical	Knowledge of a previous topic is essential to acquire new knowledge.
Horizontal	Knowledge of a previous topic is not essential but helpful to learn a new topic.
Literal	Intact knowledge transfers to new task.
Figural	Use some aspect of general knowledge to think or learn about a problem.
Low Road	Transfer of well-established skills in almost automatic fashion.
High Road	Transfer involves abstraction so conscious formulations of connections between contexts.
High Road/Forward Reaching	Abstracting situations from a learning context to a potential transfer context.
High Road/Backward Reaching	Abstracting in the transfer context features of a previous situation where new skills and knowledge were learned.

Question :

Let Us Check Our Progress

(i) Mention different types of transfer.

(ii) Define High and Low Road transfer.

Notes: a) Space is given below for your answer.

b) Write in your own words.

(i) .....

(ii) .....

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4.2.7 LET US SUM UP

Transfer of Learning is the ability to take information learned in one situation and apply that to another and different situation. One example of this is being able to take mathematic techniques and procedures learned in a classroom and applying these to a practical situation

Transfer is a key concept in education and learning theory because most formal education aspires to transfer. Usually the context of learning (classrooms, exercise books, tests, simple streamlined tasks) differs markedly from the ultimate contexts of application (in the home, on the job, within complex tasks). Consequently, the ends of education are not achieved unless transfer occurs. Thus, the prospects and conditions of transfer are crucial educational issues.

The challenge for the teacher is then to promote the transfer. While many times students will subconsciously apply the previous lessons to the new situation, they will sometimes need some help. Transfer of learning is also important for teachers, learners, supervisors, trainers.

In the teaching-learning environment, several factors are influences

1) Instructional Design Factors

2) Learner Factors

3) External Factors

There are different forms and types of transfer and modern researchers have through some important light on it. Some researchers have considered the following types of transfer: (a) Lateral transfer (b) Sequential transfer (c) Horizontal transfer (d) Vertical transfer and (e) Bilateral transfer.

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4.2.9 ASSIGNMENTS

1. Explain the factors of transfer of learning with examples.
2. What are the different types of transfer? Briefly describe Far Transfer and Near Transfer with examples

Block – 4
Learning

Unit - 3
Theory and Methods of Transfer of Learning

CONTENT STRUCTURE:

4.3.1 : Introduction

4.3.2 : Objectives

4.3.3 : Theories of Transfer of Learning

4.3.4 : Improving Transfer of Learning

4.3.5 : Educational Implication of Transfer of Learning

4.3.6 : Role of the teacher in Transfer of Learning

4.3.7 : Let Us Sum Up

4.3.8 : Assignments

4.3.9 : Suggested Readings

4.3.1 INTRODUCTION

Transfer of learning is one of the most universally applied principles of education. Transfer of learning will be concerned with theories, which focus on internal cognitive events. This view, which has its origin in recent cognitive theory, takes the position that facilitative transfer can be enhanced by increasing the likelihood that relevant prior knowledge will be retrieved in appropriate situations.

4.3.2 OBJECTIVES

After going through the Unit, you will be able to :

- Discuss different theories of Transfer of Learning.
- Suggest methods of enhancing Transfer of Learning.
- Ascertain the role of teachers in Transfer of Learning.

4.3.3 THEORIES OF TRANSFER OF LEARNING

Transfer of learning goes far beyond simply repeating memorized material but to being able to take old knowledge and experiences and apply this old knowledge to a new concept and being able to use both the new and old knowledge to solving a problem, in this view the transfer of learning is very very important concept in teaching learning process. So we can discuss some important theory of transfer of learning :

(1) Theory of Mental Discipline

(2) Theory of Identical Elements

(3) Theory of Generalisation

(4) Theory of Transposition

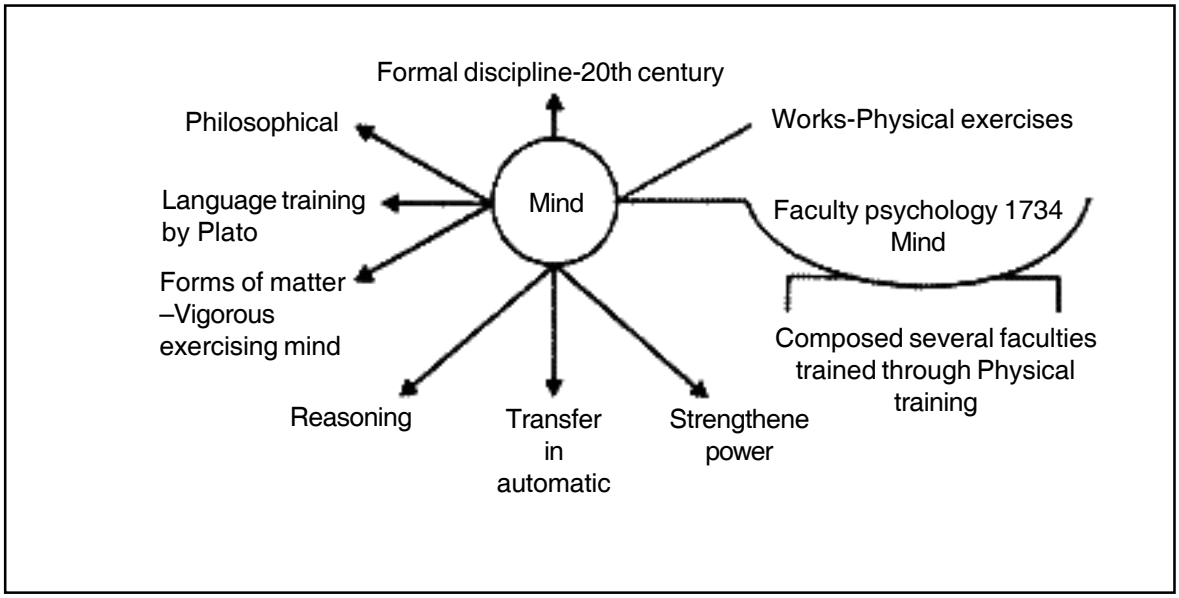
(5) Theory of Learning to Learn

(6) Theory of Ideals

(1) Theory of Mental Discipline :

This theory came to existence in 20^{th}century. It is philosophical in nature. Mind is the central position which is composed of several facilities. These faculties are to be trained through muscular and physical training. This facility psychology developed during 1734.

According to this theory, transfer is automatic. All that would require is to exercise various faculties and strengthen them.



Source: http://www.psychologydiscussion.net/educational-psychology/6-important-theories-of-transfer-of-learning/1827

From the above diagram it is known that bright students learn better than that of slow learners because memorization is more faster in length students where as slow in slow learner.

2. Theory of Identical Elements :

In1901 Thorndike and Woodworth proposed that if stimuli in two situations are similar and same responses are called for, transfer would take place. The more the elements of the two situations are identical more will be the transfer and more the dissimilarities between the two elements less will be the transfer. This is the basis of the Theory of identical element.

According to this theory transfer takes place from one situation to another to the extent that there are common or identical elements (or components) in the two situations. Reasoning ability is common to Geometry and Physics. Hence transfer can take place here. Modern psychologists also believe that mental functions like perception, attention, memory and reasoning are not separate entities but interrelated aspects of the total functioning of the mind.

Hence learned response in one situation may benefit the learner in another situation, if there are common elements in it. This theory was propounded by Thorndike. He says**, "By identical elements are meant mental process which have the same cell action in the brain as their physical correlate"**. Latter Woodworth substituted the word element by component.

Examples:

(i) A boy who is a good hockey-player can be a good football- player also, because in playing hockey he has learnt the skill of keeping eye on the ball, judging the flight of the ball, catching the ball, hitting the ball, hitting the ball towards the companion or the goal etc. All these skills will help him in both the games. These skills are common elements in the two games.

(ii) A student who acquires good expression and style in writing in one language can be as good a writer in another language he learns.

Identities of substances:

Identities of procedure → Total result

Matter → Mind

Exp :

Training	Transfer
Piano	Typing/Computer
Sanskrit	Hindi
Latin	English
Car Driving	Bus Driving

Source :http://www.psychologydiscussion.net/learning/learning-theory/transfer-of-training-types-and-theories-child-psychology

3. The Theory of Generalization :

This theory is developed by C. Judd. In this theory transfer of learning takes place primarily through generalization and degree of transfer depends upon the extent to which experiences in the first situation are understood and consolidated into generalization.

Better transfer can be possible when one can understand the principle. It is just an extension of the theory of identical elements. General principle Specific solution Laws of refraction More significant One situation —> transfer other superior situation. It is a fact that when practice of anything is made without training, then result comes within automatically.

Suppose two situations a common element viz., punctuality. According to the common element theory, a boy who is punctual at dinner party should be punctual for school also. But

no, this may not always be true. The child will not be punctual in both situations, unless 'punctuality' has become a part of the child's attitude pattern as a result of schooling and training.

Again, a child may be tidy in the school for fears of punishment, but he may be untidy at home. Transfer can take place from school situation to home (or vice-versa) if the child full grasps the principle of tidiness, and gains a complete view of the principle.

Symbolically we may say what is learned in situation X gets transferred in situation Y when a general principle applicable to both is acquired. Judd explained this principle through an experiment on two groups of boys regarding throwing darts at a target placed 12 inches under water.

Group	Practice Schedule	Training	Result
1. Control Gr. A	Practice in shooting for 12 days	No training	In final test depth was changed and found that Gr. B done better than A
2. Experimental Gr. B	Do	Training in the laws of reflection	Verygood performance

He explained the principle of refraction to one group could not apply the principle as the target was very deep. But next time, the target was kept only four inches deep. This time that group only. But that did not help that group, because the pupils in that group fared better. Hendrickson and Schoroder made further experiments of this type and confirmed the theory.

This theory is in consonance with the Gestalt theory of Psychology. The Gestaltists believe that learning of a meaningful configuration presumes a kind of organisation that modifies the organism. The organisation leads to the necessity of generalisations.

4.Theory of Transposition :

It is advocated by Gestalt psychology. The fundamental "formula" of Gestalt theory might be expressed in this way : There are wholes, the behaviour of which is not determined by that of their individual elements, but where the part-processes are themselves determined by the intrinsic nature of the whole. Transfer starts in understanding the fact and perception of similarity by the learner. It is known as pattern of relationship. It is not the specific skills or facts or even

underlying principles which are important, but the understanding of relationship between facts, process and the principles are the real basis of transfer.

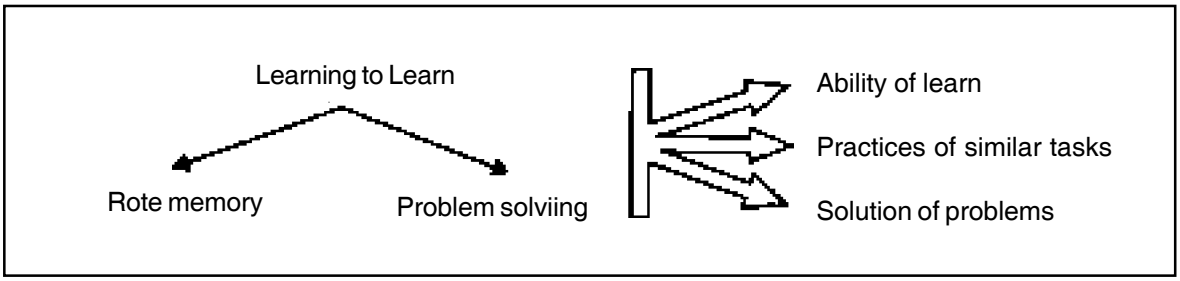
It is not the principle or generalisation that is at the basis of transfer, but the understanding of the relationship between facts, processes and principles. Hence the need for 'transposition'.

Thus a song learned in a certain key may be recognised even in a different key. The component of the song may be different, but that does not hamper the transfer. It is because of the understanding of the total situation.

5. Theory of Learning to Learn :

Transfer of training has been explained by the theory 'Learning to Learn' developed by Harlow. After practicing a series of related or similar tasks then learner learns the capacity to learn the same thing. It is found that whenever learner comes in contact with various learning materials then he learns efficiently and effectively. Learning to learn means when learning starts from one method then it goes to another method.

For example, if a person solves linear equations for a number of days, he progressively becomes efficient in solving linear problems. He will be able to solve the similar problems and will be able to solve it faster. This progressive improvement in transfer of learning is known as 'learning to learn'.



Source :http://www.psychologydiscussion.net/educational-psychology/6-important-theories-of-transfer-of-learning/1827

6.Theory of Ideals:

It was propounded by W.C. Bagley. When ideas are stressed are perused then transfer of learning can be taken place. Ideas like honesty, truthfulness, love etc. can be transferred in this theory.

There is no denying the fact that ideals, once adopted, and adopted seriously, are applicable to all situations. The truth-seeking ideal, the spirit of enquiry, the love for wisdom and thirst for discovery are transferable from one subject to another, whether it is science or philosophy or history.

The teacher will do well to emphasise some practicable ideals, which can be applied to majority of situations. If these ideals are kept in view, teaching methods will secure greater transfer.

Question :

Let Us Check Our Progress

Do you consider that the Theory of Identical element is more important for transfer of learning?

Give two reasons.

Notes: (a) Space is given below for your answer.

(b) Write in your own words.

…….....

…….....

…….....

4.3.4 IMPROVING TRANSFER OF LEARNING

Transfer of learning is pervasive in our everyday life at work, at home and in the community. Transfer takes place whenever our existing knowledge, abilities and skills affect the learning or performance of new tasks. But what are the way to improve it ?

Once you understand how to go about transferring your knowledge to new contexts, however, you could change ways to apply your prior knowledge to the situations and problems you might face in a new role. But the number of barriers impact before and during transfer of learning shows that attention must be given in these barriers and then enhance transfer of learning:

Examples of Barriers and Enhancers to the Transfer of Learning

BARRIERS	FACTORS	ENHANCERS
an absence of the foundational knowledge or experience	Learning participants	prior knowledge and experiences that enables new connections
Lacks application to the practical situation, includes no follow-up strategies	Instructional design and implementation	includes application exercises as a major part of the instructional activities includes transfer-of learning strategies that students have helped create
focuses on knowledge when it is skill and attitude changes that are needed students can't use the information	Instructional content	students see the relevance of the content builds on previous knowledge and experiences of participants
are disruptive to present practices and routines no ownership in the instruction changes	Changes required to apply Learning	are allotted enough time to develop class room environment is perceived as welcoming the change process
lacks concrete support from peers, teachers and home offers a non-supportive climate for learning	Organizational Context	offers support from key personnel along with substantive rewards adapt to new structures and norms

Here some Principles of improving transfer of Learning:

1. Focus on the relevance of learning:

Learning to be engaging and to be able to remember it in other contexts, it's important to establish relevance early on. Think about how you might apply what you're learning today in your

future or everyday life and then try to tie it to some of your short or long-term goals. Focusing on how your learning will help you reach that goal can make even the most tedious study material seem more engaging, because you understand that it's important to your future goals.

2. Take time to reflect and self-explain:

Before you can transfer knowledge to new contexts, you need to understand the concept inside and out, which is why it's important to take time for reflection and self-explanation.

Self-explanation can help you to identify any incorrect assumptions, lead to a deeper understanding of the material, and ultimately promote knowledge transfer.

So when you're learning about something that's completely new to you, take a moment to think about how you would explain it in your own words, whether this means using simpler words that are easier for you to remember or finding a way to connect the new information to something you already know by using real-world examples.

3. Use a variety of learning media:

Another way to facilitate the transfer of learning to new contexts is to use as many different learning media as possible, from text and imagery to video and audio. Using pictures, narration, and text can help prevent your cognitive resources from becoming overloaded and improve learning transfer.

Even if your course doesn't have visuals or narration built into it, you can try to find ways to supplement what you're learning by using a variety of educational resources such as YouTube and SWAYAM, MOOCs etc.

4. Change things up as often as possible:

It's easy to build with your learning by studying around the same time, in the same location, and using the same study strategies every day. But when you get used to constantly studying in the same way, it can be difficult to transfer the knowledge you acquire to new environments and situations.

Research shows that organizing your learning in a more random way improves retention and transfer after (but not during) the instruction. So although studying in different environments and conditions may initially make it harder to remember what you're learning, in the long run it will help you retain the information more effectively.

5. Identify any gaps in your knowledge:

Without a complete understanding of the concept or information we are learning, transferring it to new contexts will be more difficult. With this in mind, it's important to identify any gaps in our knowledge and then work on strengthening our weaker areas.

One excellent way to do this is through practice testing, as we will be able to see exactly what types of questions we are consistently getting wrong and what topics you have yet to master.

6. Establish clear learning goals:

Establishing clear learning goals will give a better understanding of what trying to get out of our learning and how might later transfer that knowledge and apply it in our society or personal life. If we know what the expected learning outcomes are, we will also be able to focus on the right material.

When setting learning goals, it is better to be specific rather than general but make sure setting goals are realistic too. For example, if we are learning a new language, making it our goal to be fluent within one month is not very realistic. Making it our goal to learn the vocabulary and phrases necessary to go shopping or eat out at a restaurant is more doable, however.

7. Practise generalising:

Generalising is the ability to transfer the knowledge or skills gain in one setting to a new one. It's all about seeing the bigger picture and looking for more widely applicable rules, ideas, or principles. For example, a child that learns to stack wooden blocks could generalise that skill and later use it to build more elaborate creations using Lego bricks.

So when studying a new topic or concept, think about past lessons or experiences and look for patterns and relationships. Then determine whether these generalisations can be supported by other evidence that know of.

8. Find daily opportunities to apply what learned:

Applying what learned at school to real-world problems takes a lot of practice, so it's important to look for opportunities to apply what learning in our everyday life.Not sure how to start applying what you have learned in your class room or everyday life? Go back and check your learning goals to remind yourself of what you set out to learn.

Question :

Let Us Check Our Progress

State two important ways of improving transfer of learning.

Notes: (a) Space is given below for your answer.

(b) Write in your own words.

i. …….....…….....

…….....…….....…….....…..

ii. …….....…….....

…….....…….....…….....…..

4.3.5 EDUCATIONAL IMPLICATIONS OF TRANSFER OF LEARINING

It is a crucial question, how to secure maximum transfer. Teacher must know the factors that determine or affect transfer. We conclude the educational implication on the basis of the theories propounded by psychologists and experiments conducted.

1.The three major factors are:

(i) Intelligence,

(ii) Positive attitude and

(iii) Meaningfulness of the contents.

(i) Intelligence:

The amount of transfer is closely related to the intelligence of the learners. Thorndike's experiments give clear evidence. Brighter children transfer their experience more effectively in different situations than average or dull children. The intelligent pupil comprehends the subject-matter more efficiently, masters it, remembers it and over-learns it. Over-learning helps greater transfer.

(ii) The positive self-confident attitude:

Influences greater transfer when the pupil knows that a particular subject is to be learnt not for the sake of examination but for its intrinsic work, for its applicability, when he is confident of its utility in varying situations, he is bound to apply the knowledge in as large extent of the field as possible. The teacher and the pupil should be conscious of the goal.

(iii) Generalising affects transfer i.e., transfer depends up on the extent to which principles are developed and experiences are made more meaningful. The common elements, common principles and common ideals in different situations, affect transfer. This has already been explained above in connection with common. Element Theory, Theory of Generalisation and Theory of Ideals.

2. Curriculum and Transfer of Learning:

The theories and experimental evidences regarding transfer of learning provide us with certain broad principles on the basis of which we can remodel, overhaul or reorganise the present curriculum in order to secure-greater transfer.

(i) Disciplinary value of subjects:

As the theory of mental discipline is no longer acceptable now, there is no reason for inclusion or rejection of any subject in the curriculum simply for its disciplinary value. We can easily dispense with theoretical grammar, Euclid's logic (in geometrical theorems) and classical languages which to thought to be of disciplinary value.

(ii) Varying Importance of Subjects:

All subjects in the present curriculum do not have equal value. Some subject are least connected with life situations (like ancient history), and these have the least transfer value. The present approach is the social-utility approach in including a subject or a topic in the curriculum.

(iii) Subject-matter Vs. Experiences:

Thorndike and Wesman have experimentally proved that it is not the subject-matter but the experiences gained in the study of the subject that is important and useful for future applicability. The transfer value of all the subjects for any trait (say improvement in reasoning) is almost equal.

But the experiences gathered by the pupils differ, and that accounts for greater or lesser positive transfer. Hence an attempt should be made to provide superior experiences leading to greater transfer rather than teach subjects in a theoretical manner.

Mathematics enjoys no monopoly for developing reasoning ability. There are no less opportunities for the same in the teaching of other subjects, say geography or history or physics. All subjects can be taught in a manner that they encourage raising questions and offering answers.

(iv) Classical Languages:

The old belief that classical language should be taught for its disciplinary value is no longer tenable. Even its linguistic value is questionable. Experiments on transfer value of Latin by Thorndike do not give credit to Latin beyond 10% transfer. In India we may teach Sanskrit not for its transfer value for Hindi or modern Indian languages, but for its literary importance.

(v) Grammar may be taught only for its practical use and application:

The present grammar teachers get lost in details of parsing, tenses, moods, analysis, transformation and etymology, which have no bearing upon the real objectives of teaching the subject, as these do not help correct expression or smooth communication. **"The transfer is to take place from expression to grammar, that is, expression and communication is to take place first and then correct grammatical usage is to follow."**

(v) Subjects related to life:

Subjects and topics which are directly connected with our vocations, physical environment, social environment social living and life-situations have great transfer value. Hence stress should be laid on those subjects which bear daily needs and help solving life problems.

Diversification of courses, and presenting groups of subjects directly connected with future vocations of the pupils, or certain areas of life, will help the pupils in gaining appropriate knowledge of maximum utility which have transfer value for vocations and life-activities.

3. Methods of Instruction and Transfer of Learning:

For securing desirable transfer, the present methods of instructions shall have to be modified and chenge, on the evidences of experimentations . There is no 'best method'. But there are varying approaches to instruction in accordance with varying situations.

(i) Importance of goals:

Firstly goals and outcomes of each subject should be clearly stated. It is only recently that attempts have been made in analysing a particular subjects in terms of objectives, behaviour patterns and learning experiences. Much of what is useless and unrelated to the objectives of a subject is being discarded.

The awareness of goals both on the part of the teacher and the pupil will lead to devotion to work, habits of thoroughness, exactness, accuracy, sound attitude to work and consciousness of the utility for future occasions.

(ii) Understanding of Individual Differences:

The teacher should study each pupil and his credit side and debit side, so as to vary with great flexibility his teaching methods, illustrating material and emphasis on the subject-matter. Approaches towards bright and dull pupils will differ, otherwise the same approach might cause negative transfer.

(iii) Integrated Approach:

It was Herbert who emphasised first the need for correlating various school subjects, and further upon concentrating upon subject as a centre of study for many other subjects. Ziller and Colonel Parker actually put this idea into practice. Froebel kept play as the centre of all study. Transfer from one central subject to many others was considered possible.

Dewey gave the integrated approach, and propounded the problem and the project method through which a number of subjects could be introduced in an integrated manner, with their common elements emphasised at one place.

Modern experiments on transfer, the Theory of Common Components, vouchsafe the fact that maximum transfer can be procured by integrating different subjects and emphasising their common elements, principles or generalisations.

(iv) Attitude towards instruction:

The value and importance of attitude towards instruction and study has already been explained above (Theory of Ideals). Healthy attitudes and worthy ideals get integrated into the mental and moral make-up of the pupil, and thus these ensure greater transfer.

The pupils should study with a spirit of enquiry, desire to know love for wisdom and hunger of the soul. All scientific discoveries have been preceded by this attitude. Such an attitude will be transferable from one subject to another.

(v) Practical application of knowledge:

Practical application of knowledge and out-of-school experiences are helpful in assimilating the core of a particular subject. Which can help transfer. Every subject, including the sciences should be taught intelligently with the scope of practical application.

Mursell remarks in this regard.

"When any ability is most intelligently taught and organised for its own sake, it is thereby taught and organised in such a way as will facilitate transfer, and its converse; when we deliberately work for the transfer of some ability, we facilitate its acquisition in its own right."

Question :

Let Us Check Our Progress

Explain the Method of instruction for transfer of Learning.

Notes : (a) Space is given below for your answer.

(b) Write in your own words.

4.3.6 ROLE OF THE TEACHER IN TRANSFER OF LEARNING

The teachers may use some techniques, which may help students in transfer of learning. Some common and essential points the teacher may consider are as follows:

1.Encourage reflection and help people think while they learn:

Evolving the right reflection strategy goes a long way in ensuring efficient transfer of learning. This could be achieved by encouraging student to systematically learn and monitor their understanding of the learning content.

2.Ensure adequate practice

Practice makes a man perfect. Instruction sessions that provide adequate opportunities to participants to practice and apply the learning are usually successful in facilitating efficient transfer of learning.

Learning transfer is increased when the practice tasks are sequenced randomly. This makes instruction practical because random sequencing of tasks helps expose the learner to various situations that are encountered in real life.

3.Use narration and visuals effectively:

The multimedia learning theory states that the right combination of verbal and visual content prevents cognitive burden.Efficient use of narration that adds instructional value to eLearning

sessions could increase learning transfer. Effective integration of ocular content with narration helps retain knowledge better and apply it appropriately and efficiently.

4.Encourage collaborative learning:

Transfer of learning occurs when the student acquires knowledge and applies it to find solutions to various problems.Social learning helps the students to discuss his problems with his peers and they together try to apply their knowledge.

5.Motivate the learner:

Proper motivation could help effective transfer of learning. Pugh and Bergin (2006) state that motivational factors influence learning transfer. They predicted that the effect of motivational factors is threefold.

First, motivation influences the quality of prior learning that is applied to new contexts. **Second**, it could affect the transfer of knowledge and skills. This assumes particular significance when students have an opportunity to transfer their learning but are not required to.

Third, motivation influences individuals' persistence during the process of transfer.

Effective transfer of learning helps provide efficient solutions to an organization's problems.

We may conclude that securing of maximum transfer depends on the teacher. It is he who can inculcate worthy ideals and attitudes which secure maximum transfer in all situations. It is he who can find out that he wants to teach, and for what goal. Transfer can take place, if the goals of teaching are known, and the appropriate methods are used.

Question :

Let Us Check Our Progress

Mention three roles of the teacher in Transfer of Learning.

Notes :(a) Space is given below for your answer.

(b) Write in your own words.

i. ……

ii. ……

iii. ……

4.3.7 LET US SUM UP

Transfer of learning is one of the most universally applied principles of education. Transfer of learning will be concerned with theories, which focus on internal cognitive events. This view, which has its origin in recent cognitive theory, takes the position that facilitative transfer can be enhanced by increasing the likelihood that relevant prior knowledge will be retrieved in appropriate situations.

Transfer takes place whenever our existing knowledge, abilities and skills affect the learning or performance of new tasks. Once you understand how to go about transferring your knowledge to new contexts, however, you could change ways to apply your prior knowledge to the situations and problems you might face in a new role.

It is a crucial question, how to secure maximum transfer. Teacher must know the factors that determine or affect transfer like that:

(i) Intelligence,

(ii) Positive attitude and

(iii) Meaningfulness of the contents.

4.3.8 ASSIGNMENTS

1.What are the different types of transfer? Briefly describe Far Transfer and Near Transfer with examples.

2.Compare the theory of Identical Elements with the Theory of Generalisation. Your explanation must be supported with one suitable example in each case.

3.How teachers can improve transfer of learning in the classroom situations.

4.Write notes on —

(i) Factor influencing transfer of learning

(ii) Educational implication of Transfer of Learning

(iii) Role of a teacher for Transfer of Learning

4.3.9 SUGGESTED READINGS

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Block – 5
Motivation

Unit - 1
Introduction to Motivation

CONTENT STRUCTURE:

5.1.1 : Introduction

5.1.2 : Objectives

5.1.3 : Concept and Nature of Motivation

5.1.4 : Factors Affecting Motivation in Learning

5.1.5 : Let Us Sum Up

5.1.6 : Suggested Readings

5.1.7 : Assignments

5.1.1 INTRODUCTION

You have already been acquainted with the term 'Motivation' as one of the influencing factors of learning in Block 4, Unit-1. You know that the vital role of motivation in life and learning is indisputable. Success and achievement in life and learning depend very largely on how much we really want to succeed and achieve, what cost in human effort and energy we are willing to bear to reach our goal, and what strong satisfaction we look forward to when we accomplish our desire. As has already been stressed motivation is the vital condition, the most powerful director of all learning. Learning and motivation are equally essential for performance. Learning enables us to acquire new knowledge and skills, and motivation provides the impetus for acquiring such knowledge and skills, and also for showing what we have learned. In general, more motivated people achieve at higher levels.

In this Unit, we shall discuss in details the concept and nature of motivation. You will also learn Different factors, which affect motivation in learning, will also be discussed in this Unit. Different factors, which affect motivation in learning, will also be discussed in this Unit.

5.1.2 OBJECTIVES

After going through this Unit you should be able to :

1. understand the concept of motivation.
2. narrate the nature of motivation.
3. enumerate the factors affecting motivation in learning.

5.1.3 CONCEPT AND NATURE OF MOTIVATION

Concept :

We have studied in the preceding Unit, the theories of learning of three major families like behaviourist, cognitive-field and constructivist theorists. All the approaches are in agreement as regards the consequence of learning process, which is the permanent change in behaviour. The basic question, which we deal with in this Unit, is of 'why' of behaviour. Why an individual does what he does ? What are those factors, which motivate an organism for action ? These are some of the questions, which should be answered by each one of us. The question 'why' brings us to a sound basis for understanding the concept and nature of motivation.

Now let us try to understand the concept of motivation. Motivation is the heart of any type of behaviour and learning process. Adequate motivation not only sets in motion the activity, which results in learning, but also sustains and directs it. It has been stated, "Motivation arouses interest. Interest is the mother of attention and attention is the mother of learning. Thus to secure learning we must first catch the mother ; grandmother and great grand-mother." So motivation is an indispensable condition for learning. It energizes and accelerates the behaviour of learner. Desirable changes in learner's behaviour are only possible when a learner is properly motivated.

Historically, the word 'motivation' has been derived from the Latin word *moveers*, which means to move. Thus we can say that in its literal meanings motivation is the process of arousing movement in the organism. The movement is produced and regulated through the release of energy within the tissues. It is an internal force that accelerates, prompts, compels and energizes a response or behaviour. No learning is possible without motivation. At any given time learners vary in the extent to which they are willing to direct their energies to the attainment of goals, due to difference in motivation.

In general, motivation is of two types :

(i) Extrinsic Motivation which is created by external factors such as rewards, social pressure,praise, good grades, punishments etc. and

(ii) Intrinsic Motivation which is associated with some personal factors such as needs, interests,curiosity, values etc.

Psychologists' Views on Motivation :

Many attempts have been made to define motivation. Some of the important definitions, given by different eminent psychologists are discussed here for a clear understanding of the term 'motivation'.

Swift :"motivation is a dynamic process initiating and directing behaviour, continuous but fluctuating in intensities and aimed at satisfaction of the individual's needs."

T.W. Atkinson :"the term 'motivation' refers to the arousal of tendency to act to produce oneor more effects."

C.W. Good :"motivation is the process of arousing, sustaining and regulating activity."

H.W. Bernard :"motivation is the stimulation of actions towards a particular objective where previously there was little or no attraction to that goal."

A.H. Maslow :"Motivation is constant, never-ending, fluctuating and complex and that it is analmost universal characteristic of particularly every organismic state of affairs."

J.P. Guilford :"A motive is any particular internal factor of condition that tends to initiate andsustain activity."

Motivation is the process that puts the organism into physiological and psychological action by which the organism becomes able to fulfill its needs and desires. Again it is the level of desire of an organism to behave in a certain manner at a certain time and in a certain situation and obviously motivation is one of the most important conditions, which aids learning.

F.G. McDonald :"Motivation is an energy change within the person characterized by effective arousal and anticipatory goal reactions."

Nature :

If we analyse the above-stated definitions and interpretations, we can form some idea about the nature of motivation. Thus motivation has the following nature and characteristics :

(i) Motivation is arousing and sustaining interest in learning.

(ii) Motivation is directing behaviour.

(iii) Motivation initiates and energises activity in learning.

(iv) Motivation is personal, internal and invisible because these are expressions of a person's needs.

(v) Motivation differs from learner to learner because every learner has his own set of needs at a particular point of time.

(vi) Motivation is a continuous process because human needs are unlimited.

(vii) Motivation leads to self-actualization in learning.

(viii) Motivation arouses, sustains and directs behaviour.

(ix) Motivation stimulates learning activity.

(x) Motivation is the arousal of tendency to act and produce result.

(xi) Motivation is directed to a selective goal.

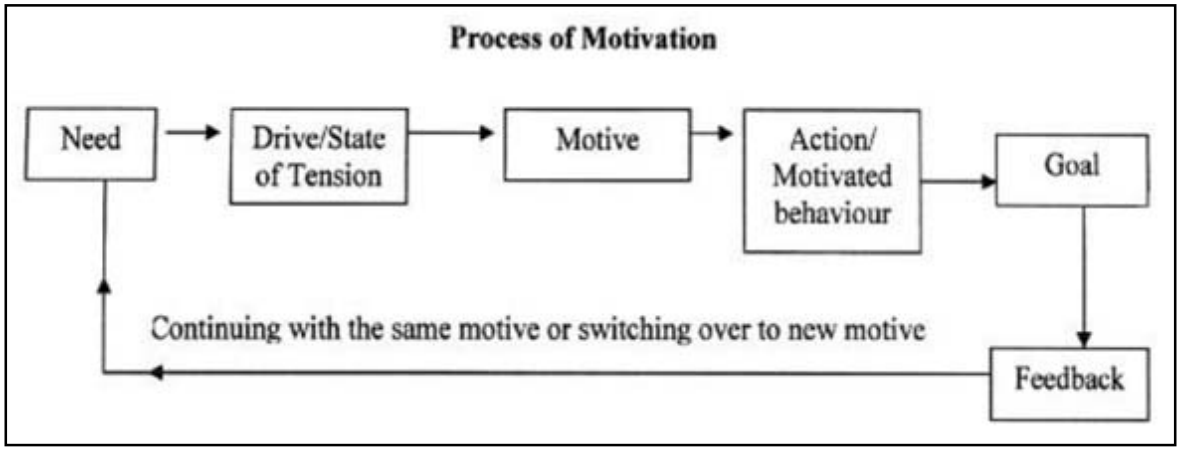
(xii) Motivation provides energy and accelerates the behaviour of the learner.

(xiii) Motivation releases the tension and helps in satisfying the needs of the learner.

(xiv) Motivation is the internal condition or factor of learning.

(xv) One motive may result in different behaviours ; on the other hand, the same behaviour may result from different motives.

From these characteristics different questions arise : what exactly is responsible for the motivation of an individual and what are the real activating forces that pull and push an individual to move or act for achieving a specific goal ? Psychologists have tried to explain the process and mechanism of motivation in a number a ways and they have tried to provide to answer by identifying these activating forces as *needs*, *drives* and *motives.*



Discussion :

From the above-stated analysis we may define motivation as an internal state that arouses us to action, pushes us in particular directions and keeps us engaged in certain activities.

Question :

Check Your Progress 5

(i). How does extrinsic motivation differ from intrinsic motivation?

(ii) Mention at least four chief characteristics of motivation.

(iii). What are the elements responsible for the process of motivation?

5.1.4 FACTORS AFFECTING MOTIVATION IN LEARNING

In the preceding part of this Unit, we have briefly surveyed the concept of motivation and its major theories. Now we shall deal with some of the influencing factors that affect motivation in learning, which the teachers can apply in the classroom teaching-learning situation for fruitful learning. A learner may be motivated for an action in a particular situation and the other learner may not be motivated in that situation and even the same learner may not be motivated under the same situation on some different occasions. So a number of variables operate in the process of motivation, which cause variation in the individuals. The socio-economic condition, previous experience, age and social climate in the classroom affect the process of motivation.

Let us now discuss some of the important factors and techniques of motivating the learner.

1. **Pleasure and Pain** — The oldest theory of behaviour holds that pleasant experiences, which give satisfaction, are sought and painful experiences are avoided by the organism. The teacher must provide pleasant and satisfying experiences to his students. Such type of experiences will motivate students for further learning.
2. **Rewards and Punishment** — The teacher should occasionally administer rewards in his classroom situation because rewards create interest in the students. But the teacher must see that rewards for learning should be so engineered that after serving their introducing role, they should lead learners to independent learning beyond the classroom situation. Punishment should be used very sparingly because it creates behaviour troubles.
3. **Aspiration Level** — The teacher should design the level of difficulty of classroom task keeping into consideration the level of aspiration of the students. Classroom goals should be attainable and the students should feel that they are able to achieve them. Again schoolwork must be sufficiently varied so that every pupil may succeed at his level.
4. **Praise and Blame** — Praise is more effective than blame for motivating children. It is the duty of parents and teachers alike to motivate the child to learn by praising and appreciating his right motives and achievements. But they should be cautious while using praise. Blame should be sparingly used because it creates personality maladjustment.
5. **Competition and Cooperation** — Competitive and cooperative attitudes are advantageous both inside the classroom and outside it. These are the powerful sources of motivation. Competition and cooperation both can be used in the classroom learning for gaining high scores.

6. **Curiosity and Interest** — These are the most interesting factors of motivation. Children arecurious by nature and want to know everything they come across. Their interests sometimes disgust the elders. But the teachers should have patience and describe the things they want to know.

7. **Knowledge of Result/Feedback** — It is an important source of motivation. When the student knows about his result or success ; he is motivated to learn more and better, because his interest is heightened. It also helps him in correcting his mistakes. So progress of the child should be intimated to him from time to time.

8. **Incentives** — Everyone strives harder toward a goal when an incentive accompanies thestriving. Often the incentive may be simply to reach the goal, at other times, an actual reward may be associated with the goal.

9. **Challenge** — Challenge is essential to activate the need to achieve.

10. **Anxiety** — No doubt, some amount of mild anxiety accelerates the problem solving effort ofthe student but too much anxiety and tension disorganizes the cognitive process and hinders the performance of the learners. Teacher should create mild tension in his students to motivate them.

Teachers and parents daily face a number of behaviour problems of their children in motivating them to learn. There are a variety of factors affecting motivation in learning, a thorough knowledge of which will prove very helpful for teachers and parents in understanding and guilding their children's learning.

11. **Setting of Goal** — Motivation is a goal-oriented behaviour that leads to drive-reduction inthe organism. We can mention that the goal, which the student sets for himself, plays an important role because goal setting is an important component of human motivation.

12. **Commitments** — Much like setting goals, this motivational technique simply involves having students commit themselves to certain achievements.

13. **Novelty** — Every novel thing creates interest in the individual. According to*Travers*, one ofthe essential ingredients involved in energizing pupils in the learning or in classroom situation is the provision of materials that permit them to move into ever-new fields of exploration. The subject matter should be presented in novel ways so that curiosity and interest of students may be maintained.

14. **Real Life and Symbolic Models** — It is a fact that most of the learning in human beings is acquired through the process of observation and imitation. The teacher can influence the behaviour of his students by his attitude and ideal living, written or verbal presentation and by use of audio-visual techniques.

15. **Self-importance** — If the student is aware of his own self he is motivated to learn better inorder to maintain the standard of his personality.

Discussion

The above stated analysis shows that there are so many factors, which play important roles in motivating learners. But it depends a lot on the teacher as to how he should manipulate the opportunity and use the factors to motive his students in learning.

Question :

Let Us Check Our Progress

(i) Mention the place of rewards in education ?

(ii) What is the role of 'challenge' in motivation ?

5.1.5 LET US SUM UP

In this Unit, we have discussed in brief the concept, nature of motivation, and also discussed various important factors affecting motivation in learning. Why we behave and how we behave in a particular fashion at a particular moment can be explained in terms of motivation, which prompts, compels and energizes us to engage in a particular behaviour. The activating forces for motivation may be termed as needs, drives or motives.

Motivation is the heart of any type of behaviour and learning process. Adequate motivation not only sets in motion the activity, which results in learning, but also sustains and directs it.

It is the process that puts the organism into physiological and psychological action by which the organism becomes able to fulfill its needs and desires.

Again, it is the level of desire of an organism to behave in a certain manner at a certain time and in a certain situation and obviously motivation is one of the most important conditions, which aids learning. Motivation differs from learner to learner because every learner has his own set of needs at a particular point of time.

In the last part of this Unit, some of the important factors, which influence the process of motivation in student learning as well as classroom teaching have been stated and discussed in detail.

5.1.6 ASSIGNMENT

1. What is Motivation? Explain the characteristics of Motivation.

2. Discuss the affecting factors of Motivation.

5.1.7 SUGGESTED READINGS

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Block – 5
Motivation

Unit - 2
Motivation: Theories and their Educational Significances

CONTENT STRUCTURE:

5.2.1 : Introduction

5.2.2 : Objectives

5.2.3 : Theories of Motivation and their Educational Implications

5.2.3.1: Theory of Hierarchy of Needs

5.2.3.2: Theory of Achievement Motivation

5.2.3.3: Attribution Theory of Motivation

5.2.4 : Let Us Sum Up

5.2.5 : Assignments

5.2.6 : Suggested Readings

5.2.1 INTRODUCTION

In this Unit, we shall discuss various theories of motivation and while dealing with various theories, you will learn the main characteristics, detailed description and findings of each theory that have emerged in the recent years. You will also study the contribution and applicability of different theories of motivation in teaching-learning situation.

There are many competing theories, which attempt to explain the nature of motivation. These theories are all, at least, partially true, and all help to explain the behavior of certain people at certain times. However, the search for a generalised theory of motivation at work appears a vain quest. Motivation varies over time and depending up on the circumstances

5.2.2 OBJECTIVES

After coAfter going through this Unit you should be able to :

1. illustrate the chief characteristics/principles and findings of various theories of motivation.
2. discuss critically the contributions and educational implications of different theories of motivation.

5.2.3 THEORIES OF MOTIVATION AND THEIR EDUCATIONAL IMPLICATIONS

Motivation has been a central construct in both educational and psychological research for the past sixty years and plays a significant role in several theories of human development and learning. What motivates human behaviour is not a simple question. Tremendous research has been conducted on motivation in the last six decades and a number of theories have been given to explain motivation. We shall now discuss here some of the important theories of motivation and their educational implications:

5.2.3.1: THEORY OF HIERARCHY OF NEEDS

Abraham Maslow (1908-1970) is considered as the father of Humanistic Psychology. One of Maslow's most famous concepts is that of self-actualization, which he means that we use our abilities to the limit of our potentialities. If we can convince students that they should — and can — fulfill their promise, they are then on the path to self-actualization. *Self-actualization* is a growth concept ; student move toward this goal as they satisfy their basic needs. It is movement toward physical and psychological health. Growth toward self-actualization requires the satisfaction of a hierarchy of needs. Maslow's motivation theory states that man's behaviour is controlled by both internal and external factors. In addition he emphasizes that human beings have the unique ability to make choices and exercise their free will.

Maslow collected data for his theories by studying outstanding individuals. His studies led him to believe that people have certain needs, which are unchanging and genetic in origin. These

needs are the same in all cultures and are both physiological. Maslow described these needs as being hierarchical in nature, meaning that some needs are more basic or more powerful than others and as these needs are satisfied, other higher needs emerge.

***Maslow's Needs Hierarchy* :**

Here is Maslow's hierarchy, which, of course, reads from bottom to top :

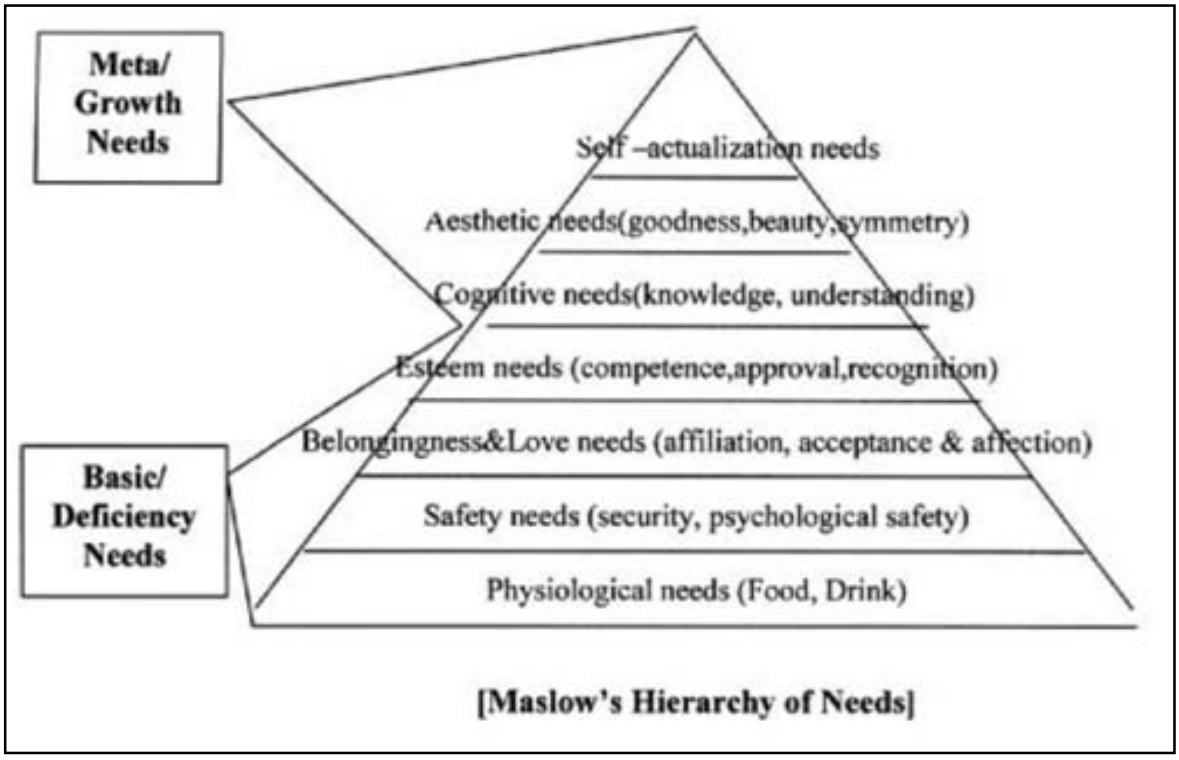
A. Basic/ Deficit Needs

- *Physiological* : need for sleep and rest, food, drink, shelter, sex and oxygen
- *Safety* : need to be safe from harm, for a predictable world with consistency, fairness, routine,for sense of stability and security.
- *Love and Belonging* : need for love and affectionate relationships, belonging to a group,and caring.
- *Esteem* : two components — (i)***self-respect :*** achievement, mastery etc. and (ii) ***respect of*** reputation, appreciation, status, prestige etc. desire for confidence, competence, adequacy, ***others* :**desire for acceptance, recognition,

B. Meta/Growth Needs

- *Understanding and Knowledge* (cognitive) : need to satisfy curiosity, explore, discover, findsolutions, look for relationships and meaning, and seek intellectual challenges.
- *Aesthetics* : need for beauty, goodness, symmetry in surroundings.
- *Self-actualization* : need for growth, development and utilization of potential, becoming allthat one can be, self-fulfillment

Maslow classified the first four as deficiency needs ; they represent physical and psychological survival, and they depend for satisfaction on external circumstances. Only when those needs have been met to the other three, which Maslow designated as the growth needs and which reflect intellectual development, have a chance to sprout from within. The following diagram shows Maslow's hierarchy of needs, represented as a pyramid with the more primitive needs at the bottom.



[Maslow's Hierarchy of Needs]

Characteristics of Self-actualizers

1. They demonstrate an efficient perception of reality and acceptance.
2. They develop deep interpersonal relations with others and identify themselves with mankind.
3. They show high degree of spontaneity and simplicity.
4. They process problem-centred orientation.
5. They believe in privacy and are somewhat detached.
6. They tend to be autonomous and independent of their environment.
7. They appreciate goodness and distinguish means and ends.
8. They show mysticism at times.
9. They are creative, adaptable, non-conformist and have a sense of humour.

For self-actualization, it is necessary that a person should not worry about his survival needs. He should feel satisfied in his family as well social relations and in his job. Maslow's theory emphasizes that motivation to work is rooted in the fulfillment of various categories of needs, which range from physiological to self-actualization.

Application of Maslow's Theory of Education

This theory has great impact on educational structure. In order to maximize on the

effectiveness of school-wide and individual classroom teaching programmes, administrators and teachers must consider student needs and their hierarchial order. This must be a top priority in the development of these programmes so that students have the capability of reaching their highest levels of potential. For instance, there are many children who come to school without a proper breakfast cannot concentrate on learning ; school systems must meet this need by providing breakfast programmes so that these children will be more likely to learn effectively.

Teacher's Role

It is the responsibility of teachers to know what their students' needs are, to understand the concept of Maslow's hierarchy, and to develop their teaching programmes accordingly. Ray (1992), stated, "In the educational scene the teacher has the primary responsibility to develop, encourage, enhance, and maintain motivation in the student." In his later years, Maslow realized that an environmental precondition of stimulation, or challenge, was needed to motivate individuals. Therefore, it is also the teachers' responsibility to include a means of stimulation in their teaching programmes to catch students' interest (Global, 1972).

Discussion

Examining Maslow's hierarchy, we can see how a deficit in any one-need category will affect student performance. Fearful students (for whatever reason) may find it difficult to concentrate on their studies. Similarly those students who feel rejected and isolated may refuge to participate fully in their class activities. Students and all of us need to feel that we are worthy of respect, both from others and ourselves ; a respect that is based on actual achievement.

5.2.4.2 THEORY OF ACHIEVEMENT MOTIVATION

The need to achieve is as basic and natural as the other biological or socio-psychological needs. In a competitive society or set-up the desire to excel over others or achieve a higher level than one's peers is intensified which in turn may lead to stronger drive or motive to achieve something or everything that is essential to beat the others in the race and consequently experience a sense of pride and pleasure in the achievement. This type of motivation produced by such desire for achievement is called the achievement motivation. Achievement is more important than material or financial reward.

David C. McClelland's (1917-98) Need for Achievement

Harvard professor David C. McClelland (1961, 71) extensively studied achievement motivation and concluded that successful individuals have a significantly stronger drive or

motivation to succeed than do average or below average individuals. McClelland defines a high need for achievement (denoted as **n'Ach**) as a self-motivation to high levels of accomplishment. High achievers are "turned on" by the accomplishment of a task, the attainment of a skill, the meeting of a challenge, or the invention of something new. Such goals matter more to them than secondary, external results such as money, power, or prestige. In their book, *The Achievement Motive*, McClelland and his co-workers [Atkinson, Clark, and Lowell (1976)] present the results of a study undertaken to discover why people differ in their levels of motivation to achieve.

Characteristics of Achievement-Motivated People according to McClelland

- **Risk-taking Behaviour and Achievement** - McClelland's (1961, 1965) research showed thathigh achievers set challenging but realistic goals for themselves. They assume personal responsibility for solving problem, calculate risks, set moderate objectives, and want to receive frequent feedback on results. Although they are self-directed, goal-oriented and self-motivated, they like to receive feedback on how well they are doing, which serves as encouragement to them to think of ways to do their jobs even better.

- **Hope of Success ; Fear or Failure** - Success in life is for those who hope and try, and another motive, i.e. *Fear of Failure* is usually mixed with *Hope of Success.*

  Achievement-motivated persons choose a risk that is a compromise between the very easy and very difficult. Such a task of moderate difficulty offers the best chance of achievement. *Atkinson,* an associate of McClelland has developed a mathematical model for nAch thatrelates a person's expected value of succeeding or failing at a task to the person's level of achievement-motivation and fear of failure. The resultant **nAch=Ts – TAF** [Ts=approach tendency of subject and TAF=avoiding failure]. Each is calculated with reference to motive to approach or avoid failure, subject's probability of success or failure and the incentive value of success or failure to the subject.

- **Level of Aspiration** - Level of aspiration is closely related to nAch and hope of success-fear of failure experience. Every individual has goals and he aspires to achieve this goal. In the course of achieving this goal he has some *Expectations.* The standard he wants to achieve in any task is described as his *Level of Aspiration,* which is closely related to his Self-Esteem. People tend to raise their goals after success and lower after failure.

Realistic level of Aspiration - The ideal situation is for a student to maintain a*realistic level of aspiration.* The goal-setting parallels what the high jumper does when he sets the bar between theposts. Success and failure experiences come in the intermediate range between the point, at which success is highly probable, but failure is possible, and that at which failure is highly probable, but success possible. Level of aspiration should be high enough to be challenging, low enough to be attainable.

- **Independence at Earlier Age** - Although achievement motivation generally seems to be inherent or developed at an early age, McClelland (1965), in his research discovered that people can learn to become more achievement oriented. Once the motivation is acquired or strengthened, the person can maintain it indefinitely.
- **Non-traditional** - People who are high in n'Ach also like to solve new problems ; they tend not to be traditionalists.

McClelland said that most people possess and exhibit a combination of these characteristics. He asserted via his experiments that while most people do not possess a strong achievement-based motivation, those who do, display a consistent behaviour in setting goals. The desire to purse the goal, when the person is motivated to seek the achievement of something lofty, is relentless and intensive.

Measuring Achievement Motivation

In their achievement motivation research, McClelland and his associates (Atkinson, Clark and Lowell) used the test materrials designed by Murray and Morgan (1935), both of whom prepared a *Projective Test of Personality* known as *Thematic Apperception Test* (TAT). It consists of pictures depicting different situations. One has to study each picture and write a complete story. The pictures are generally accepted as tapping certain areas of life, such as family relationships, motivational dynamisms, inner fantasies, desires for achievement and conflicts, social relationships etc. it is assumed that the Subject identifies himself with one of the characters in the picture who will be usually the hero of the story. The *Needs* that lie beneath motivational characteristics are probed by analysing stories and conclusions drawn petaining to achievement-motivation.

McClelland contrasted achievement-motivated people with gamblers, and dispelled a common pre-conception that nAch (achievement-motivated) people are big risk takers. On the contrary-typically, achievement-motivated individuals set goals, which they can influence with their effort and ability, and as such the goal is considered to be achievable or attainable.

An achievement-motivated individual is likely to exhibit *self-assurance, positive outlook,pragmatism, hope* and *faith* in a bright future while an individual lacking in achievement-motivation would exhibit all-round *pessimism, distrust* and *despair*.

Development of Achievement-Motives

- **Role of Home** - Needs for achievement develop in early childhood. It depends upon the discipline of the home. Parental expectation and guidance to the child develop need for high achievement in life.
- **Role of Society** - The society and its social philosophy is also an important variable indeveloping achievement motive.
- **Role of Teachers** - After entering into schools, the teacher can play a very crucial role inthe development of achievement motive in the child by the following methods :

    1. The teacher should emphasize the importance of achievement motive in life by means of telling stories of great personalities and their achievements from all walks of life. Students may be motivated to follow the footsteps of great persons.
    2. The teacher's encouraging and friendly attitude and his enthusiasm in work will create the necessary environment for achievement motive in children.
    3. The teacher will guide the students in developing realistic achievement motives.
    4. Attempts should be made to convince the students that new motives will improve their self-image and is an improvement upon the prevailing ones.
    5. The teacher should develop habits of self-study among students.
    6. The teacher should encourage the students to evaluate their own achievement from time to time and to keep record of their progress towards their goal.
    7. The teacher should develop conducive social environment in the class so that every student should think that he is wanted and has a role to play.

Discussion

When children are urged to perform as best as they could for the sheer joy of performance in any worthwhile area of human endeavour they are amazed at their own potentialities ! Parents

and teachers, by setting examples from their own life-style, could assist children to strive for excellence in every activity.

Question :

Let Us Check Our Progress

(i) Cite an example of unrealistic level of motivation in case of a seventh grade pupil.

(ii) How can you motivate a learner for studying learning materials? Explain in brief.

5.2.4.3 : ATTRIBUTION THEORY OF MOTIVATION

Attribution theory (Weiner, 1980, 1992, 2000) is probably the most influential contemporary theory with implications for academic motivation. It incorporates behaviour modification in the sense that it emphasizes the idea that learners are strongly motivated by the pleasant outcome of being able to feel good about themselves. It incorporates cognitive theory and self-efficacy theory in the sense that it emphasizes that learners' current self-perceptions will strongly influence the ways in which they will interpret the success of their current efforts and hence their future tendency to perform these same behaviours. **Attribution theory of motivation** describes *how the individuals' explanations, justifications and excuses about self or others influence motivation*.

***Weiner's Scheme/Idea* :**

Bernard Weiner (1979, 80, 92, 94, 2000) is one of the main educational psychologists responsible for relating attribution theory to school learning. To understand clearly Weiner's ideas about *attributiontheory,* we can use the following example :

Ram got a C- on a test. He attributes his mediocre grade to the test's being —**too tough**. *Lakshman* also got a C-. But he had not studied much before the test and figures he was —

lucky.

*Jadu*received an A. He feels — his **ability** earned it.

Madhu also get an A. He credits his **efforts**for achieving high scores for several days before the test.

They may attribute their successes and failures to ability, effort, luck, task difficulty, mood, knowledge, help, interest, clarity of instruction, interference of others, unfair policies and so on.

According to **Weiner**, most of the attributed causes for successes or failures can be categorized in terms of three dimensions :

1. **Locus** (location of the cause — internal or external to the person),
2. **Stability** (whether the cause stays the same or can change), and
3. **Controllability** (whether the person can or cannot control the cause).

Weiner (1990) believes that there are **four factors** related to attribution theory that influence motivation in education :*ability task difficulty effort*, and *luck*.

- **Ability** is a relatively ***internal*** and ***stable*** factor over which the learner *does not exercisemuch direct control*.
- **Task difficulty** is an ***external*** and ***stable*** factor that is *largely beyond the learner's control.*
- **Effort** is an ***internal*** and ***unstable*** factor over which the learner *can exercise a great deal of control.*
- **Luck** is an ***external*** and ***unstable*** factor over which the learner exercises *very little control.*

		Locus	
		Internal	*External*
Stability	*Stable*	Ability	Task difficulty
	Unstable	Effort	Luck

[Weiner's Scheme for Classifying Attributions]

Weiner suggests that these **three dimensions** have important implications for motivation because they affect *expectancy* and *value*. The ***stability*** dimension, for example, seems to be

closely related to expectations about the future. If students attribute their failure to stable factors such as the difficulty of the subject, they will expect to fail in that subject in the future. But if they attribute the outcome to unstable factors such as luck or effort, they can hope for better outcomes next time.

The ***internal/external locus*** seems to be closely related to feelings of self-esteem. If success or failure is attributed to internal factors success will lead to pride and increased motivation, whereas failure will diminish self-esteem.

The ***controllability*** dimension is related to emotions such as anger, pity, gratitude, or shame. If we feel responsible for our failures (ability/effort), we may feel guilt ; if we feel responsible for successes, we may feel proud. Failing at a task, which we cannot control can lead to shame or anger.

Attribution theory is the description of how individuals' explanations, justifications and excuses about self or others influence their motivation and behaviour. The basic principle of attribution theory as it applies to motivation is that a person's own perceptions or attributions for success or failure determine the amount of effort the person will expend on that activity in future.

When failure is attributed to lack of ability (*uncontrollable cause*), the sequence of motivation is :

Failure ⟶ Lack of Ability ⟶ Uncontrollable ⟶ Not Responsible Shame/ Embarrassment ⟶ Performance Declines

Withdraw

When failure is attributed to lack of effort (a controllable cause), the sequence of motivation is :

Failure ⟶ Lack of Effort ⟶ Controllable ⟶ Responsible ⟶ Guilt ⟶ Engagement ⟶ Performance Improves

An important assumption of attribution theory is that people will interpret their successes or failures to factors that will enable them to feel as good as possible about themselves. In general, this means that when learners succeed at an academic task, they are likely to want to attribute this success to their own efforts or abilities ; but when they fail, they will want to attribute their failure to factors over which they have no control, such as bad teaching or bad luck.

Attribution in the Classroom

The following guidelines can be derived from the preceding statement :

1. If we want students to persist at academic tasks, we should help the students establish a sincere belief that they are competent and that occasional imperfections or failures are

the result of some other factor (such as bad luck of sufficient effort) that need not be present on future occasions. (That is, *ability attributions for success* are likely to be beneficial, with the exception cited in the next guideline.)

2. It is *not* beneficial for students to attribute their successes *entirely* to ability. If they think they already have all the ability they need, they may feel that additional effort is superfluous.

   The ideal attribution for success is, "I succeeded because I am a competent person and worked hard."

3. It is important to *define effort correctly* and for the learners to *internalize* an accurate concept of effort. In practical terms effort is most usefully defined as *devoting effective academic learning time to the task*. Just trying harder or spending more time doing ineffective activities does not constitute effort. Therefore, it is extremely important that when students perceive themselves as unsuccessful, teachers help them develop the conviction that they can still succeed if they give it their best shot.

4. It is extremely hazardous to motivational health for students to fail repeatedly after making a serious effort at academic tasks. When this happens, they will either (a) stop believing they are competent, or (b) stop attributing their failure to lack of effort. It is important, therefore, to arrange tasks so that students who work hard are able to preceive themselves as successful believe that they have an internal, stable characteristic called lazinees, over which they have no control. This will *reduce* motivation.

5. Excessively competitive grading and evaluation systems are likely to impair the learning of many students. Competition will encourage students to persist only to the extent that they believe additional effort will enable them to succeed within the competitive atmosphere. In many instances, success in competition is completely beyond the learner's control — no matter how hard a learner works, another more competent and equally energetic competitor is likely to win.

6. It is useful to evaluate students at least partly (but not exclusively) on the basis of their effort. Ideally, course assignments should be arranged so that diligent work actually leads to academic success, and the teacher's evaluation should help students see this connection.

7. In general, it is best for students to believe that it is their own behaviour rather than external circumstances that leads to success or failure. Researchers refer to this as having an ***internallocus of control***. While it is good for students to have a realistic understanding of what'shappening around them, research shows that the most successful students have a tendency to overestimate the degree to which their own behaviour leads to success or failure.

8. When students have a conviction that they lack ability, it is necessary to take steps to overcome this conviction. For example, when they do well, they are likely to have a sincere conviction that they were "just lucky." It is difficult to alter this conviction. Changing this conviction is tantamount to altering the learner's self-concept, and this cannot be accomplished in a short time. There are many approaches available to teachers, including the following :

- Find areas in which the learner perceives himself as successful, and show connections between that area and the topic currently under consideration.
- Use guidelines to enhance the learner's self-concept.
- Focus heavily on effort as the factor critical to success.

9. While the teacher's long-range goal may be to enhance the child's self-concept, the immediate goal is to promote motivation with regard to the subject matter at hand.

Discussion

The preceding **guidelines** should enable **teachers** to use attribution theory to motivate students more effectively. In addition, it is possible simply to reinforce *effort attributions* (Schunk, 1982, 1983) and to conduct *training programmes* designed to promote attributions that are likely to lead to higher levels of *motivation and productivity* (McCombs, 1984 ; Zimmerman, 1989).

Question :

Let Us Check Our Progress

(i) What are the chief characteristics of 'high achievers' ?

(ii) Name the four factors related to attribution theory that influence motivation in education.

5.2.4 LET US SUM UP

A number of viewpoints and theories have been put forward for explaining human motivation. Psychologists with a humanistic approach like *Maslow* put forward a hierarchical structure of needs for explaining human motivation. The gratification of lower order needs motivates an individual to strive for the higher order needs. On the top of the hierarchical structure lies the need for self-actualization.

Another important name in the field of cognitive behavioural science, David *McClelland*, concluded in his theory of achievement motivation that the person who has a high need for achievement considers problems and obstacles as challenges to be met, and according to his theory, human beings differ from one another in the strength of achievement motive which develops in early childhood.

According to the attribution theory of *Bernard Weiner*, most of the attributed causes for success or failures can be characterized in terms of three dimensions:*locus* (location of the cause — internal or external to the person), *stability* (whether the cause stays the same or can change), and *responsibility* (whether the person can control the cause).

The greatest motivational problems arise when students attribute failures to stable, uncontrollable cause. These students may seem resigned to failure, depressed, helpless — what we generally call 'unmotivated.' All the theories of motivation have been described in brief to understand their main concepts, basic features, and educational implications.

5.2.5 ASSIGNMENTS

1. 'Motivation is the heart of the learning process' — explain.
2. Explain the meanings of 'goal', 'motive', 'behaviour' and 'feedback' by drawing a 'motivational cycle'.
3. Can needs be hierarchically arranged ? Described Maslow's contribution in education.
4. What is meant by 'achievement motivation' ? How is it measured ?
5. Sketch the importance of teacher-child relationship in the development of achievement motivation.
6. Relate 'level of aspiration' and motivation. How is it related to one's 'self concept' ?

7. What are the main features of attribution theory of motivation ? Explain its application to education.
8. How would you use 'competition' and 'cooperation' as the motivational techniques ?
9. How can a teacher motivate children in classroom teaching ? Illustrate your answer with examples.

5.2.6 SUGGESTED READINGS

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Block – 6
Remedial Education

Unit - 1
Remedial Education

See me beautiful, look for the best in me
it's what I really am, and all I want to be
it may take some time
it may be hard to find
but see me beautiful
See me beautiful, each and every day
could you take a chance? Could you find a way?
to see me shining through
in everything I do
and see me beautiful

Red Grammer
(from Teaching Peace)

CONTENT STRUCTURE:

6.1.1 : Introduction

6.1.2 : Objectives

6.1.3 : Specific Problems of learners

6.1.4 : Types of specific learning problems

6.1.5 : Meaning of Remedial Education

6.1.6 : Learning Disability and Remedial Education

6.1.7 : Needs and objectives of Remedial Education

6.1.8 : Nature of Educational Diagnosis

6.1.9 : Techniques of Educational Diagnosis

6.1.10 : Specific Backwardness

6.1.10.1: Reading Disability, Causes and Remedial Measures

6.1.10.2: Writing Disability, Causes and Remedial Measures

6.1.10.3: Arithmetic Disability, Causes and Remedial Measures

6.1.11 : Let Us Sum Up

6.1.12 : Assignments

6.1.13 : Suggested Readings

6.1.1 INTRODUCTION

School failure is an enormous problem for parents, teachers, school authorities and the community as a whole. It was there, it is here and it is everywhere. Parent fails to understand why the child is not doing well in the school. They try to find out what has gone wrong. Instead they try to engage some extra helping hand at home, although who can afford. Their search for the cause is restricted by their knowledge. Parent, teachers and schools try to pass on the buck to each other. Nobody is trained enough to find out a solution. The poor child is stunned and speechless. He does not understand why parent have become so much anxious and frustrated. The situation is totally out of control of these tiny tots. At this stage, action taken by the family is going to decide the educational outcome for his life. Parents try to run for the help in panic. The teacher says “He is with you for 18 hours. I have 100 students in my class, so … You should pay more attention to his studies. Don’t worry, he will pick up with time.” But who is to blame? Who is the culprit? In fact nobody is culprit. Failure is a result of many factors working together. To find an instant solution, parent change medium of instruction, change the school, change the place of residence, additional tuitions, additional study hours with ‘sitting on his head’ attitude; send him to a ‘good boarding school’ as he is getting spoilt because of ‘more affectionate parent’. These are all common but extreme steps. This is not the solution. This in fact may prove to be counterproductive. It is necessary for all concerned to understand that, there can’t be any “instant impulsive solution”. This problem is called as scholastic backwardness. You, as a mature student,

have followed that all of your classmates, at different stages of education, were not equal in respect to learning and classroom activities. This is also the perception of experienced teachers of all countries and all subjects.

Most of the teachers and parents will say that all children are not same. But sometimes some teachers and parents considers otherwise.

However teachers may differentiate learners by using the results of the following :

- The content the students learns
- The assessment tools being used
- The performance task selected and
- The instruction strategy used

It should be considered that as in clothing "one size does not fit all," so in classroom one way is not the only way, because some learners may have some specific problems in learning.

6.1.2 OBJECTIVES

After going through the Unit, you will be able to :

- Explain specific problems of learners and their types
- Suggest different definitions of 'Remedial Education'
- Compare 'Learning Disability' with 'Remedial Education'
- State Needs and objectives of Remedial Education
- Analyse the Nature of Educational Diagnosis
- Derive Techniques of Educational Diagnosis
- Illustrate Specific Backwardness with special emphasis on Reading, Writing, Arithmetic Disabilities

6.1.3 SPECIFIC PROBLEMS OF LEARNERS

We all know that the learners of any particular class level are almost the same age yet they are different in height, weight, colour, test etc. All the parents do not buy the same size of cloths

for all the learners. But when the question of classroom teaching arises, teachers prefer to give them same type of instructions for all the learners though they surely know that these types of instructions are boring some and losing some others because these types of learners are not ready for these types of instructions for various reasons. The teachers consider that the learners will adjust the learning instead of learning should be adjusted to the learners.

Our real quest is the success of the learners in their real lives. For this reason our concerns are for those learners who are doing badly in their specific areas of learning, e.g., reading, writing and mathematics. These learners may have IQs ranging from high to normal, yet they are slow performers in the particular fields. Their low achievements in these particular areas are due to several reasons. Why these problems are occurring? Why are all learners not able to learn and perform equally well in the same classroom environment?

Some of the factors may be outlined as follows:

- Lower level of intellectual functioning and developmental delay
- Seeing problem
- Hearing and speech problem
- Damage to limbs
- Problems with psychologi8cal process like perception, attention, memory, problem of motor-visual coordination resulting in the specific learning difficulties in reading, writing, spelling and mathematics.

In this unit our concern is for learning difficulties in reading, writing and mathematics only.

But these specific problems may occur due to home and related environment of the learners. Some of these may mentioned here for your convenience:

- Lack of parental love, affection and care
- Lack of acceptance by the other family members
- Lack of opportunities for learning (eg. First generation learners)
- Wrong way of child rearing practices etc.

There may be other factors too. These are mainly scho0ol related issues:

- Lack of teachers' acceptance of the students and low expectations regarding learning performance of the students

- Unfavourable classroom climate, socio-emotional environment and low interaction of the teachers
- Lack of acceptance by the peer group
- Lack of quality teaching method to satisfy the individual needs and problems
- Lack of adjustment and individual facilities in the classroom.

The learning problems may be due to one or more of the above factors stated above. However many of the problems of such children may stems from interplay of different factors. But teachers and parents may help learners to overcome many of the problems in varying degrees.

It has been estimated that at least 4% learners have some learning problems in different ways.

But if you consider the specially challenged children this figure may raise to approximately 20%.

A certain range or level of achievement are considered as normal and below this level are taken as impairment or disability. In these below average cases remedial education is necessary.

We have already told you that these learners are mostly physically challenged in terms of physical attributes and endowments. But every person with physical, mental or emotional limitations is capable of doing jobs differently with in a range. A certain range or level are considered as normal

and below this level is taken as impairment or disability. In these below average cases remedial education is necessary.

6.1.4 TYPES OF SPECIFIC LEARNING PROBLEMS

Children with specific learning problems generally get lower grades in classroom achievement. They are known underachiever. They may have normal IQs or above average IQs. These learners are categorized in to six types (Otto et. al. 1973). These are as follows :

(i) Underachiever with average capacity

(ii) Slow learners

(iii) Bright Underachievers

(iv) Reluctant Learners

Underachiever learners may have normal IQs or above average IQs. These learners may be categorized in to six types (Otto et. al.)

(v) Children with Limited Experiential Background and

(vi) Children with limited Language Development.

Now let us consider the above types in a very nutshell, because the children fall under any of the categories stated above are required remedial education.

(i) Underachiever with average capacity : On the basis of their capacity to learn, children withaverage intelligence are expected to achieve average grade according to their chronological ages and those who do not achieve this grade level are underachievers. In many cases these problems become complex and complicated, because in most of the cases failure leads to frustration and frustration develops emotional problems. This will create learning problems and thus it leads to further failure. Thus these types of learners need special attention and remedial education.

(ii) Slow learners : Learners who have IQ's between 80 and 90 are generally considered as slow learners. But sometimes learners with IQ's between 90 and 110 also scores like the learners of IQ's 80 and 90. This type of learners also requires special attention in the classroom.

(iii) Bright Underachievers : Learners whose IQ's are high but obtains only average grade levelare also underachievers, because they should obtain high grades in consistent with their IQ's. The teachers generally ignore the problems of this type of learners for different reasons. But they also require special attention by the teachers in the classroom.

(iv) Reluctant Learners : These learners are quite able to respond to other tests. But when comes to school achievement they scores below the test score obtained previously. These types of learners commonly lacking motivation. So they also need special teaching to develop their motivation.

(v) Children with Limited Experiential Background : Sometimes children come from homes where common and minimum cultural environments are non - existent. For this reason they can't compromise the classroom environment. For example, many of the first generation learners come from such type of families. So they need more care and attention and special type of education in the regular classroom than others.

(vi) Children with limited Language Development : Due to different reasons, family environmentor others, language development level of some learners remains below their

level of chronological age. Naturally its effects on their school grades especially on subjects, which require proficiency in language. They also need special attention in and outside the classrooms.

But in general 'Learning Disabilities' (LD) are categorized either by the types of disabilities in 'Information Processing' or by the specific disabilities caused by 'processing deficiencies' in the following way :

I. Information Processing Deficiencies

II. Attention Deficit (AD) / Hyperactivity Disorder (HD)

III. Discalculia

IV. Disgraphia

V. Dyspraxia

VI. Autism

Now let us try to know each of the above in a very nutshell :

I. Information Processing Deficits : Learning disabilities fall into broad categories based on the four stages of information processing used in learning : (i) Input (ii) Integration (iii) Storage and (iv) Output

(i) Input :This is the information perceived through the senses, such as visual and auditoryperception. Difficulties with visual perception can cause problems with recognizing the shape, position and size of items seen. There can be problems with sequencing, which can relate to deficits with processing time intervals or temporal perception. Difficulties with auditory perception can make it difficult to screen out competing sounds in order to focus on one of them, such as the sound of the teacher's voice. Some children appear to be unable to process tactile input.

(ii) Integration :Students with problems in these areas may be unable to tell a story in thecorrect sequence, unable to memorize sequences of information such as the days of the week, able to understand a new concept but be unable to generalize it to other areas of learning etc. A poor vocabulary may contribute to problems with comprehension.

(iii) Storage :Problems with memory can occur with short-term, working memory or with long-term memory. Most memory difficulties occur in the area of short-term memory, which can make it difficult to learn new material without many more repetitions than is usual.

(iv) ***Output :***Information comes out of the brain either through words, that is, language outputor through muscle activity. Difficulties with language output can create problems with spoken language, with written language or with motor abilities for the same reasons. They may also have trouble running, climbing or learning to ride a bicycle. People with small motor difficulties may have trouble buttoning shirts, tying shoelaces or with hand writing.

II. Attention-Deficit (AD) / Hyperactivity Disorder (HD) :AD/HD is a neurobiological disorder that likely affects activity in the parts of the brain which regulate impulse control and attention.

III. Dyscalculia : Dyscalculia is a learning disability involving math skills.

IV. Dysgraphia : Dysgraphia is a neurological disorder that involves writing. It can also involve difficulties with the physical aspects of writing.

V. Dyslexia : The term "dyslexia" is generally used as a synonym for reading disability.

VI. Dyspraxia : Dyspraxia is an under development of the brain resulting in messages not being properly transmitted to the body, producing a number of consequences in physical and cognitive areas. It can cause difficulty with single step tasks such as combing hair or waving goodbye, multi-step tasks like brushing teeth, getting dressed or with establishing spatial relationships such as being able to accurately position one object in relation to another.

VII. Autism : Autism is not a disease, but a developmental disorder of brain function.

Symptoms of autism usually appear during the first three years of childhood and continue throughout life. It is interesting to note that autism strikes males about four times as often as females, and has been found throughout the world in people of all racial and social backgrounds. Named after John Langdon Down, the first physician to identify the syndrome, it is also known as 'Down syndrome'. Dyscalculia, Dysgraphia, Dyslexia and Dysgraphia will be discussed latter.

Question :

Let Us Check Our Progress

Write your answers in the space given below:

1. List six types of specific types of Learning Disabilities

……

……

2. What is the difference between Dyscalculia and Dysgraphia?

……..

……

3. What are the stages of Information Processing Deficit?

…….....…...……

…….....……

6.1.5 MEANING OF REMEDIAL EDUCATION

Remedial education traces its roots in the first half of the 17th Century. At that time Harvard College, tutors were provided for less-prepared students.

According to Merriam-Webster's Medical Dictionary (2002 Merriam-Webster, Inc.) meaning of 'Remedial' means: intended as or providing a remedy; concerned with the correction, removal or abatement of an evil, defect or disease or intended to correct or to improve one's skill in a specified field.

On the light of the above definition of 'Remedial' we will try to give some definitions of 'Remedial Education".

Webster's Revised Unabridged Dictionary (1998 MICRA, Inc.) explained 'Remedial Education' in the following way :

"Programs that are designed to develop specific cognitive skills, usually in the language arts and mathematics, from a deficient level to one that is appropriate to the educational level and aspirations of a particular student. Diagnostic testing to determine the nature and extent of the problem may also be included."

But 'Merriam-Webster's Medical Dictionary' (2002 Merriam-Webster, Inc.) defines the term in a slightly different form :

"As far as Remedial Education is concerned, the learning difficulties or disabilities could be categorized so as children are streamed and taught in these remedial classes in order to help them overcome their difficulties and improve the educational output."

Again Merriam-Webster's Dictionary of Law (1996 Merriam-Webster, Inc.) views 'Remedial Education' as :

"Education helping to improve skills: designed to help people with learning difficulties to improve their skills or knowledge, or relating to education designed to do this."

According to Farrant (1994) :

"Remedial education is any programme of teaching which has reasonable chance of restoring to normal the educational performance of children whose progress has been adversely affected by environmental factors." (Farrant, J. S., 1994)

Farrant made a very simple comparison between a Doctor and a remedial teacher in the following way:

"Remedial Education has much in common with medicine. When you develop backache, you may go to a doctor for treatment. He will begin by trying to locate the exact area troubled and how it is affected.

He will then question you in an attempt to find out how it was caused. On the basis of this diagnosis, he will not discharged you until he is satisfied that recovery is complete. ..

In the same way a teacher, suspecting a pupil of educational injury, will try to

—identify the extent and severity of his backwardness by finding out if he is bacward in all his schooling or only in limited aspects

—discover the causes of the problem by investigating carefully the child's record with regard to such matters as home background, health, schooling attendance, intelligence and ability

—seek confirmation of his suspicions by using standerdised diagnostic and achievement tests to show up the nature of the child's weakness and degree of backwardness in the specific area

—draw up a remedial programme that seeks to prevent further effects from those factors that contributed to his backwardness and also provides strengthening exercise in the skills in which he is weak

—return him as soon as possible to normal education." (Farrant, J. S., 1994)

So 'Remedial Education' may be considered as 'Special classes, or teaching strategies, that aim to help children with learning difficulties to catch up with children within the normal range of achievement.'

In teaching-learning situation the two terms 'Remedial Education' and 'Learning Disability' are intimately related. According to some scholars, the term 'Learning Disability' (LD) refers to a group of disorders that affect a broad range of academic and functional skills including the ability to speak, listen, read, write, spell, reason and organize information. So the teachers must be carefully considered that learning disability is not indicative of low intelligence. Learners with LD have difficulty in achieving grade according to his or her intellectual level.

A child with a specific learning difficulty is as able as any other child, except in one or two areas of their learning. For instance, they may find it difficult to recognise letters or to cope with numbers or reading or they may have difficulty with written symbols. There are many different types of specific learning disability. Often it may be difficult for parents and teachers to realise that a child has this sort of problem, especially if their development has appeared quite normal in the early years. Often, the child will appear to understand, have good ideas, and join in storytelling and other activities as well

"Remedial education is any programme of teaching which has reasonable chance of restoring to normal the educational performance of children whose progress has been adversely affected by environmental factors." (Farrant, J. S., 1994)

as other children and better than some. Sometimes it can take years for adults to realise that a child has a specific difficulty.

6.1.6 LEARNING DISABILITY AND REMEDIAL EDUCATION

Before going to discuss 'Remedial Education' we should first make it clear who need it,

because many of us think that this type of education is only necessary for specially challenged children or learners.

For someone diagnosed with a learning disability, it can seem scary at first. But a learning disability doesn't have anything to do with a person's intelligence - after all, such successful people as Walt Disney, Alexander Graham Bell and Winston Churchill many more renowned personalities had learning disabilities.

Remedial Education is necessary for learners with specific disability in learning. It is for remedying educational backward learners only for giving them special academic assistance. Sometimes people can't differentiate between 'Remedial Teaching' and 'developmental' or 'Corrective Teaching'. These two terms are completely different and learners are also different in these two cases. Otto et.al. (1973) had differentiated the two terms in the following way :

> *"Sometimes, if the people has been exposed to limited or poor quality teaching, or if he simply was not ready to learn when he first received instruction, or if his learning was arrested by some personal problem, the teaching task can be relative simple. A rule of thumb among remedial teachers is that if a case is uncomplicated and diagnosis suggests that straightforward skill development will overcome the problem, the case is a corrective, not a remedial one. On the other hand, if diagnosis determines that lack of basic skills is only part of the problem and that it has been complicated by biological, psychological or environmental deficits, it is a remedial case and the people needs a considerably different programme."*

The correlates of Learning Disability (LD) are many and varied. The general correlates are shown in the fig. 1. below where correlates and intercorrelatedness are given. These correlates are divided in to three categories: Biological, Psychological and Environmental. But often intercorrelation among the factors may occur and develop LD.

The evolution of definitions of LD can be traced to the turn of the 19th century and is closely linked to concepts of organically based behavioral disorders (Doris, 1993; Rutter, 1982; Satz& Fletcher, 1980). At that time hyperactive and impulsive children were considered as LD, but the cause of the disorder was not obvious. These problems often occurred in children for whom there were a history of brain injury and it was often assumed that the cause of these unexpected behavior disorders was constitutional in origin and these children were described with terms such as organic driveness syndrome.

In the early 60s it was recognized that many children with these behavioral difficulties also had difficulty mastering academic skills with associated processing difficulties despite adequate intelligence and opportunities to learn.

In 1968 definition of LD was given as follows :

> *"The term "specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning disabilities, which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. (USOE, 1968)"*

But in 1977 the Federal Register recommended a modified definition of LD as follows :

> *".. a severe discrepancy between achievement and intellectual ability in one or more of the areas: (1) oral expression;*
>
> *(2) listening comprehension; (3) written expression; (4) basic reading skill; (5) reading comprehension; (6) mathematics calculation; or (7) mathematic reasoning. The child may not be identified as having a specific learning disability if the discrepancy between ability and achievement is primarily the result of: (1) a visual, hearing, or motor handicap; (2) mental retardation; (3) emotional disturbance, or (4) environmental, cultural, or economic disadvantage." (USOE, 1977)*

In 1997, IQ discrepancy was added in the definition of LD and the following criteria was added in the previous definition :

"(a) A team may determine that a child has a specific learning disability if : (1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (a) (2) of this section, when provided with learning experiences appropriate for the child's age and ability levels; and (2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas: (i) Oral expression; (ii) Listening comprehension; (iii) Written expression; (iv) Basic reading skill; (v)

Reading comprehension; (vi) Mathematics calculation; or (vii) Mathematics reasoning." (U.S. Department of Education, 1999).

Bateman, B. D. (1969) defined 'Learning Disabilities" in the following way:

> *"Children who have learning disorders are those who manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance related to basic disorders in the learning process , which may or may not be accompanied by demonstrable central nervous system dysfunction and which are not secondary to generalized mental retardation, education or cultural derivation, severe emotional disturbance, or sensory loss."*

But Love Harold D. (1975) has given a simple definition of LD. According to the author:

> *"Regardless of the lack of agreement about definition, the child with learning disabilities is probably best described as one who manifests an educational discrepancy between his mental capacity in learning and his actual level offunctioning."*

So this is closely associated with 'Remedial Education', because it is necessary for those learners whohave specific learning backwardness or personality problems. In 2001, the US Department of Education Office of Special Education Programme (OSEP) reached a consensus definition of 'Specific Learning Disability' (SLD). The definition is as follows:

"The central concept of SLD involves disorders of learning and cognition that are intrinsic tothe individual. SLD are specific in the sense that these disorders are significantly affect a relatively narrow range of academic and performance outcomes. SLD may occur in combination with other disabling conditions, but they are not due primarily to other conditions, such as mental retardation, behavioural disturbance, lack of opportunities to learn, or primary sensory defects."For subjective backwardness there are two types of 'Remedial Education':

1. Develop of specific skills for learners who have LD in specific subject areas and
2. Remediation of basic mental process of these learners who have disabilities in one or more areas in perception, attention, memory and / or other cognitive processes (e.g. Reading,Writing and Mathematics).

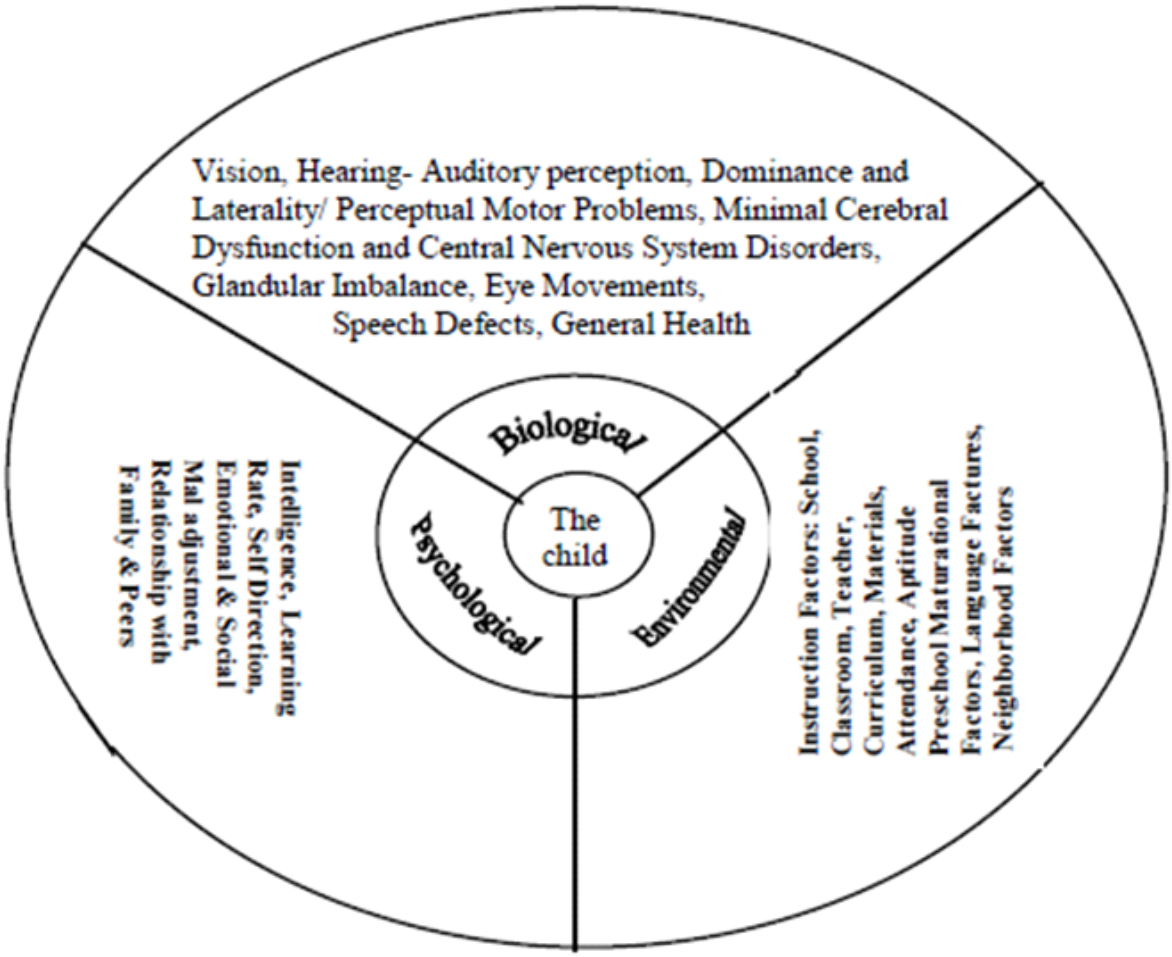


Fig. 1. : *Correlation of Learning Disability (Otto et al., 1973)*

Question :

Write your answers in the space given below:

1. Distinguish between remedial teaching and corrective teaching.

……

……

2. Define learning Disability

……..

……

6.1.7 NEEDS AND OBJECTIVES OF REMEDIAL EDUCATION

Remediation of Learning Disabilities (LDs) is done through remedial teaching. So remedial education and remedial teaching are closely associated with one another.

In a normal classroom situation every pupil is unique in his behaviour, attention capacity, memory span etc. naturally their learning abilities will also to be different from one another. This will affect their academic standard, pace of classroom learning quality, academic performance etc. But the learners who are normal in their intelligence and have no physical problems are lagging in academic activities are LD learners. For such learners 'Individual Remedial Teaching' (IRT) programmes are to be arranged because these learners are constantly lagging in academic performance from their counterparts.

By adopting special curricula and teaching strategies for these learners teachers can help learning activities of those LD learners according to their needs and abilities.

The teachers can design individual programmes with intensive remedial help and support to consolidate the knowledge base of the learners in different subjects where they are constantly getting poor grades. This will help them to strengthen their confidence in the subjects where they have faced difficulties previously.

But during their teaching, particularly remedial teaching, the teacher should provide systematic training to develop learners' skills, interpersonal relationships, communication, problem solving abilities, independent thinking, creativity etc. This will also help such learners to become lifelong learners to become life long learners, also to develop their positive attitudes and values and prepare them for their future studies.

We have already discussed that LDs may develop due to several reasons by actions and interactions of several correlates and objectives of RE is to identify backward learners to detect their causes of learning backwardness (in specific, general and subjective areas) and device specific measures so that their problems are removed. Thus these learners will be accommodated in their regular class set up.

6.1.8 NATURE OF EDUCATIONAL DIAGNOSIS

Diagnosis of an individual's traits and potentialities is essential to the selection of adequate materials for effective adjustment. For this reason diagnostic and remedial techniques are

important for LD learners. The learners, who are physically fit, mentally alert, emotionally balanced and whose home and school environment are good enough to fit him/ her to the educational situation are normal learners. But if the learner lacks any one of the above criteria may be a maladjusted learner. These deficiencies are overcome by remedial techniques. But remediation is not possible unless the source of difficulties is not pointed out. The task of identification of such difficulties is known as *diagnosis*. In other words *diagnosis* is the scientific study of understanding of individuals disorder byobjective study before the start of the treatment. Diagnosis combines three things :

The learners, who are physically fit, mentally alert, emotionally balanced and whose home and school environment are good enough to fit him/ her to the educational situation are normal learners.

(i) casual factors of discard;

(ii) estimate of prognosis;

(iii) identification of patient's condition in terms of one of the accepted clinical entities.

So diagnosis requires the combined efforts of doctor, psychologist, social worker and psychiatrists. All of them will work in a team. This is known as *interdisciplinary approach* where each of the experts prepares his / her own report about the learner under investigation.

Diagnosis has a positive connotation, because it is not merely to seek or to classify the malfunctioning in the teaching learning process of the learner. A sensitive teacher discovers strength and weakness through diagnosis. But it is not an easy task like day-to-day activities of a classroom teacher. More often the causes of disability occurs due to more than one factor and in such cases it becomes very difficult to identify or isolate the particular factor.

According to Pressey, Robinson and Horrocks (1959) diagnosing a learning problem is quite different from attempting to isolate a germ that is causing an illness or to locate the defective part that is keeping an automobile from running. They concluded that diagnostic and remedial efforts must be guided by recognition of the complex nature of the individual and how he learns.

6.1.9 TECHNIQUES OF EDUCATIONAL DIAGNOSIS

Techniques employed in educational diagnosis are many, because types of disabled learners are many and varied. For this reason, all types of learning problems do not require prolonged, intensive or sophisticated diagnosis to permit successful treatment. It is also not require diagnosing

all such pupil by highly trained specialists. Purpose of diagnosis is to discover the information that is required to devise a plan for efficient treatment. Some times, for this reason, expart persons require detailed and complex analysis and sometimes it can even be determined by the close observation by the class teachers. The diagnostic process can be systematized by dividing it in to different levels according to the situation evolved.

Tinker (1967) has suggested only three levels: (1) General, where areas of weakness are identified;

(2) Analytical, where specific strength and weakness are identified; and (3) Case study, where all the information requisite to understanding the problem is collected and considered.

On the other hand, Carter and McGinnis (1970) had considered four levels of diagnosis: (1) Identification of the problem; (2) Classification of the problem; (3) Identification of instructional needs; and (4) Determination of casual factors.

But Otto et al (1973) had considered three levels only: Survey, Specific and Intensive for different reasons. These authors considered that identification and classification of the problem is actually a single step process in the diagnostic process.

The teacher generally carries out diagnosis at the survey level. The further study of the learners is done on the basis of this preliminary report. At this level the teacher examines the achievement report of the learners and the teacher thus identify the weak learners. Then the teacher selects the remedial teaching method for the weak learners. The steps of remedial measures may be same for the group or it may be different for different learners. So this level is mainly a classroom screening level.

The teacher generally carries out diagnosis at the survey level. The further study of the learners is done on the basis of this preliminary report.

Diagnosis at the specific level is for the individual learners who are to be diagnosed separately for identification of the weakness and gaps, which are the causes of poor performance. So it is the survey level where identification of the disabled learners are made, while at the specific level where tentative diagnosis is suggested and performance of the area or areas are carefully examined.

Diagnosis at the intensive level is required for severe learning disable students. These are required for complicated and complex cases and several factors are responsible for this type of learners. So here a more organized and planned programmed is necessary. Here a detailed and

complete case study is done to get an overall picture of the learners and their needs. Depending upon the level of diagnosis the technique or techniques to be adopted is/are as follows:

1. Case Study :

It is generally done by a teacher or by a psychiatrist. The data is collected from parents, close friends, guardians and peer groups. Covile and coworkers have suggested detailed steps of collecting data in the case history. Only the relevant and necessary portions for diagnosis of learning disabled students are given below:

(i) Identifying data;

(ii) State of the presenting problem;

(iii) Health history;

(iv) Developmental history;

(v) Family history;

(vi) Educational history

(vii) Work history;

(viii) Learner's interpersonal relationship;

(ix) Psycho-sexual history;

(x) Special personal habits; and

(xi) Personal traits

Diagnosis is generally done by a teacher or by a psychiatrist. The data is collected from parents, close friends, guardians and peer groups.

2. Psychological Examination

Clinical psychologists conduct this examination. He/she generally uses interview techniques and at the same time other diagnostic tests are also used. According to the problem a battery of psychological tests is used and it is the responsibility of the psychologists to select the test battery to be used for the particular purpose. Some of the common type of tests used in diagnostic purposes is as follows:

(a) Intelligence Tests :

These tests are used to understand the mental ability of the learner. In classroom situation it is generally used in a group but in clinical set up individual tests are applied. More common

tests used are Wechsler-Bellevue Intelligence Scales, revised new version of the Standford – Binet Intelligence Scale, non-verbal tests for learners have language handicapped.

But modified version of Wechsler-Bellevue Intelligence Scales are more effective because it has both verbal (five verbal subsets) and performance subsets (five subsets). This battery has been found to be highly reliable and valid for measuring both qualitative and quantitative mental capacity.

(b) Tests for Concept Formation, Aptitude and Interest :

For some special diagnostic purposes several tests may be used, e.g. Goldstein-Scheerer, Hauffmann-Kasnin etc. These tests reveal the weakness in concept formation and abstract thinking.

For assessing the aptitude of learners several standerdised tests are used. Among several tests the Differential Aptitude Test (DAT) is very useful. Benett and Coworkers first published it in 1947. The test has eight subsets and is used for education and vocational guidance and counseling and also remediation. Other tests used for this purpose are the General Aptitude Test Battery (GATB), the Flangan Aptitude Classification Test (FACT) etc. For measuring interest, one of the earliest and most popular interest inventories was the Strong Vocational Interest Blank (SVIB) developed by E.K. Strong in 1951. Since then it was standerdised several times. Other tests are also available.

(c) Techniques and Methods of Assessment of Personality

Backwardness in learning may be due to personality problems. So assessment of personality may also be necessary in some cases for diagnostic purposes. The methods used for these purposes may be subjective, objective and projective types. Most of the time it is difficult to clearly demarcate which technique is to be used. But the commonly used techniques may be classified as follows:

(a) Observation techniques and situation tests are used when individual's behaviour in actual life situations can be observed.

(b) Autobiography, questionnaire, personality inventory and interview may be used when individual is required to speak about himself.

(c) Case studies, biographies, rating scales, and sociometric techniques are used when other people's opinion is required for the person whose personality is under assessment.

Some of the techniques used in assessment of personality are discussed below:

(i) Observation: This technique is used when the observer decides what personality traits or characteristics he needs to know. The observer then observes the relevant activities of the subject in real life situations. It is done in two ways: (a) the observer does not hide himself from the subject; (b) the observer hides himself from the subject to avoid subject's unwillingness to face the situation. The observer may use tape-recorder, camera, telescope etc.

(ii) Situational Tests : The experimenter tries to create a situation so that he may use it for assessing the related traits under consideration.

(iii) Questionnaire : In this case personality characteristics of the learner is assessed by the information given the learner him (her)self. A set of standerdised questionnaire is developed according to the requirement. Some times standerdised tests are also available. After application of the questionnaire it is carefully analysed and the result is used for the diagnostic purposes. But the questionnaire should be carefully applied and proper process should be followed.

(iv) Personal Inventory : This different from questionnaire. Here the items of the inventory areworded in first person. Some of the inventories available for this purpose are MMPI developed by Mckinley and Hatheway, The California Personality Inventory, The Eysenk Personality inventory etc.

Interview is also another good and effective technique but it requires expertise of the interviewer.

(v) Projective Technique: There is large number of methods under this category. The methods

have the following common characteristics:

1) They evaluate total personality;
2) A broad range of responses is obtained. This helps to characterise the subject under investigation.
3) The subject is asked to respond to, interpret or complete a relatively unstructured stimulus. Thus, the subject consciously or unconsciously project his/ her needs, whishes, desires, fears etc.
4) The individual's behaviour is measured under relatively standerdised conditions.

The most widely used tests under this category are Thematic Appreciation Test (TAT), Rorschach Ink Blot Test, Children's Appreciation Test (CAT), Word Association Test, Sentence Completion Test etc.

In Rorschach Ink Blot Test there are ten inkblots and these are presented to the subject one after another for his/ her interpretation. The responses are analysed according to the direction given in the test. This helps to know the personality and type of the subject.

On the other hand TAT contains a series of pictures. These are presented to the subject one by one with proper instruction. The subject will develop a story for the each picture. These pictures are then analysed by expert persons and they reveal subject's unconscious drive, conflicts etc.

The sentence Completion Test consists a range of incomplete sentences. The subject is then directed to complete them. The stimulus phrases of the sentence evoke reaction to the principal conflict areas.

*(d) Medical Examination :*In this technique a detailed history of the subject is taken. It also includes functioning of the body, metabolic systems, physical disorder etc. A general physician who then detects the causes of the disorder if any studies this.

*(e) The Psychiatric Examination :*A professional psychiatrist does this. He interviews the subjectto observe and evaluate significant aspects of subject's behaviour, e.g. exaggerations, distortions, abnormal responses etc. The traditional psychiatric examination tries to find out the following factors: (i) Appearance and general behaviour; (ii) Attitude and behaviour during interview; (iii) Stream of mental activity; (iv) Emotional reaction; (v) Mental trends

(vi) Sensory condition, mental grasp and capacity.

At the end a summary is prepared which exposes subject's intellectual capacity, evenness of performance, deteriorative trends etc.

*(f) Diagnosis of Pupil's Difficulties :*If careful diagnosis is not done, then there are every possibilities of misinterpretation of the causes of disabilities of the learners. Every learner is unique and complex in his/ her classroom, so each of him or her should be carefully diagnosed and evaluated. Then only remedial techniques should be applied to prevent the occurrence or recurrence of such difficulties.

Long ago Hidreath, C. (1939) had suggested five major areas of investigation of such learners:

(a) *Mental equipment of the learner* : In this part aptitude for academic activities, learning capacity, learning habits, mode of responses, reasoning abilities, insight memory, commandover mother tong, vocabulary etc. are observed.

(b) *Personality, Temperament and Dynamic Equipment* : This includes self-control, desirable and undesirable inhibitions, attitudes, shyness, daydreaming, sex interest etc.

(c) *Physical Status* : This includes physical condition, sensory and motor equipment, physical maturation, disease history, muscular strength and weakness, steadiness etc.

(d) *Environment and Home History* : This part includes literacy of parents, economic conditions,harmony in home adjustment, attitude of home towards school, association with other children etc.

(e) *Learner's daily scheduled* : This includes nursing, eating, sleeping, playing, schoolwork athome etc.

(f) *School situation, History and Present Status* : This includes method of instruction at school,size and capacity of the class, school work, school progress etc.

The expert teachers generally do all these. Each of the techniques stated above has limited usefulness, because human personality is very complex and more than sum total of its factors. For this reason no one technique cannot reveal all the causes of learning disability of students. Here another factor is very important. Some times personality of the evaluator may affect the total testing process.

So all the results are to be recorded carefully and they are to be explained very cautiously to get effective result.

Question :

Let us check our progress

Write your answers in the space given below:

1. What are the utilities of Projective Techniques?

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2. What is the importance of medical examination in the detection of Learning Disabilities?

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6.1.10 SPECIFIC BACKWARDNESS

In previous sections we have defined 'Specific Backwardness'. These are very common among disable learners. Sometimes one or more factors affects learners and causes learning disabilities.

In this section we will discuss only three of the specific backwardness, viz. Reading, Writing and Arithmetic and try to know the causes of these disabilities. We will also discuss what remedial measures should be adopted in these cases.

Causes of learning disabilities are not yet fully known, 'yet it seems that they are the result of faulty process in basic learning ' (Cohen, 2007). It has been found that result of remedial education isquite satisfactory if it starts at the early stage. So the teacher may consider the following ten warning signs for detection of learning disabilities:

The student —

- has difficulty in reading.
- is reluctant to read in front of the class teacher.
- has difficulty in understanding verbal or written directions.
- switches or leaves out letters in reading or writing.
- has difficulty copying from the board.
- has great difficulty with math.
- asks a question about a subject that was discussed 10 minute earlier in class.
- is very dependant and has difficulty working on his own.
- does not cooperate in class and does not answer questions.
- has difficulty naming objects or finding words.

6.1.10.1 : READING DISABILITY, CAUSES AND REMEDIAL MEASURES

Many psychologists used the term 'Dyslexia' for 'Reading Disability'. But there are wide range of controversy and disagreement regarding the use of the term. Actually the term 'Dyslexia' means severe reading disability. Actually all the learners who have reading disability are not severely affected. Again it is not due to physical disabilities like visual problem. But it is problem in how the brain processes the information as the individual is reading.

(a) Types of reading disabilities :

Robinovitch (1962) and Kolson et.al. (1963) had categorized reading disability into two heads : severely disabled (dylexic) and less seriously affected readers. Otto (1973) had also suggested only two categories of reading disability: primary and secondary reading disabilities. Now let us see the factors behind these two categories.

Primary Reading Disability — This type of reading disabilities is severe type. The characteristics of this type of reading disabilities are as follows:

- 'Factors are endogenous; that is, they are internally based.
- Pupils have adequate intelligence.
- Spelling and arithmetic skills as well as reading skills are poor.
- Auditory and visual discriminatory are also poor. Symbolisation – translating letters into meaningful words- is the deficient aspect. Blending is also difficult.
- Poor visual memory and great difficulty learning sight words.
- Mixed dominance, confused or mixed handedness, eyedness or footedness.
- Reversal or rotations, e.g. 'was' for 'saw', 'on' for 'no', 'd' for 'b' etc. in reading and/ or writing.
- Transpositions, e.g. 'gril' for 'girl'.

Reading disability can be categorized in to two groups: primary and secondary.

- Mirror writing
- Faulty body image and poor coordination.
- Familial, or, to use other terminology, genetically determined defects.
- Emotional problems, but not as a primary causal factor.

- No gross physical or opthalmologic defects.
- Record of possible birth trauma or head injury.' (Otto, 1973)

Otto had included the following factors in secondary reading disability:

- Exogenous factors, e.g. environmental, educational, emotional, societal etc.
- Lack of motivation,
- Limited intellectual abilities,
- Emotional problems; e.g. anxiety, depression etc.

Diagnosis of reading disability is not a simple task and remedial teachers may disagree on the above started demarcation. But it is also to be considered that the separation between the primary and secondary reading disability is not a watertight compartment. A reading disability can affect any part of the reading process, including difficulty with accurate and/or fluent word recognition, word decoding reading rate and oral reading with comprehension and reading comprehension. Common indicators of reading disability include difficulty with phonemic awareness — the ability to blend sounds in to words or break up words into their component sounds.

(b) Causes of Reading Disability :

Reading Disability can develop due to several reasons. A child must develop several skills before acquiring a fundamental reading ability. This is collectively called 'reading readiness'. Some of the reading disability is as follows:

- *Lack of 'Pre-reading Skill'* : Unless reading readiness is develop among the learners,there is every possibility of development of reading disability. Some researchers consider factors like vision, hearing and age for reading disability, because these are related to reading readiness. So they consider the development of physical, visual and auditory skills for the development of reading ability (Spachi, 1981).
- *Lack of Pre-reading skills* :Venezky (1980), on the hand, considered the development of 'pre-reading skills' for the development of reading readiness.
- *The age factor* : Some researcher consider age factor as an important criteria for the development of reading readiness. Researchers like Morphett and Washburne noted that most learners made satisfactory reading progress at the mental age of 6.5 years. Though this is a controversial issue and some researchers arrived at different conclusions.

- *Learners not acquired the necessary skills for reading:* Classroom teaching, remedial education, and specialized tutoring usually address the lack of reading skills. If the student has had adequate reading instruction and is still not reading, the remedial teacher needs to look elsewhere.
- *Lack of one or more of the prerequisite abilities for learning to read*: Learning abilities are not the same as reading skills. Learning abilities for reading are more fundamental than reading skills.
- *The general approach to reading instruction* : Many students need a different approach to reading because they are not strong in semantic (verbal) or symbolic (notational, phonic) processing.
- *Reading failure due to perceptual and sensory-motor skills* : Many students who cannot read proficiently have visual skills problems in processing the written word.

There are other causes of reading failure, but the above causes cover the vast majority and, in any case, the above causes should be ruled out before other causes are considered.

(c) Diagnosis of Reading Disability :

Reading can be divided in to several sub-tasks. Among them the main sub-tasks are 'Decoding' and 'Comprehension'. "Decoding involves translation of printed symbols in to sounds that represent meaningful information." (Rothstein, P. R. 2005)

Comprehension means understanding a printed message and literal comprehension requires an understanding of the words in a passage. So diagnosis of reading disability should be considered on the basis of the above two points.

Considering the diversity of the learners regarding their reading disabilities, a diagnostic – prescriptive approach should be considered and individual learner should be given importance. The following diagnostic approaches are considered at different levels :

(i) Survey Level of Diagnosis :

At this level of diagnosis the teacher examines the presence of learners in order to (a) examine the success of the teaching programme (b) determine areas where learners (individually or group) require special attention. (c) locate individual learners whose problems need more specific diagnosis.

For reading disabilities the major sources of information can be reviewed by the application of survey tests of reading ability. Application of a standerdised test on reading ability almost fairly accurate basis for estimating the difficulty level can be determined.

Some of the diagnostic test for determining reading disabilities is: The Primary -I Battery (Grade- I), The Primary-II Battery (Grade- II), The Elementary Reading (Grades 3&4), Intermediate Reading (Grades 5&6), Advance Reading (Grades 7&8), Diagnostic Reading Test, Survey Section, The Stanford Reading Tests (Revised Edition) etc.

(ii) Specific Level of Diagnosis :

At the Specific Level of Diagnosis it is useful to know the mental ability of the learner by reliable and valid tests. This helps the remedial teachers to judge the severity of the reading disability and consequently they can reach at a realistic prognosis.For measuring mental ability the Stanford – Binet Intelligence Scale (new edition), the Wechsler Intelligence Scale for Children, Full Range of Picture Vocabulary Test, the Quick Test etc are useful.

Standerdised reading tests used in this case are: the Silent Reading Diagnostic Tests, Word recognition Test, General Word Elements etc.

(iii) Intensive Level of Diagnosis :

This level is applicable when the learner faces severe reading problems due to physical and/ or psychological problems. So the remedial teacher will consider this level only when other remedial measures fail. Usually the specific data collected from all tests are used for selecting for proper remedial treatment. But if this also fails, only then the remedial teacher should give a close look and takes help from other persons from this field. In short, the teacher terns from common procedure and finally move to intensive attempt to know the causes of the gap of the learner.

(d) Function of the Teacher in remedial reading

After a thorough diagnosis remedial measures are to be taken. In this case it is preferable to give remedial treatment in tune with the individual needs of the learners. The following activities of the teachers are suggested :

(i) Offer a Wide Range of Reading Materials : Organize a wide range of reading materials foreach unit of study in your classroom. Typically, a secondary classroom

relies on the textbook as the primary source of information, but standard textbooks are sometimes not enough for remedial or reluctant readers. An article from a periodical, a primary source document, ancillary textbook program materials, or an online source might used as remedial reader.

If a student is reading below grade level, there are specific steps the content teacher can take to make the textbook accessible and repetition of these steps is integral to success.

(ii) *Use Pre-Reading Techniques* : First, teach students the structure of the textbook. Usually,the paragraphs in a textbook begin with the main idea, subsequent sentences are details, and the final sentence is a summary. Give students prior knowledge before asking them to read. Additionally, provide pre-reading questions to students. Such questions are essential for comprehension in these students.

Finally, encourage students to pre-read the assignment by examining the photographs, bold words, headings, and key terms.

(iii) *Use Large-Print Materials* : Whenever possible, use large-print materials. Reluctant and remedial readers are often intimidated by small print; subconsciously they feel overwhelmed by the sheer number of words on the page.

(iv) *Engage Multiple Mod System* : Involve varying modalities in reading assignments. Careful observation of a reluctant or remedial reader will reveal his or her most effective learning modality.

(v) *Teach Important Vocabulary* : Remedial readers are accustomed to experiencing frustration when reading, and some of this frustration is relieved when students do not have to decode the same words repeatedly during a reading assignment. So organize and teach essential vocabulary before each reading assignment.

Besides these the following points are also to be considered by the remedial teachers:

(vi) Screen young students for vision and hearing disorders.

- ❑ Help children to develop a positive attitude toward reading.
- ❑ Help children develop or utilize physical, visual and auditory skills.
- ❑ Help students to develop attention.

Question :

Let us check our progress

Write your answers in the space given below:

1. List basic types of Reading Disabilities.

……

……

2. Why survey level is important in the diagnosis of Reading Disability?

…….....……..

…….....……

3.What is Pre-reading technique?

…….....……..

…….....……

6.1.10.2 : WRITING DISABILITY, CAUSES AND REMEDIAL MEASURES

Writing is a meaningful activity and its purpose is to communicate and influence others. So learners with writing disabilities are find it difficult to communicate with others at least in written mode. Disabilities in basic writing affects the learner's ability to write words with correct spelling, appropriate word choice and basic mechanics such as letter formation, grammar, and punctuation.

People with learning disabilities (LD) in basic writing may not understand the relationship between letters and the sounds they represent and often cannot distinguish the correct written word from the incorrect word. Learning disabilities in basic writing are also sometimes known as dysgraphia. It has an adverse impact on the learners and their academic achievement.

(a) Causes of Writing Disability :

Disabilities in basic writing affects the learner's ability to write words with correct spelling, appropriate word choice and basic mechanics such as letter formation, grammar, and punctuation.

Writing represents a highly complex neurodevelopmental process, which involves multiple brain mechanisms. It requires the simultaneous and sequential integration of attention, multiple information sources, memory, motor skill, language, and higher cognition. Gross and fine-motor coordination, motor memory, and "kinetic melody" requires

balancing, flexing, and contracting movements as well as simultaneously stimulating some muscle groups while inhibiting other muscle groups. So when this neurodevelopmental process does not function properly it affects writing ability. In order to self-monitor writing output, visual, propriokinesthetic, automatic motor memory, and revisualisation feedback mechanisms must be engaged. Visual feedback mechanisms include eye-hand coordination and visual-fine motor integration. Proprio-kinesthetic

feedback mechanisms include awareness of the movement and location of the fingers in space, internal monitoring of rhythm and rate, and pencil grip. Motor memory feedback mechanisms include motor plansor engrams, visual-fine motor coordination to produce symbols, sequentialization, speed, and accuracy. Revisualization feedback mechanisms include visual memory for symbols, whole word memory, visual attention to detail, and spelling. All of these skills require developmental readiness and can be improved with practice (Kay, M. J., 1995).

According to Boss and Vaughan (2002) writing disability manifests due to poor writing performance in children of average intelligence. Generally these learners have no distinct neurological ability and/or overt perceptual motor handicapped.

(b) Indicators of Writing Disability

Some of the indicators of writing disability are:

- Illegible writing;
- Slow and labored copying and writing;
- Awkward, tense, or uncomfortable hand and body position while writing;
- Unfinished letters, words or sentences;
- Inconsistent form, spacing, and position on page;
- Simplistic vocabulary and sentence structure;
- Spelling, grammar, punctuation errors and poor editing skills;
- Content which does not reflect language skills;

(c) Types of Writing Disability

Writing Disability is often classified as either specific or non-specific (Deuel,1994). Specific dysgraphia results from spelling disabilities, motor coordination problems, and language disabilities such as aphasia. The components of motor dysgraphia are sometimes related to anatomical

problems, executive dysfunction, motor planning deficits, and visual-spatial perception problems. Non-specific dysgraphia may result from mental retardation, psychosocial deprivation or poor school attendance. Some children do not develop adequate handwriting skills because they have not received enough direct instruction in written language. Deuel (1994) has divided dysgraphia into three subtypes:

Writing Disability is often classified as either specific or non-specific

- Dyslexic dysgraphia
- Dysgraphia due to motor clumsiness, and
- Dysgraphia due to a defect in the understanding of space.

In dyslexic dysgraphia, spontaneously written text is poorly legible and spelling is severely affected. Copying of written text is relatively preserved, however and finger-tapping speed on a neuropsychological battery is generally normal. Writing Disability due to motor clumsiness is associated with poorly legible spontaneously written text, preserved spelling, and poorly legible copying of written text. Finger tapping speed in such cases is generally abnormal.

Writing Disability due to a defect in understanding of space is associated with poorly legible

spontaneously written text, preserved spelling, poorly legible copying of written text, and normal finger tapping speed (Kay, M.J.1995).

(c) Effect of Writing Disability on learning

Some of effects of Writing Disability on learning and learners are as follows:

- The time and concentration writing requires limits learning from writing tasks. Students may use a note taker, dictation, scribed testing or computer etc.
- Time pressure can intensify writing problems. Do not grade for grammar and spelling for in-class written work when the student does not have time proper to proofreading.
- Written work is time consuming. Give and allow students to begin projects or assignments early.
- Sequencing problems can accompany writing disabilities. Provide structure with course work and assignments in the form of checkpoints, steps, guidelines, and formatting suggestions.

(d) Diagnosis of Writing Disability

There are a variety of diagnostic issues. These include the various characteristics of the writing disable learners, viz. fine-motor/writing speed, attention and concentration, writing

organization, spelling, knowledge and use of vocabulary, language expression, and perception of details. Diagnostic instruments, which may be useful in diagnosing written language disorders include:

- Processing Speed Index scores from the WISC-IV,
- Developmental Test of Visual-Motor Integration,
- Bender-Gestalt,
- Jordan Left-Right Reversal Test etc.

In addition, a variety of language achievement measures may be used:

- The Test of Written Language
- Woodcock-Johnson Psycho-Educational Battery (Third Edition)
- Diagnostic Achievement Battery-Third Edition etc.

Various characteristics of instruction, which should be incorporated into the background knowledge and included in the history taking of the student, include:

- Penmanship instruction
- Instruction on how to organize and arrange thoughts, and
- Instruction on written language rules including capitalization, punctuation, grammar, spelling and sentence structure.

The psychologist should determine whether direct instruction has been provided and whether note-taking methods have been taught and practiced. Traditionally, in many classrooms currently, relatively little time is allocated to the cognitive complex ofwriting (Graves, 1983). It may well be the case that many of the difficulties so many students experience with writing are due to the inappropriate combination of difficult content to be learned and very little time allocated to learning it (Stein, Dixon &Isaacason, 1994). Some psychologists advocate teaching mechanics and they suggest that mechanical writing skills, such as spelling, should not be taught formally. Rather, students should be encouraged to invent spellings (DuCharme, Earl & Poplin, 1989). Others are not in favour of this for several reasons.

(e) Remedial teaching of Writing Disable Learners

Remediation for written language disorders depends upon an accurate localisation and assessment of the student's specific deficiencies. When difficulties are related to the child's age

or grade, age-specific remediation of deficit skills is recommended. When specific deficiencies are present, bypass strategies may be useful. When dysgraphia is the result of multiple deficiencies, remediation and bypass of the problem become more difficult. If the learner suffers from motor control, the remedial teacher may use the following procedure:

Question :

Let us check our progress

Write your answers in the space given below:

1. List three main causes of Writing Disability.

……

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2. What are the three types of Writing Disability?

……

……

3.Briefly mention the functions of a remedial teacher in Writing Disability.

……

……

- Exercise to strengthen muscles. The teacher may also use manipulative writing on sands, soft clay, chalkboard etc.
- The paper and writing instrument (pen, pencil etc.) should be placed in a proper position.
- Proper direction of figuring of letters should be given properly.
- Learners should be given sufficient practice time and help them to write on lined papers.
- Legible letter connection, gap between words and lines are to be taught.

Learners should be advised not to overwrite, frequently cut or overlap in their writing.

6.1.10.3 : ARITHMETIC DISABILITY, CAUSES AND REMEDIALMEASURES

One of the areas of school subjects, which need special attention, is Arithmetic. A large number of learners feel anxiety in completing their Arithmetic curriculum. Majority of the learners

get low grade in Arithmetic. Sometimes called 'Dyscalculia', an Arithmetic disability can cause such difficulties as learning Arithmetic concepts, difficulty in memorizing Arithmetic facts, difficulty in organizing numbers and understanding how problems are organized.

(a) Causes of Arithmetic Disability

Arithmetic requires five major areas of cognitive abilities: addition, subtraction, multiplication, division and the last important factor is 'common sense'. Similarly areas of disabilities in Arithmetic are: carrying, borrowing, add fractions, solving the unknown and setting up word problems (Rothstein, P. R. 2005).

Arithmetic Disabilities occur due to physical, sensory, personal, social and also intellectual factors. Among these factors some are educational and some are motivational factors, though other factors are also present.

- Educational Factors :

(i) *Inadequate Instruction :*Many experts have pointed out thatArithmetic Disability develops due to lack of preparation of teachers for teaching Arithmetic.

(ii) This is on the whole an important criterion for Arithmetic Disability in all countries and states.

Areas of disabilities in Arithmetic are: carrying, borrowing, add fractions, solving the unknown and setting up word problems (Rothstein, P. R. 2005).

(iii) *Over emphasis on drill and memorization :*Repetition develops demotivating effects on the learners. This has a tremendous effect on Arithmetic learning particularly when they repeatedly fail to solve a problem.

(iv) *Lack of Social and Emotional Readiness :*Readiness is very much essential inArithmetic learning. This is important for both teachers and learners Teacher should give emphasis on individual differences of the learners.

(v) *Insufficient Attention to the Vocabulary of Arithmetic :*Some times learners can't identify or understand the terms of Arithmetic. Often they can't differentiate between terms and finally they fail to solve the problem.

- Motivational Factors :

Success in all subjects in school education depend much on interest and motivation. This is particularly true in cognitive area. Untrained an inexperienced teachers increase under achievement in Arithmetic by demotivating them. In many cases, teachers use Arithmetic

terms, which are not very common to the learners. Demotivating factors also exist in the home environment and behaviour of parents and elders.

(b) Identification of Arithmetic Disable Learners

Following are some of the symptoms of learners suffer from learning disability in Arithmetic:

- They fail to write numerical and mathematical symbols correctly.
- Such learners fail to recall the meaning of common symbols and answer to the basic facts.
- They face difficulty in expressing, computing and solving Arithmetical problems.
- Such learners may feel difficulty in following the proper steps and reasoning for solving the problem.
- They feel difficulty in understanding the basic Arithmetical problems, viz. place value, directed numbers, directions, measuring units and their applications etc.

(c) Diagnosis of Arithmetic Disability

For diagnosis of Arithmetic Disability of learners three levels may be used (Otto, 1973). As has been stated earlier, these three levels are Survey Level, Specific Level and Intensive Level.

In the Survey Level, general intelligence tests are used and the results are used for the detection of level of the problem. Some tests may be used here are: Iowa Test of Basic skills, California Achievement Test, Coordinated Scales of Achievement, Stanford Achievement Test etc.

Arithmetic Disability can also be identified by the analysis of day-to-day work done by the learners in their classroom situations.

Arithmetic Disability can also be identified by the analysis of day-to-day work done by the learners in their classroom situations. These results also demonstrate the learners' disability in specific areas in Arithmetic. This type of diagnosis is known as Informal Survey.

At the Specific Level of diagnosis several tests are used. Regular scores obtained by the learners also helps further for this purpose. The remedial methods, workbooks, remedial aids etc. can also be used in this area. The following guidelines are to be followed at this level:

- Age and grade levels of the learners should be at or near the middle range of the score.
- The test should cover the aspects of the curriculum of the school.

- The test should be too complex, cumbersome or difficult to score.
- The test should be properly standerdised so that it can be used at the appropriate level.

Diagnosis at the Intensive Level is seldom necessary for the diagnosis purpose in Arithmetic. It is necessary only for severe cases where other level have failed, because this level only used to detect the multiple problems in Arithmetic learning.

(d) Remedial Teaching in Arithmetic

Before starting remedial teaching, the remedial teacher should take the note of the following points:

- *Ensure cooperation of the pupil* : In the pupil understands that it is necessary for him/ herand the problem will be solved, then the learner will cooperate with the teacher. Thus the task of the teacher will be easy.
- *Use efficient remedial procedure* : The purpose of diagnosis is to point out the effectiveand efficient remedial instructions. So remedial work should be specific and objective based.
- *Use proved methods and materials* : Most of the causes Arithmetic Disabilities can be traced to the ineffective early teaching. New Arithmetic knowledge can be imparted only when previous steps have been mastered. For this reason effective methods and material should only be used.
- *Investigate and correct related factors* : Besides ineffective teaching, some failures are theresult of emotions, physical or environmental factors. So teacher should identify these factors before remedial teaching.

During remedial teaching, the remedial teacher should also consider the practice following processes:

- Teach learners to estimate solution. This helps learners to detect the careless errors.
- Determine where in the problem-solving errors occur. The teacher should also ascertain the previous knowledge, problem solving procedures of the learners etc.
- Conduct error analysis to determine what procedure or computational problem a learner has.

- Help students to recognise different problem types. A problem belongs to a particular family of problems. So if a learner incorrectly identifies a problem family, he/she will probably apply an inappropriate problem solving method.

Question :

Let us check our progress

Write your answers in the space given below:

1. Define Discalculia.

……

……

2. Name three tests used at survey level of diagnosing Arithmetic Disability.

……..……..

……...……

3. When is it necessary to diagnose Arithmetic Disability at the intensive level?

…….....……

- Teach learners to identify only relevant information. Sometimes learners can't identify the problem and in the end he fails to solve the problem.

- Ensure that the learner has skill in basic operations, viz. addition, multiplication facts at the appropriate level.

- Try to provide exemplars and non-exemplars to ensure the clarity of the problem.

- Try to make use of learning strategies by setting a require level of mastery for inculcating self-confidence in the art of calculation and problem solving.

- Assesses learners frequently by using variety of techniques.

- Make use of well-planned programmed learning materials, remedial programmes and also computer assistance instructions if possible.

6.1.11 LET US SUM UP

The learning problems of disabled learners are due to several factors. But teachers and parents may help learners to overcome many of the problems in varying degrees. Generally, learners with specific learning disabilities are underachiever in schools though they may have normal IQs or above average IQs. Otto et. al These learners are categorized in to six types and require remedial education (RE). RE can be defined as: "Remedial education is any programme of teaching which has reasonable chance of restoring to normal the educational performance of children whose progress has been adversely affected by environmental factors" (Farrant, J. S., 1994).

Sometimes people can't differentiate between 'Remedial Teaching' and 'developmental' or 'Corrective Teaching'. These two terms are completely different and learners are also different in these

two cases. Remediation of Learning Disabilities (LDs) is done through remedial teaching. So remedial education and remedial teaching are closely associated with one another. Remediation is not possible unless the source of difficulties is not pointed out. The task of identification of such difficulties is known as *diagnosis*. In other words *diagnosis* is the scientific study of understanding of individuals disorder by objective study before the start of the treatment.

Techniques employed in educational diagnosis are many, because types of disabled learners are many and varied. Three of the specific backwardness common in school education is Reading, Writing and Arithmetic. Specific remedial measures should be adopted in schools for their remediation.

6.1.12 ASSIGNMENTS

1. Explain with suitable examples different types of learning problems.
2. Define and illustrate the term 'Remedial Education'. State why 'Remedial Education' is necessary for LD learners?
3. What do you mean by 'Specific Backwardness'? What are the causes of Reading Disability? How can it be identified and what remedial measures should be considered for these learners?

4. How reading disabilities can affect writing disabilities. Explain with examples and suggest remedial measures for writing disabled learners.
5. Explain how can teachers also develop Arithmetic disability among learners? —Explain remedial measures for such learners.

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POST GRADUATE DEGREE PROGRAMME (CBCS)

in

E D U C A T I O N

SEMESTER-I

EDC-03

Educational Sociology-1

Self-Learning Material

DIRECTORATE OF OPEN & DISTANCE LEARNING

UNIVERSITY OF KALYANI

KALYANI-741235, WEST BENGAL

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Foreword

Satisfying distance learners' needs of verifying kinds and magnitude as well as minimizing distance and to reach the unreached in Open and Distance Learning (ODL) systems has the novelty in it. Nevertheless, this novelty puts challenges to the ODL systems managers, curriculum designers, Self Learning Materials (SLMs) writers, editors, production professionals and may other personnel involved in it. A dedicated team of University of Kalyani under leadership of Hon'ble Vice-Chancellor have puts their best efforts, committed professionalism as a Team for promoting Post Graduate Programmes under distance mode under University of Kalyani. Developing quality printed SLMs for students under DODL within a limited time to cater academic requirements of the Course as per standards set by Distance Education Bureau of the University Grants Commission, New Delhi, India under Open and Distance Mode UGC Regulations, 2017 successfully completed with best efforts.

Utmost care has been taken to develop the SLMs useful to the learners and to avoid errors as far as possible. Further, suggestions from the learners-end will be gracefully admitted and to be appreciated.

During the academic productions of the SLMs, the team received continuously positive stimulations and feedback from Professor (Dr.) Sankar Kumar Ghosh, Hon'ble Vice-Chancellor, University of Kalyani, who kindly accorded directions, encouragements and suggestions, made constructive criticisms to develop it within proper requirements. We gracefully, acknowledge his inspiration and guidance.

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For a comprehensive, learners friendly, adaptable text that meets curriculum requirements of the Post Graduate Programme through distance mode.

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Director
Directorate of Open & Distance Learning
University of Kalyani

Syllabus

EDC-03

EDUCATIONAL SOCIOLOGY-1

(Full Marks – 100)

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	Unit-2: Educational Sociology 2.1: Meaning and Nature of Educational Sociology. 2.2: Meaning and Nature of Sociology of Education.	1
Block-2 Education and Community	**Unit-1: School and Community** 1.1: Concepts of School and Community. 1.2: Relationship between School and Community. 1.3: Socio-metric study in formal (Classroom) groups.	1
	Unit-2: Different kinds of Changes in Indian Society 2.1: Sanskritization: Meaning and Nature. 2.2: Westernization: Meaning and Nature. 2.3: Modernization: Meaning and Nature. 2.4: Secularization: Meaning and Nature. 2.5: Impact of Social Changes on Education.	1
Block-3 Education and Culture	**Unit-1: Education and Culture** 1.1: Meaning and Nature of Culture. 1.2: Role of Education in Cultural Context. 1.3: Cultural Determinants of Education.	1
	Unit-2: Cultural Change & Lag 2.1: Meaning and Characteristics of Cultural Change. 2.2: Factors of Cultural Change. 2.3: Cultural Lag.	1
	Unit-1: Education and SCs, STs & OBCs 1.1: Concepts of SCs, STs & OBCs. 1.2: Indian Constitution and SC, ST & OBC Communities. 1.3: Programmes, Strategies and Suggestions for Educational Development of the SCs, STs & OBCs.	1

Block	Contents	Study hours
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	Unit-3: Folkways 3.1: Folkways: Concept, Nature & Educational Implication.	1
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Block – 1
EDUCATION AND SOCIETY

Unit - 1

Education and Society

Unit - 2

Educational Sociology

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1.1.2 : Background Information About Educational Sociology and Sociology of Education

1.1.2.1 : Sociological Thinking in the USA

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1.1.3 : Meaning and Nature of Educational Sociology and Sociology of Education

1.1.3.1 : Meaning of Sociology of Education

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1.1.4 : Relationship Between Sociology and Education

1.1.5 : Education as a Process of Socialization

1.1.5.1 : Significance of Socialization

1.1.5.2 : Agencies of Socialization

1.1.6 : Education as a Process of Social Subsystem

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1.1.7 : Social Character of Education in Relation to Society

1.1.8 : A Review of Unit-1

1.1.9 : Glossary of Terms

1.1.10 : Suggested Readings

1.1.11 : Assignments

1.1.0 INTRODUCTION

Education is socially manifested, socially oriented and socially controlled for maintenance of social order and achieving social goals. Education and society are interrelated. Society needs education, and education performs its role to fulfill social needs. It is a social product, and also a social process. As a social process, education leads to social interaction and establishes relationship between the person, and the interacting social groups, for modifying behaviour of participants in a socially desired goal.

Education is dependent on society which is the actual system; and education, itself, is a sub-system that depends on the main social system. It performs social role directed toward individual and social accomplishment. The manifold socialization processes and schooling activities achieve the social objectives and lead the society to a better direction. Knowledge of Educational Sociology or, of Sociology of Education is, therefore, so encouraging to understand and apply sociological principles and theories to education.

1.1.1 OBJECTIVES

It is expected that after carefully going through this unit you, as a devoted learner, will be able to :

a. Know and understand the meaning and nature of Educational Sociology, and also of Sociology of Education,
b. Explain the relationship between Sociology and Education,
c. Analyse the socialization process and the significance of this process in the field of education, and
d. Identify the social character of education in relation to societal goal.

1.1.4 RELATIONSHIP BETWEEN SOCIOLOGY AND EDUCATION

Sociology and Education maintain a close relationship; since, they have the same goal toachieve. The main inclinations of the two disciplines are to develop the personality of the learner and to achieve human accomplishment. Social agencies of education are needed to arrive at this end. Various social organizations, and mainly the schools, colleges and universities are the social agencies for fulfilling individual and social needs. These grow within the society for social purposes and these accomplish human perfections for achievement of social progress, social harmony and social efficiency for maintaining better group relations.

The cultural heritages, social norms of value judgement and ideas of co-existence and respect for freedom of others are developed and nourished in a stimulating educational environment as the society creates conditions for human relations and human interactions. This type of social process and human relations are the concern of sociology.

The societal approach to education makes the individual of understanding himself in relation to the external world. The individual cannot be isolated from his cultural heritage or social surroundings and the school provides this type of environment.

The input of the school, that is, the student flow of the school comes from different family background of the community. Social relations and interactions between the family and the academic centres are spontaneously developed. It is not isolated from the society or the community. They rather, work together.

The social forces, concerning economy, power, politics, and religions, casteism and the like, sometime penetrate into academic centres. Academic authorities are to tactfully handle these

social forces very cautiously. It is, therefore, said that the hurdles of social life is unavoidable in educational administration.

So, associative and dissociative forces work together in schooling system.Sociology deals with group life, and group relations. The class room of the school consists of a group of students. They may or may not be homogeneous in nature. They are likely to come from different socio-economic or cultural background. The fundamental process of group life is there. The school is to deal with all these sociological processes of group life. Cooperation, competition, and conflict are the three basic interaction processes and are interrelated in several ways. The schools accept corporate and cooperative life amongst the children; it also tolerates competition for achievement of academic goal. However, conflict may lead to rivalry and aggression. If situation arises, the school has to deal with this extreme form of rivalry; but in real social conditions this is difficult to deal with, if social control measures are not applied. Again group dynamics and group activities are not only manifested within the school conditions but also in social conditions. The sociometric method of measuring interpersonal relationships which find expression both in educational situations and social situations cannot be overlooked.

The principles of curriculum construction, are now-a-days significantly influenced by sociological rules and principles. Whatever curriculum is framed that is to be constructed according to social relevance. "curriculum," according to Mudaliar Commission, "must be vitally and organically related to community life." Even methods of teaching have some relevance to sociological principles. "Good methods which are psychologically and socially sound may raise the whole quality of their life;" that is, the students, life.

Finally, the concept of social control is now-a-days being utilized in school administration and school discipline. The application of the system of reward and punishment in school situation is, also a sociological contrivance in the form of reinforcement either positive or, negative. It is obvious, therefore, that the relationship between sociology and education is close and intimate.

However, this intimacy cannot he extended too far. There are innumerable branches of sociology which are beyond the scope of education. Criminology, History of Sociology, Human Geography, Industrial Sociology, Political Sociology, Social Psychiatry etc., are not relevant to education. It is only Educational Sociology which is intimately connected with educational aim, curriculum, methods administration and teacher education programme. It stands as a special branch of knowledge for educational purposes.

Question :

Let Us Check Our Progress

Name certain social forces that influence education.

What is the nature of group life in the class room?

How does sociology influence curriculum, method of teaching and administration of school?

1.1.5 RELATIONSHIP BETWEEN SOCIOLOGY AND EDUCATION

It is well-known fact, that first education starts with socialization. Without exposition to human environment, and school system of education, better socialization of children, is not possible. Education is, obviously, recognized as a process of socialization. An individual is born with a biological heritage. For survival of the new born baby the biological needs of the baby is fulfilled by the parents and the family members. He or she grows and develops. This growth takes place in a social environment and gradually, the infant acquires social heritages, like language, habits, customs, manners and social values and norms. The child grows and learns continuously, through the process of social interactions, as he comes in contact with social environment like family and school and gradually, he acquires the capabilities for performing his social role. The definition of H.M.Johnson is significant in this context. "Socialization is the learning that enables the learner to perform social role." In terms of Ogburn and Nimkoff, without socialization an individual is not fit for social living "socialization is the process by which the individual learns to conform to the norms of the group." "Socialization," Believes, Roucek and Warren, "is the process, begun in infancy, by which human organism, learning socially approved attitudes, ideas, and behaviour patterns, from contact with other persons, comes to assume the roles which pattern his social behaviour and which correspond to his status in various social group. Personality is acquired in the process of socialization." In terms of La-piere, personality is the "product of socialization". Maclver believes that by virtue of socialization the members of the society acquires the capacity to establish a long-lasting relation amongst themselves, and they become conscious of their duties for developing the complex-web of social relations. It is evident that all these socialization processes lead to personality development. An individual becomes a person through social living. The individual is exposed to social environment like, family, community, school, religious organization, mass-media etc., and acquires the variegated ways of

life of the social environment in which the individual is exposed. The entire process is socialization, and it is a product of learning from the family, school and other agencies.

1.1.5.1 : SIGNIFICANCE OF SOCIALIZATION

Socialization is a continuous process. If the child is not properly socialized he cannot become suitable for his social role and he lacks his normal development. He may become unsocial, introvert, or socially misfit. It is for this reason better socialization is intended to be achieved by means of school education. The experiment on 'Anna' and 'Isabelle' bespeaks the fact that isolated Anna could not acquire any of the human capabilities as she was not exposed to a social environment. So, only heredity is not enough to be a person. Learning and education in a social environment is imperative for development of better personality. Socialization is, therefore, so significant in life.

1.1.5.2 : AGENCIES OF SOCIALIZATION

Better agencies for socialization are needed, for this purpose. The best known agencies are—(a) family, (b) school, (c) play-groups, (d) community, (e) religious institutions, (f) state, (g) political parties, (h) hobby centres, (i) club, (j) mass-media and the like.

Question :

Let Us Check Our Progress

What is the meaning of socialization? Answer in a nutshell.

Do you find any significance of socialization? Give your idea in a few words.

Name, at last six agencies of socialization.

Socialization is, therefore, so much important in education. Any form of socially desired learning is education. It is, therefore, concluded that education is a process of socialization, and without it education is not possible. Socialization is, therefore, so much demanding in education.

1.1.6 EDUCATION AS A PROCESS OF SOCIAL SUBSYSTEM

At the beginning of the fifties, that is, after the conclusion of the Second World War, a new approach stepped in the social organizations. This approach stabilized, more or less, in various

fields of organizational sectors. All governmental organizations, including education were based on "system approach." Education along with its administration, was influenced by "system theory". The key ideas of the system theory were that all organizations and socially approved institutions should be composed of interacting sub-system, each of which would contribute to the system of which it was a part.

1.1.6.1 : OBJECTIVES OF THE SYSTEM THEORY

The objectives of system approach were : –

achievement of goals from appropriate planned system activity;

organizations must make balances both externally and internally, so as, to regulate disorder, disorganization and decay; and

organizational control should require feedback when necessary.

This, system therefore, thinks of education as a social process. Education itself is a constituent part and parcel of social system. So, it cannot proceed or, go ahead on its own accord. It is dependent on societal system. Education is, basically planned, controlled, manned and processed by the society, or the state which is the organized social system. Education is socially approved and is composed of interacting subsystems. Its role is to contribute to the main system by which it is approved and recognized. It has a functional role to perform, so as, to contribute to social good by discharging its educative processes. It depends on the main system, and is directed by that main system, and also evaluated by it. The system theory thinks of education as a social process. It is Talcot Parson who believes that "educational organization is similar to other complex organizations that require technical, managerial and institutional system. Obviously, education is a process of social sub-system. It is concerned with socialization, group processes, culture-transmission, curriculum-transaction, controlling discipline, developing personality and achieving social goals.

Question :

Let Us Check Our Progress

Briefly state the main points of system theory.

What is a sub-system?

Examine the role of education as a subsystem.

1.1.7 SOCIAL CHARACTER OF EDUCATION IN RELATION TO SOCIETY

The meaning of education is difficult to explain without reference to the meaning of society, since, education is societal. The meaning of society is now-a-days viewed from two directions, that is, from structural, and (b) functional or, relational point of view.

Society, in the structural viewpoint, should have four factors :

Locality,

permanent living,

organized group, and

uniqueness of collective activities of its own.

Society is a web of social relationship when considered from functional point of view; and it has a complex pattern of norms of interactions and also, the relational interactions are developed through social functions of the members of different groups and organizations.

Society is conceived, both in the structural and functional or, relational aspects. Sociology is concerned with both these areas. It is involved with group structure and also, with group relationship. For improvement and progress of group life, some type of social agency, as a social contrivance, is needed. It is education which is the best contrived agency for achieving the end of social life in a systematic way. Education enshrines the aspirations of group life and cultivates human culture for reaping the best crop for the mankind as a whole. The individual, as a part and parcel of a group, is developed through all the educative processes; and the society provides conditions for educational avenues. It is for this reason, the proper place of man is within the society. Education performs manifold activities for social weal. Its significant tasks are four fold in character for arriving at social weal.

It preserves values, norms ideals and techniques, along with cultural heritages of the society.

Secondly, as a social process, education leads to social interaction for betterment of the relational aspects of the society and also, communicates and transmits the emerging and commonly valued knowledge, ideas, belief opinion, morals along with techniques and skills of the society. In this respect, education acts as a means to an end.

In the third place, social transformation leading to progress is the goal of society. Education acts as an agent for social transformation.

In the fourth place, education develops new attitudes, values and techniques for arriving at a progressive society by overcoming obstacles to change. In fine, education diffuses new knowledge, skills and techniques to the society, and to the learners, and also, to the broader base of population so as to induce newer ways of thinking, behaving and doing. It is learning to know, learning to be, learning to do and learning to love the mankind all over the globe. All these are social expectations of education, as it is societal. This social character of education is dynamic in nature and an ever growing process.

Question :

Let Us Check Our Progress

What is structural view point of society?

Point out different social tasks of education.

Unit–2
Educational Sociology

1.1.2 BACKGROUND INFORMATION ABOUT EDUCATIONAL SOCIOLOGY AND SOCIOLOGY OF EDUCATION

The theoretical discourses and discussions on Educational Sociology, mainly, came to the light of the day, and also to human knowledge during the 17th, 18th and 19th centuries. This theoretical discussions were limited to countries like France, England, Scotland and Germany. The subject area of theoretical discussions concerning Educational Sociology acquired an unprecented attention in matters of social life, and societal affairs. The behavioural aspects of an individual person got no priority to it. The social consciousness of this kind, mainly, concentrated to three aspects of human affairs :

Environmental matters became significant for ascertaining individual differences;

development of human qualities in a socially desired direction, within controlled environment, was stressed at; and

achievement of human excellence and social progress by means of universalization of education became imperative.

The importance of this theory and discussions found expressions in the thinking of Philosophy of History, Social Psychology, Social Contract Theory, and Biological Science. This theory and discussions were sufficiently illuminated by the great thinkers of this period. Mention may be made of Locke, Rousseau, Comenius, Basedow, Pestalozzi, Hegel, Froebel, Herbart, Paley, Adam Smith, Hume, Ferguson, Comte, Vico, Bagehot and Spencer.

Auguste Comte expressed in emphatic terms the social objectives of education. In his own word, "The aim of education is not to create but to modify." That means, education must bring about socially desired changes which can lead man to his own personal goal, thereby, to fulfil the social objectives through these changes. Trade, the most valued disciple of Comte, considered the importance of Social Psychology as the most effective instrument for controlling social environment so as to bring about significant changes in human behaviour. From that time onward Social Psychology or, group psychology, began to contribute to Educational Sociology. A good number of social thinkers, like E.A.Ross, Sumner, Giddings, C.A.Ellwood and some others led

Educational Sociology and group psychology to a remarkable position. The importance of education was further raised to a great extent by Herbert Spencer, through his advocacy of social evolution.

1.1.2.1 : PROGRESS IN ABROAD

It is however, noted that all these thoughts and discussions were limited to European countries only. At the end of the 19th. century, and in the beginning of the 20th. century, the United States of America had been influenced by the educational thinking of European countries. The U.S.A took long strides for utilizing education for social transformation and social control. The United States of America, also, thought about the measures, as to what should be the various social functions of education for achieving human progress by overcoming the social problems of their time. So, it stressed at educational measures for social control.

The eminent personalities who shared in the new line of Educational Sociology, were John Dewey, Mann, Baldwin, Ward, Giddings, Ellwood, Ross and Colley.

It is evident, therefore, that from the first decade of the 20th. century Educational Sociology found significant place in curricular reorganization of school and higher education. It also acquired its due recognition in Teacher Education programmes. The subject matter of academic institutions and methods of teaching began to be evaluated along with the directions of social needs and aspirations. America acquired European heritage through developing sociological concepts for the stimulation of social behaviours in order that the techniques of social control could be applied to social form, social institutes, social processes and social groups.

Question :

Let Us Check Our Progress

Mention three aspects of social consciousness of human affairs in European countries.

What instigated the U.S.A to European thinking?

What was the result of integration of European and American ideas?

1.1.2.2 : INTEGRATION OF NEW IDEAS

The integration of European and American ideas widened the scope of social pedagogy with the fusion of educational and sociological theories. Naturally, social science, social studies and

social problems got recognition to education. This paved the ground for the growth of Educational Sociology and sociology became the practical and helping science of education. The object of this practical science of education was to ascertain educational goals and processes. Mention may be made of Payne, Roucek,

Dodd and F.J.Brown who advocated that Educational Sociology is more sociology than education itself. It was also contended that scientific educational programmes should be based upon the findings of sociological research that concerns with (a) social group, (b) social control, (c) culture, and (d) personality. All these culminated into a special branch of knowledge which was conveniently termed as "Educational Sociology".

However, a small group of thinkers intended to develop a special branch of science by applying sociological approach to education. This was known as Sociology of Education. The name of W.B.Brookover, Logan Wilson and some others were associated with this science of Sociology of Education.

It is to be remarked, with great care, that Educational Sociology is now, some times, termed as the 'Sociology of Education' since, there are no basic differences between the purposes of the two. Their purpose is to integrate many of the principles and theories in the field of education so as to, utilize education for social transformation, and also, for maintenance of social order in a better direction.

1.1.3 MEANING AND NATURE OF EDUCATIONAL SOCIOLOGY AND SOCIOLOGY OF EDUCATION

Biology and Psychology have long been considered to be the primary foundations of education, as both these subject areas examined different physical and mental or, psychological needs of the child. The needs of the individual are analysed within the purview of biological and psychological principles; but these two foundations do not give proper weight to socio-cultural, economic, political, and moral development of the learner. As a consequence, socialization of the child is left uncared for; and societal development is lost sight of. The worth of the nation, the society and the community can be judged and justified mainly by the worth of the individuals composing it. So, modern society intends to install such educational institutions, as are mainly concerned with developing "values and techniques" for achieving democracy, secularism, national integration, moral qualities, cultural heritages and social norms and conduct. It is also, concerned

with the process of creating productive citizens who are to take part in various fields of activities and operations of science, technology, vocations and productive systems etc. This line of thinking is novel, and mainly sociological. It is, for this reason, sociological theories and principles come to be recognized and accepted in education; that is, in curricular aspects methodology, evaluation, academic administration, and Teacher Education programmes. In the present teacher educational systems "Sociological Foundation of Education" is, thus, universally valued.

The meaning of Educational Sociology, therefore, becomes more comprehensive, "Educational Sociology", as F.J.Brown observes, "is the study of the interaction of the individual and his cultural environment, which includes other individuals, social groups, and patterns of behaviour." E.George Payne, the father of Educational Sociology, earnestly believes in the significance of "constant interaction between the individual and his environment" which is definitely the social environment. Despite, Educational Sociology itself, is neither sociology nor even, education alone. Their interdependence and integration in specific areas of sociological knowledge and principles may be termed "Educational Sociology." Educational Sociology enters into the total education process, that is, it includes the entire process of education comprising social aim, curricular activities, method of instruction, school organization, social control and discipline, status of teachers and even evaluation, and educational measurement; as the application of social statistics has advanced in educational field. The meaning of Educational Sociology is thus, so much comprehensive. Educational Sociology is, therefore, that branch of knowledge which stresses at the development of the child befitting the needs of the society, culture and the national state. In order to fulfil all these needs the child cannot be separated from his social

group, rather, he should grow and develop through multifarious social interactions between himself and the social or human environment.

1.1.3.1 : MEANING OF SOCIOLOGY OF EDUCATION

Now, the attention is turned towards Sociology of Education. Sociology of Education is confronted with social sciences. It is rather, a special field of enquiry in social sciences relevant to Education. Sociology of Education, in principle, is a special branch of social science maintaining close relationship with social studies. "The Sociology of Education," in terms of Ottaway may be defined as "a study of the relations between education and society." It is thus, "a social study and in so far as its method is scientific, it is a branch of social science." Ottaway, also asserts that "Sociology of Education" deals with educational "aims, methods, institutions,

administration, and curriculum", etc.; in relation to social, political, cultural and even, economic forces of society. It stresses at relational aspects of social life, and this relationship directs education for achieving better personality development. It is, therefore, claimed that the nature of Sociology of Education and Educational Sociology is almost similar.

Question :

Let Us Check Our Progress

How did the need for Educational Sociology arise?

What is Sociology of Education?

What is the nature of Educational Sociology and Sociology of Education?

1.1.3.2 : THE NATURE OF THE TWO IDEAS

The Nature of Educational Sociology and Sociology of Education may be identical, but in some of the aspects they may differ with regard to their dimensions on coverages of subject areas. Sociology of Education is more inclined to social sciences, as a whole. It examines education in relation to Sociology, Civics, Psychology, Philosophy, History, Ethics, Religion, Aesthetics and so on ; that is, Sociology of Education believes in combined approach. Otherwise, they have almost the same nature. The two subject areas are not only limited to schools and academic fields, but also to all other sectors of institutional fields and social organizations. Whatever their areas of operation may be; they attempt to achieve human progress, human relationship and survival of human society. Education is a means to an end. They consider education as a socially directed development of the learner, in consonance with social vibration; and this is needed for social and human progress. Discipline, reward and punishment are not only the measures for control of children, but also effective for governmental sectors as a measure of social control. Their nature is such, as they extend their influence of subject areas still further. The use of nuclear weapons, if not controlled effectively by the highest international organization, the result will be catastrophic for the humanity as a whole. This type of human problems are of great concerns to the students and experts in the field of Sociology of Education or Educational Sociology. It is evident, therefore, that their purposes, objectives and line of exploration extend not only to educational affairs but also to various fields of national and international welfare affairs. Weal of human groups, all over the world, is the concern of these new social sciences.

1.1.8 A REVIEW OF THE UNIT

Educational Sociology and Sociology of Education are of recent origin. These subject areas not only influenced education, but also, extended the ideas in other facets of social system. Sociological thinking found clear expression during the first half of the 19th century. The sociological ideas could not so much contribute to education during 17th and 18th centuries. But Auguste Comte, (1822) who is known to be the father of sociological thinking contributed a lot to educational sociology. However, systematic sociology of education developed after the publication of the Journal of Educational Sociology (1927) by Payne George E. and his associates. Henceforth, George Payne is known to be the father of 'Educational Sociology' Walter Willard published sociology of teaching (1932), and Karl Mannheim (1943), contributed a lot to the postwar development of 'Sociology of Education.'

It is evident, therefore, that before this period, Biology and Psychology formed the major foundations of education, along with philosophical ideals. The urge for democracy, secularism, national integration, socialism and sociological ideas formed the basis for sociological foundation in education. Educational Sociology may not be considered as 'Sociology' or 'Education' alone. Their interdependence in areas of sociological knowledge and principles can be termed Educational Sociology. Educational Sociology enters into the entire educative process, that is, aim, curriculum, method etc. Educational Sociology moulds the child to be an useful person of the society. While Sociology of Education is a special branch of social science relevant to education. As the two subject areas are confronted with socially directed education, their nature is almost similar, although, with certain exceptions.

The relationship between Education and Educational Sociology is very intimate and close; since, the intension of the two subject areas is the development of personality in total aspects. Group life is the subject matter of the two subject areas. An individual cannot develop into a person without socialization. Socialization moulds the child for acquiring social attitudes, norm, values, customs, culture and tradition and so on. Socialization and interaction with school, community and family, and other associations shape the behaviour pattern of the child. Education, being a subsystem of the greater social system acts as an agency of social heritage and social transformation. Last, but not the least, is the role of society in organizing better educational system and that requires congenial environment. It is society that can perform the needed task.

1.1.9 GLOSSARY OF TERMS

Social norm : It is a socially accepted standard of behaviour.

Social mobility : It is change of social position of a person, either vertically or horizontally.

Social organization : It has both a condition and a process. Condition is the structure ofvarious units in society and their interrelationship with each other. Process characterises the co-ordination of development among different social units.

Social role : It is the role which is to be performed by individuals and social groups interms of expectations of the society.

Social systems : It refers to organization of reciprocal duties and rights which are permissibleto people having various positions in society.

Socialization : It is exposition of the child in a broader social environment.

Social process : It is that process in which one party is influenced by others behaviour soas to expect reciprocal behaviour of other. It starts with social interaction.

Societal : It is the biggest dimension of the society. It is sometimes identical with the termnation.

Social pedagogy : Pedagogy is the science of teaching and learning. Social pedagogy refersto learning of social studies.

Social control : It is either a formal or informal measure for influencing the behaviour of thegroup members so as to conform with the norm of the group.

1.1.10 SUGGESTED READINGS

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1.1.11 : ASSIGNMENTS

Give a background idea about 'Educational Sociology' and 'Sociology of Education.'

Discuss the meaning and nature of Sociology of Education. Is there any basic difference between educational sociology and sociology of education? Give reasons for your answer.

Explain the relationship between sociology and education.

What is socialization in the context of education? Narrate the agencies of socialization.

Is education a social subsystem? If so, give your own comments.

Critically analyse the social character of education in relation to society and educational system.

Block – 2
EDUCATION AND COMMUNITY

Unit - 1

School and Community

Unit - 2

Different kinds of Changes in Indian Society

CONTENT STRUCTURE

1.2.1 : Introduction

1.2.2 : Objectives

1.2.3 : Concept of Community

1.2.4 : Concept of School

1.2.5 : Relation between School and Community

1.2.6 : Different Kinds of Social Changes occurred in India

1.2.6.1 : Sanskritization

1.2.6.2 : Westernization

1.2.6.3 : Modernization

1.2.6.4 : Secularization

1.2.6.5 : Impact of Social Changes on Education

1.2.7 : Sociometric Study in Formal Groups

1.2.7.1 : Introduction

1.2.7.2 : Meaning of formal group

1.2.7.3 : The Sociometry of Formal (Classroom) Group

1.2.7.4 : Meaning of Sociometric Test

1.2.7.5 : Use of Sociometric Test

1.2.8 : Let Us Sum Up

1.2.9 : Suggested Readings

1.2.10 : Assignments.

2.1 : INTRODUCTION

The school and community are two active agencies of education and both of these have great responsibility towards education. There is a close relation between school and community. James B. Conant says, "The nature of community largely determines what goes on in the school. The community and the school are inseparable." The character of the community significantly determines "what goesin the school. The significance of school community relationship has to be acknowledged by all. The Kothari Commission advocates "community living" in schools and participation by students in community development. This Unit will present you with an understanding about school-community relationship taking into account that a school is a sub-system of community. Moreover, you will get some acquaintance with a new concept — 'sociometry' — that helps you to learn the X-ray of classroom group structure based on patterns of relationship that exist between and among pupils.

2.2 : OBJECTIVES

After careful study of the Block the learner will be able to :

1. Define the term school and community.
2. Establish relationship between school and community.
3. Explain the meaning of Sanskritization, westernization, modernization and secularization.
4. Discuss the impact of social changes occurred in India on education.
5. Understand the meaning use and importance of sociometric test.

EDC – 03

EDUCATIONAL SOCIOLOGY - 1

Block – 2

Education and Community

Unit – 1

School and Community

2.3 : CONCEPT OF COMMUNITY

The community is an important informal and active agency of education. The word community combines two words — 'com' and 'Munis' : 'com' signifies togetherness and 'Munis' indicates to serve. Thus, the word community means 'to serve together'. Generally, community indicates a group of people living together on a geographical piece of land having common ways of working and common ideals to achieve. A community may be big or small in size. The size of the community is related to the cultural, economic and political commonness of its members. In this sense, a village, a town, a city, a nation and the whole world may be called a community, if the members feel a community sentiment, interest or concern. The basic criterion of community — then, is that all of one's social relationships may be found within it. However, it may not be self-sufficient.

To make the meaning of community more clear, some definitions are given below :

> "A community may be thought of as the total organisation of social life within a limited area." — Ogburn &Nimkoff
>
> "A community is the smallest territorial group that can embrace all aspects of social life." — K. Davis
>
> "By community is to be understood a group of social beings living a common life

including all the infinite variety and complexity of relations which result from common life or constitute it." — Ginsberg

"Community possesses a distinctive territorial character. It implies a common soil as well as a shared way of life." — MacIver and Page. Further, they state : "A community then an area of social living marked by some degree of social coherence."

It is with this concept that these authors have characterised "locality and community sentiment" as the twin bases of community. But a community is never static. It undergoes continuous changes from an earlier state to an emerging state, especially in the contemporary Information Age.

Question :

Let Us Check Our Progress

1. Write in brief your understanding about 'Community'.

2.4 : CONCEPT OF SCHOOL

The school is the first direct, active and formal institution, in the life of a child in any civil society. It is considered as one of the most important agencies of education in modern society. The English term school has come from a Greek word "Skhole" meaning theoritical discussion during leisure time at a particular place. Gradually the term specially applied to the place only where discussion was held. Today, school stands for a specialised and formal agency set up by the society for imparting education to the rising generation. In the words of Cater Good : "School is an organised group of pupils pursuing defined studies of defined levels and receiving instruction from one or more teachers frequently with the additions of other employees such as principal, various supervisors of instruction and a stuff of maintenance workers usually housed in a simple building or a group of buildings." At present a school possesses the following characteristics — (a) a definite building (b) a well-defined curriculum (c) pupils (d) teachers (e) employees and (f) furniture, as its real components. But as an institution it is driven by some other invisible influencing components — ideology, policy, resources, administrative/managerial threads, etc.

The modern school has developed through different stages — mainly three — cosmic, domestic and institutionalised.

With the growth of civilization, knowledge explosion, introduction of labour division or specialization in the field of occupation experiences grew in written form. Home and other informal agencies of education were found inadequate to fulfil the educational need of the future generation. Thus arose the necessity of a formal agency of education called the school. Education of children became a specialised occupation of those persons who were highly learned and qualified for discharging this function efficiently. These person began to be known as teachers, and the agency through which the teacher imparted education to children came to be known as school. In recent time the school plays comprehensive and important role in modern society, though some critics consider it just a knowledgeshop and validity of knowledge is questioned. From the sociological point of view a school is a social institution which may be described as "the social structure and machinery through which human society organizes, directs and executes the multifarious activities required to satisfy human needs." The needs are defined by the larger community (society/nation) and school is accountable to the authority of the community for its actions and deeds. A school is expected to perform at least three classes of functions — conservative, progressive and creative/innovative.

Question :

Let Us Check Our Progress

1. Formulate three arguments indicating importance of school.

2.5 : RELATION BETWEEN SCHOOL AND COMMUNITY

From the sociological and historical points of view you have come to understand that a school is a social institution which implies that the social institution exists and functions in a social matrix of demand and supply as well as supply and demand thus, maintaining a harmonious co-existence and interdependence. Generally, according to our world view we can not think of a school without a

community (society) of individuals; nor we can think of a community (society) without a school, though some radical thinkers advocate for "de-schooling society" in order to vent their protests against 'banking' concept of school education and teacher-controlled instructional designs. We are perhaps not so radical, rather bit conformists or traditionalists and our prevailing

belief-systems direct us to cognize that school and community have reciprocal relationships, though these are dynamic in nature. We are going to explore such independence and mutual relationships in the next presentation.

INFLUENCE OF COMMUNITY ON SCHOOL

Community exerts diverse influence upon its school in the following ways.

1. Establishment of school : The community establishes various types of schools so that theculture of the community may be preserved, developed and transmitted to its children. Many communities establish their own communal school to train their children for the welfare and advancement of their community interests.

2. Formulation for aims and control on education : The community determines the aims ofeducation. It also supervises and guides the educational process followed in the schools established by it.

3. Provision of Universal education : The community determines the various stages ofeducation. At the same time, it strives to provide the nature and types of universal education for the children.

4. Construction of curriculum : For the purpose of achieving the aims of education, suitablecurriculum is constructed. Hence the community prepares framework for curriculum to be followed in the school for realization of goals what the community desires.

5. Provision of Vocational and Industrial education : In modern age, there is a great demandfor vocational and industrial education. Hence, the community establishes vocational, industrial and technical schools according to its needs as well as demands for human resources development.

6. Adult education : Community welfare and its development needs that adults should also beeducated. Thus, the community makes provision for adult continuing education also.

7. Finance of schools : To shoulder the responsibility of running the schools smoothly andefficiently arrangement of required finance is essential. The community makes necessary provision of finance for school building, furniture, salary of teachers and other facilities basically through educational planning and management.

8. Co-operation between citizens and school leaders : Close co-operation between citizens andleaders of schools is necessary. Hence, the community tries to maintain as much close co-operation as possible between the members of the managing committees and school teachers and also through other mechanisms.

9. Influence of ideals and traditions of community on schools : Each community has its ownideals, traditions and cultural values and the purpose of the opening schools is to transmit these ideals, traditions and values to the rising generation to keep them alive and growing to higher and higher levels.

10. Influence of the needs of community on schools : In the matter of the needs, problems,culture and religious beliefs of a community exerts powerful influence upon schools.

As the needs of a community change according to times, circumstances and situations, so also the curriculum and methods of teaching are changed to suit community changes.

11. Influence of evils and values of community on schools : A community has both the goodattributes as well as evil factors. Both the factors directly or indirectly influence the working of schools. The corruptions and evils prevalent in a community are bound to have their impact upon school life. On the other hand, the virtues and good values of a community purify school life in all its aspects and influence the attitudes, character and behaviour of teachers, students and all those persons who are associated with its activities.

12. Influence of Political ideology and set-up of community on school : The political set up ofa community directly influence the schools and their working very powerfully. In other words, political set up of a nation determines the educational set up of schools. Political set up may be of two types — (1) Totalitarian, and (2) Democratic. In a totalitarian set up, the political party or the dictator which monopolizes the governmental machinary, organizes schools according to its political ideology and tries to indoctrinate the minds of children accordingly. In other words, education is centralized. On the other hand, if the political set up of the community is democratic, education is decentralized and the aim of education in such set up is to make all individuals happy, healthy and prosperous and ensure civic freedom in various ways. School respects the individuality of a child and provides environment for his development to the fullest extent.

For example, Indian education systems have got Constitutional, structural, ideological and administrative frameworks from various documents formulated by the people of India through democratic mechanisms.

INFLUENCE OF SCHOOL ON COMMUNITY

School also influences community in many ways, some of which are :

1. Satisfying the needs of community : Each community has its own needs. The school bymoulding and transforming its activities tries to meet the needs of community in educational, vocational, political, social, economic and other spheres of life.

2. Solving problems of community : Each community has some problems which confront it fromtime to time. School identifies these with the efforts of the community and tries to find solutions to tide over the problems and conveys the new knowledge together with the conclusions of experiments as tentative solutions to all the problems of the community, which after tiding over the difficulties grows higher and higher.

3. Conservation and transmission of culture of community : Each community has its ownculture. By participating in the various activities and functions organized in the school, children easily understand and are able to practice, preserve, modify and transmit these cultural values to others. In this way, schools conserve and transmit culture from one generation to another generation.

4. Improving the standard of living of the community : The styles and standard of living ofindividuals determine the standard of living of a community. School improves these styles and standards of living which the whole community adopts gradually. But the rise of standard and life style is possible only when the economic growth keeps pace with them and school becomes effective.

5. Ensuring vocational and industrial progress of community : School powerfully influenceson the vocational and industrial efficiency of a community. More and more people become self-reliant and economically well off through school education and training of crafts or modern techniques of production. In short, vocational pursuits of a community are practised in schools and the feed-back promotes community welfare and prosperity.

6. Training of citizenship : Children of community receive education in schools. The philosophyof the school, its aims and curriculum influence children greatly to the

education of wholesome citizenship. More and more children receive this education and become useful citizens. The community is, thus, raised higher and higher towards development and greatness because of such dynamic citizens.

7. Reconstruction of community: Schools play an important role in the reformation andreconstruction of a community. It is because in the schools, there is open criticism of the blind beliefs, useless customs traditions and harmful doctrines prevalent in the community, and in the changed circumstances reconstruction is launched according to new aims ideals and values. In this way, school brings about the necessary reconstruction of a community.

8. Formulating the policy in State : In a democratic set up, a school is free to criticize andevaluate the policy of Government openly and thus, by the healthy criticism, it tries to improve the administration and change the policies to suit the welfare of the individuals and the state. Under the new laws, schools now send their representatives to the legislatures and parliament and thus, direct influence of schools is exerted on the community.

Finally, we can say that there is a closed relation between school and community. They are influenced by each other. They are complementary to each other.

9. Modifying the environment of community : Because of its smallness, a school is able to builda neat, wholesome, healthy and controlled environment. It sets an example for a community to follow and provides the same environment for all members of the community.

10. An institution of social change : This signifies the actual and the fundamental purposes ofeducation which is looked as an instrument of social / national / international changes for social leveling, empowerment and increment in Human Development Indices. Continuous knowledge creation, experimentation, innovations, etc. in the seats of learning cause or attempt to cause expected social changes.

Relationship between school and community (society) is very intimate but complicated. Systems analysts see that school is a sub-system of a larger systems — community (society). Therefore, their relationship is mutual, never unidirectional. About one hundred years ago John Dewey looked this relationship as a two-way traffic in between school and society. Prof. D. P. Chattopadhyay says, “Education should be so designed as to answer squarely the complex needs

of the individual persons situated in a developing social context.... The basic aim of the new education policy should be to transform our present society into a learning society." Our Constitution envisages a society based on "justice, social, economic and political equality of status and of opportunity" and the most effective tool for such social transformation is education as it is held, the destiny of India is shaped in her classrooms. Hopefully, you as a learner are quite capable to reflect on other aspects of the reciprocal relationship between school and community (society).

Question :

Let Us Check Our Progress

1. Discuss the relationship between school and community.

EDC – 03

EDUCATIONAL SOCIOLOGY - 1

Block – 2

Education and Community

Unit – 2

Different kinds of Changes in Indian Society

2.6 : DIFFERENT KINDS OF SOCIAL CHANGES OCCURRED IN INDIA

Indian sociologists have observed three approaches to the study of nature and process of social change in India. These are — Philosophico-historical and metaphysical approach, Historical and political approach, and Social anthropological and sociological approach. The source for the philosophico-historical approach has been described by the Indian and the Western philosophers. Indian Philosophy and religion have proposed a philosophical theory of change characterized by cyclical rhythm in society. The foundation of this theory rests on the belief in Karma, Dharma and Moksha. Earlier this theory was much accepted but now it has almost been rejected because a systematic analysis is not possible to perform here. Social change caused by the historico-political approach is studied through records of Indian history. The limitation of this approach lies in the fact that all historical records may not be available or the evidence may not be reliable. The socio-anthropological approach was considered more systematic than the other two approaches. The method in this approach involves intensive field work or participant observation use of comparative method which includes study of different societies. The limitation of socio-anthropological approach is that it generalizes about macrocosm on the basis of the microcosm. The weaknesses in the socio-anthropological approach are eliminated by the sociological approach in which systematic empirical enquiries are conducted at macrocosmic level and generalization are made. Of late Yogendra Singh talks of five approaches in studying social change in India. These are : evolutionary approach, cultural approach

(Sanskritization and Westernization), structural approach, ideological approach and integration approach. In the cultural approach, change is studied by analyzing changing cultural elements of society. Following this approach, M. N. Srinivas studied social changes through the process of Sanskritization and Westernization.

2.6.1: SANSKRITISATION

Meaning of Sanskritization : M. N. Srinivas (1952) introduced the concept of Sanskritization asan process of social change in India, in his book Religion and Society among the Coorgs. It was developed by him in the analysis of the social and religious life of the Coorgs of South India. Upto the middle of the twentieth century, caste was studied either in terms of the Varna model or in terms of status based on notions of heredity and pollution and purity. But Srinivas analyzed the caste system in terms of upward mobility. He has maintained that the caste system is not a rigid system in which the position of each caste is fixed for all time. Movement has always been possible there. A low caste was able to rise, in a generation or two, to a higher position in the caste hierarchy by adopting the customs, rituals, beliefs, ideology and way of life of high caste people. This is process of moving of a low caste people upwards in the social structure. Srinivas termed this process as 'Sanskritization'.

He has defined 'Sanskritization' as a process by which the low castes take over the beliefs, rituals, style of ideology and other cultural traits of a high caste and in particular, a twice born (dwija caste) i.e., the Brahmin. In fact, Srinivas has broadened his definition of Sanskritization from time to time. Initially, he described it as the process of mobility of lower caste by adopting vegetarianism and teetotalism to move in the caste hierarchy in a generation or two (1962). Later on, he redefined it as "a process by which a low caste or a tribe or other group changes its customs, rituals ideology, and way of life in the direction of a high twice born caste" (1966). The second connotation of Sanskritization is, thus, much broader because first Srinivas talked of imitation of mere food habits, rituals and religious practices but later on he talked of imitation of ideologies too (which includes ideas of karma, dharma, pap, punya, moksha, etc.). By means of these changes in customs and ritual of the low caste people climb a higher position in the caste hierarchy. Sanskritization is not a blind and irrational imitation of the customs, practices habits, and values of higher caste especially Brahmins.

> The model in Sanskritization need not necessarily assume the Brahmanical model. It can be aKshatriya, Vaisya or Sudra model. The process of de-Sanskritization is also

possible, these are the dominant caste in the village. Srinivas used the concept of dominant caste in the essay 'The Social System of a Mysore Village' and later elaborated it in his 'The Dominant Caste in Rampura'. He defines a dominant caste as : "A caste may be said to be 'dominant' when it preponderates numerically over the other castes and when it also wields preponderant economic and political power. A large and powerful caste group can more easily be dominant if its position in the local caste hierarchy is not too low." Srinivas clarifies his concept in a later book "The Dominant Caste and other Essays". He says that numbers were quite important, sometime even Brahmins felt quite insecure if their numbers were small. When a caste possessed one attribute of dominance, there was a tendency for it to attract to itself other attributes. This applied particularly to the economic and political elements of dominance, that is when a caste had political power, it was able to attract to itself wealth particularly, in the form of land and when it had wealth, it was able to attract to itself political power. Actually, it was the dominant caste which provided the model for Sanskritization.

Studies of different areas, however, show that it operates differently in different parts of the country. In those areas where a highly Sanskritized caste was dominant, the culture of entire region underwent a certain amount of Sanskritization. In the region where the non-Sanskritic castes were dominant, it was their influence that was stronger. This can be termed the process of de-Sanskritization. There were other regional variations too.

Sanskritization is generally the process of cultural and social mobility that takes place within Hindu social system though Srinivas argued that it was visible even in sects and religious groups outside Hinduism. It is an endogenous source of social change. From a social psychological point of view Sanskritization is a culturally specific case of the human motivation towards anticipatory socialization to the culture of a higher group in the hope of gaining its status in future. It is culture specific because it prevails only in the context of caste. Thus, the specific sense of Sanskritization lies in the historicity of its meaning based on the Hindu tradition. In this respect Sanskritization is a unique historical expression of the general process of acculturation as a means of vertical mobility of groups.

Sanskritization suggests a process whereby people want to improve their status through adoption of names and customs of culturally high placed group. The reference model is usually financially better of. In both, the aspiration or desire to be like the higher placed group occurs only when people become wealthier.

In the case of Sanskritization what is claimed is only a positional shift within the Varna. It only reinforces the immutable Varna hierarchy rather than dislodge it or modify it. Basically, Sanskritization deals with cultural change and has no scope for systematic explanation of change in the social structure. Sanskritization is not a process by which structural changes in the Hindu-society can become possible. It brings about changes only in the cultural aspects. Thus, we see that Sanskritization is a process of cultural change which is taking place in a situation of cultural closure with referenced group.

Sanskritization as a concept has been criticized from different angles —

a. Sanskritization fails to account for many aspects of cultural changes in past and contemporary India. It neglects the non-sanskritic traditions.

b. There have been other processes of cultural change also. Many groups tried to improve their status not by imitating the higher castes but by breaking out of the hierarchy like conversion to Christianity, Islam or Buddhism.

c. It leads to no structural change but only positional change of some individual.

d. It has been pointed out that the ideology of Sanskritization accepts the ways of the upper caste as — superior and that of the 'lower caste' as inferior.

e. 'Sanskritization' seems to justify a model that rests on inequality and exclusion.

There is an indirect relationship between Sanskritisation and Modernisation. Sanskritisation is basically a form of modernisation because it is born out of the desire to improve the group status in the economic, cultural, political and perhaps in educational sphere. However, Sanskritisation originally brought forward by M. N. Srinivas may not be sufficient to explain the changes which are occurring at the cultural fabrics in India.

Question :

Let Us Check Our Progress

What do you mean by Sanskritization ?

What is its importance from the perspective of Educational Sociology?

2.6.2 : WESTERNIZATION

The concept of Westernization was also developed by M. N. Srinivas in 1952 who defines Westernization as "the changes brought about in Indian society and culture as a result of over 150 years of British rule, the term subsuming change occurring at different level ..... technology, ideology, and values." This concept refers to "the changes in technology, institution, ideology and values of a non-Western society as a result of cultural contact with the Western society for a long period". (Srinivas 1962). In the context of Indian society, he maintains that the technological changes, establishment of educational institution, rise of nationalism and new political culture, etc. may all be described as the by products of Westernization or of the British rule of two hundred years in India. Thus, by Westernization he primarily meant the British impact on the Indian society and life.

The important features of Westernization are —

1. Emphasis is on technology and rationalism.
2. Social changes occurring in modern India in terms of Westernization are primarily in cultural and not in structural term.
3. This process is not retarded by the process of Sanskritization, but to some extent, it is accelerated. Srinivas maintains that it is not necessary for Sanskritization — occurring prior to Westernization (1985); the two processes are linked each other. It may not be possible to understand one without the other.
4. Westernization does involve the imitation of external forms of culture. It does not necessarily mean that people adopt modern values of democracy and equality.

The form and pace of Westernization of India varied from region to region and from one section of population to another. There were different kinds of Westernization. One group of people become westernized in their dress, diet, manners, speech, sports and in the gadgets they use while another absorb Western Science, knowledge and literature, remaining relatively free from Westernization in externals. In the 19th Century Bengal, a westernized sub-cultural pattern was emerged through a minority section of Indians. Some Indian intellectuals not only adopted many cognitive patterns or ways of thinking and styles of life, but supported its expansion. Many of the early 19th Century reformers were of this kind. There were, therefore small sections of people who adopted Western life style or were affected by Western ways of thinking. Apart from

this there has been also the general spread of Western cultural traits, such as, the use of new technology, dress, food and changes in the habits and styles of people in general. As for example, Brahmins accepted the dress and appearance, sending their children to Westernized schools, using gadgets like radio, car, etc., but they do not accept the British diet, dancing, hunting, and freedom from pollution. Apart from ways of life and thinking, the West influencedIndian art and literature. Style, technique, theme and thinking process of literary personalities and artists like Abanindra Nath Thakur, Ravi Verma, Bankim Chandra Chattopadhyay were shaped by Western, and indigenous tradition. Westernization did influence organization of educational institution, curriculum, methods of instruction, evaluation and promotion to higher classes, teacher training, timing of academic session, hour of schooling, etc. in India.

Srinivas prefers the term 'Westernization to modernization'. He considers the later term as subjective and the former term is more objective (1986). The so-called rationality of goals in modernization could not be taken for granted because human goals are based on value preferences. As such, rationality could only be predicted of the means and not of the ends of social action. Srinivas suggested that while 'lower castes' sought to be Sanskritized, upper castes sought to be Westernized. Here the two processes differ.

Question :

Let Us Check Our Progress

1. What is Westernization ?

2.6.3 : MODERNISATION

What is Modernization?

The word "modern" at once brings to one's mind a picture of something that is the exact opposite of ancient or traditional. "Modernisation" as such would seem to imply a process of breaking away from the old and the traditional. Modernisation implies a break from the part no doubt, but not a complete or wholesome rejection of every thing that has come down to a people or society in the course of its — evolution to the present. The term modernisation has been used more recently to denote the process of all round development — social economic, political and educational — of a society, at the base of which lies economic development. Modernisation has many dimensions. It may be perceived at society level, group level, or individual level. It also may

be perceived as economic — modernisation, political modernization, social modernization technological modernization, military modernization, administrative modernization and so forth. The concept has thus been employed in a diffused manner. The ambiguity and diffuseness of the concept of modernisation has resulted in identifying modernisation — with different forms of social change — Westernization, industrialization, progress, development, and so forth.

Sociologists have tried to define modernisation process from different angles —

> Myron Weiner (1966) explains it as : "The term modernisation is an elusive one. In the 19th and early 20th Centuries, 'modernisation' was generally used to refer to the growth of rationality and secularism and to a process by which men broke away from the constraints of tyrannical regimes as well as superstition. Today the term is often used simply as another word for economic growth or as a more palatable synonym for still another elusive concept 'Westernisation'. Because the term is so lossely used, it is tempting to drop it entirely and to speak more precisely of changes occurring in individual attitudes, in social behaviour, in economics, and in politics". Weiner points out that the earlier concepts embodied in modernization, viz, "the growth of rationality and secularism" are even today its major components; whereas freedom from "tyrannical regimes" and superstition" are the pre-conditions for societies wanting to modernise themselves.
>
> According to Gore (1982) modernisation is not a philosophy or a movement with a clearly articulated value system. It is a process of change. He maintains, the term modernisation, was used earlier to refer only to "change in economy" and its related effect on social values and social practises. It was described as a process that changed the society from primarily agricultural to primarily industrial economy. As a consequences of this change in economy, the society simultaneously underwent changes in values, beliefs and norms.
>
> Alatas has given a broader meaning of the term 'modernisation' and he describes it as "social change involving the elements of science and technology". It involves changes based on rationality. According to Alatas (1972), modernisation is a process by which modern scientific knowledge is introduced in the society with the ultimate purpose of achieving a better and more satisfactory life in the broadest sense of the term, as accepted by the society concerned.
>
> In a much more concise manner Dube defines modernisation as — "essentially —

a process, a movement from traditions or quasi-traditional order to certain desired types of technology and associated form of social structure, value-orientations, motivations and norms".

'Modernity' assumes that (a) local ties and parochial perspectives give way to universal commitments and cosmopolitan attitudes; (b) that the truth of utility, calculation, and science take precedence over those of the emotions, the sacred, and the non-rational; (c) that the individual rather than the group be the primary, unit of society and politics; that the associations in which men live and work be based on choice not birth; (e) that mastery rather than fatalism orient their attitude toward the material and human environment; that identity be chosen and achieved, not ascribed and affirmed; (g) that work be separated from family, residence, and community in bureaucratic organisation ..... . (Rudolph and Rudolph, 1967). It means that in modern society people are influenced not just by local but universal contexts.

The changes that occur with the transition from a traditional to a modern society, according to James O'Conell (1965) are :

- Economic growth increases and it becomes self-sustaining.
- Occupations become more skilled and specialised.
- Number of people engaged in primary occupations reduces while that of people engaged in secondary and tertiary occupations increases.
- Age-old agricultural implements and methods give way to use of tractors, fertilizers, etc.
- Barter system is replaced by the money system.
- An interdependence comes into being between communities that previously were separated from and independent of one another.
- The process of urbanization increases.
- Ascriptive status gives way to achieved status.
- Equality gradually replaces hierarchy.
- Hereditary leadership gives way to elected leadership.
- With better medical care and improved health, the longevity of life or servival rate increases.

- Geographical distances are shortened with the use of new methods of transport and communication.

Some Characteristics of Modernization

Broadly speaking, modernization is characterized by :

- a temper of science
- reason and rationalism
- secularism
- high aspirations and achievement orientation
- overall transformation of attitudes, norms and values
- creation of new functional institutions
- investment in human resources
- a growth-oriented economy
- an open society
- a mobile personality

Dube has drawn up a list of 12 social-psychological attributes (characteristics) of Modernity which are :

a. Empathy ;

b. Mobility ;

c. High Participation ;

d. Interest articulation ;

e. Institutionalised political competition ;

f. Interest aggregation ;

g. Achievement orientation ;

h. Rational ends-means calculation ;

i. New attitudes to wealth, work, savings and risk-taking;

j. Faith in the desirability and possibility of change ;

k. Economic, social and political discipline ; and

l. Capacity to put off immediate and short-run satisfactions for higher satisfactions in the long run.

Thus, modernization is a continuous process of change witnessed by our society. This is apparent in our educational systems too. It opposes prejudices, closeness of mind flexibility but sometimes it may be harmful if it becomes devoid of rationality and conscience.

Question :

Let Us Check Our Progress :

Define the term 'modernisation'.

State the characteristics of modernisation process.

2.6.4 : SECULARISATION

In the modern West, secularisation refers to a process of decline in the influence of religion. It has been an assumption of all theorists of modernisation that modern societies become increasingly secular. Indicators of secularisation refers to levels of involvement with religious organisations (such as rates of church attendance), the social and material influence of religious organisations, and the degree to which people hold religious beliefs. Recent years have, however, seen an unprecedented growth of religious consciousness and conflicts world over.

The word 'secular' means "pertaining to the present world or to things not spiritual", and as such, it is likely to be taken as equated with "material" which is the opposite of "spiritual". By the same logic, "secularism" is likely to be taken as synonymous with "material", and opposed to anything spiritual or religious. This is the narrow interpretation of secularisation.

Secularism, more correctly, means "the belief that the State, morals education, etc. should be independent or religion". This "independence from religion" has to be understood clearly in the various contexts. In the case of the State, secularism means that there will be no State religion, and that the State will not give preference to a particular religion, nor will law, politics and political or social ethics be governed by any religious creed or dogma.

As regards "morals", independence from religion would mean — (i) that moral need not necessarily derive from a religion, and more importantly, (ii) that one must abandon in public application, "the dogma of a necessary connection between religions orthodoxy and morality".

The implication is that a secular State and a secular school can teach morals or morality without subscribing any religion. Such practice implies the theoretical belief that "morals have a naturalistic origin in the folkways and mores of the community, and as such "the social and moral and one and the same".

This brings us close to the third point, namely — the meaning of "independence from religion" so far as education in concerned. The obvious implication is that education, its aims, content and practices will not be welded to any particular religion, and that no sectarian religion will be taught in institutions, supported by the State. To any one not willing to take such instruction, there can be no compulsion in non-State supported private schools too.

Secularism, is not an anti-religious or irreligious policy or philosophy. Nor does it mean atheism. A secular person can be a believer or non-believer in God. Secularism in fact means a more positive and tolerant attitude towards religion. It means that devotees of each and all religions respect the religions convictions of others, and act. upon the principle that what one accepts as of "ultimate validity" for oneself need have no more than "relative or suggestive value" for another.

Secularism, thus, emerges as a natural corollary of the democratic philosophy. Liberty, equality and fraternity granted to people in other spheres of life must naturally extend also to religions. In all democratic countries with the multireligious population, secularism becomes the natural concomitant of democracy — in fact the only logical approach to religion.

In terms of expediency, secularism provides the only modus operandi and modus vivendi for a heterogeneous people. Hence, it has rightly been looked upon as — "a logic designed to further community of thought and action within a heterogeneous people, a logic dedicated to a fair rearing of all points of view with special privileges accorded to none; a method that respects the claims of all faiths without exception".

In a country of many and varied religions, rich religions heritage and democratic way of life, as India is, secularism, therefore, does not imply a non-religions or anti-religions policy, but a policy of "respect for all religions" and inculcation of common values.

Secularism in Indian context has special meaning. Justice DurgadasBasu writes "India under the Constitution, is a 'secular State' i.e., a State which observes an attitude of neutrality and impartiality towards all religions. A secular State is founded on the idea that the State is concerned with the relations between man and man not with the relation between man and God which is a matter of individual conscience. The attitude of impartiality towards all religions is secured by the Constitution by several provisions [Articles 25-28]" : such as (1) there shall be no "State religion" in India. The State will neither establish a religion of its own nor confer any special patronage upon any particular religion. (2) Secondly, every person is guaranteed the freedom of conscience and the freedom to profess practiceand propagate his own religion subject to some restrictions imposed by the State in the interests of public order, morality and health, etc.....But sometimes religious fanatics merges in the national life and reflect even in school curriculum...Indian polity should foster the spirit of secularism among the citizens very carefully...

Question :

Let Us Check Our Progress

1. What do you mean by Secularisation ?

2.7 : SOCIO-METRIC STUDY IN FORMAL GROUPS

2.7.1 : INTRODUCTION

An individual needs a group to live in. A child is a part of a family neighbourhood, classroom, club, library, etc. He is a member of various groups. Classroom functions as a group. In educational programme, the classroom group has a special place of importance because the success of teaching and learning is strongly influenced by interpersonal relationship within group. Educational workers, particularly teachers have to deal with group. Most teacher realised that individuals development can be effected adversely or favourably by his position in the group. The teacher ensuring classroom learning can be most productive if the teacher has necessary knowledge of group functioning.

2.7.2 : MEANING OF FORMAL GROUP

A group has been defined in various ways. The various definitions stress the different aspects of the group. A good functional definition is given by MuzafferSherif as follows :

A group is a social unit which consists of a number of individuals who stand in (more or less) definite status and role relationships to one another and which possesses a set of values or norms of its own regulating the behaviour of individual members, at least in matters of consequence to the group".

Maclver and Page put "by group we mean any collection of human beings who are brought into social relationship with one another".

Then a group has a definite structure consisting of the status and role relations among the different members ; it has a set of norms (or standards of behaviour) for the members. A group has also some basis for its formation — some goals which are accepted by different members of the group.

According to Getzels and Thelen all working groups have the following factors in common : a goal, participants, leadership and relations to other groups and institutions.

Sociologists classify groups in numerous ways. In one way, a group may be either formal or informal. There are other classifications of group too. A formal group is created by persons for serving some valued functions or services and it functions according to some explicitly stated norms, while an informal group has neither such explicit objectives nor norms known to all group members. Size of the group is not a condition. Classroom group, workgroup, etc. are common formal group and family is the basic informal group.

2.7.3 : THE SOCIOMETRY OF FORMAL (CLASSROOM) GROUP

We have understood that a formal group has explicit common goal and the members of the group presumably know the goal and work together for attaining it. This implies that a sense of togetherness or a sense of cohesiveness in the workspace and the members relate each other within the group in various combinations. At this point, we may conceive a net work of social as well as functional relationship to prevail within the group for attaining group goal. From your common experience you have perhaps observed that if that relationship becomes properly

operational within the group and is focused to the group goal there exits a harmonious relational structure and every one works together within the group and enjoy working together in a climate of cohesiveness. On the contray, if within a group that cohesiveness does not prevail the functional relations within the group will face constraints and hindrances in joing hands together in attaining group goal; here members work but ultimaly experience conflicts, the leader faces difficulties to resolve conflicts and the members feel a sense of alienation. Consequently, some pathological symptoms emerge in the group. The difference between these extreme conditions within a formal group, in fact in a small group, lies on the difference of a special feature of the network of relationships that exist and work in relational structure or net work within the group.

Sociologists and social psychologists have attempted to study a formal group along this directions and used a method which is termed as sociometry and their ultimate purpose have been how to inject changes within the social network of relations within a group so that it can function harmoniously for attaining common goal and thereby faces a minimum extent of hindrances put by some of its members. In this way a group may be either healthy or if not so, there may remain a pathological symptom in group's social relational network Social-psychologists also consider that those relational networksare not static, rather dynamic in nature; it is in a changing state. Moreover, those dynamic relations can be modified through some group behavioural engineering, obviously by the group leader in association with group members' actions towards attaining group goal at any state. Naturally, the leader has to understand the relational structural network first when s/he likes to change the group relational structure at a desirable state for which the leader requires to identify the existing dynamic relations of the group from a diagnostic angle. Some of its theoretical aspects spin in group dynamics and group process fathered by Kurt Lewin and his associates what you have already learnt in Paper-II.

Sociometry is a quantitative method for measuring social relationships existing in a group fromdiagnostic or interventive point of view. It was developed by psychotherapist Jacob L. Moreno in his studies of the relationship between social structures and psychological well-being. The word *sociometry* comes from the Latin "socius", meaning social and the Latin "metrum", meaning measure; these roots imply, sociometry is a way of measuring the degree of relatedness among people. Measurement of relatedness can be useful not only in the assessment of behaviour within groups, but also for interventions to bring about positive change and for determining the extent of change is needed... In a formal group like work/classroom group, sociometry can be

a powerful tool for reducing conflict and improving communication because it allows the group to see itself objectively and to analyze its own dynamics. It is also a powerful tool for assessing dynamics and development in groups needed for therapy or training.

Moreno defined sociometry as "the inquiry into the evolution and organization of groups and the position of individuals within them." He goes on to write "As the ...science of group organization -it attacks the problem not from the outer structure of the group, the group surface, but from the inner structure". Hence, sociometric explorations reveal the **hidden structures** that give a group its form: the alliances, the subgroups, the hidden beliefs, the forbidden agenda, the ideological agreements, the 'stars' of the show. Or sociometry is a methodology for tracking the energy vectors of interpersonal relationships in a group. It shows the patterns of how individuals associate with each other whenacting as a group toward a specified end or goal... Moreno himself explained sociometry as "the mathematical study of psychological properties of populations, the experimental technique of and the results obtained by application of quantitative methods" (Moreno, 1953, pp. 15-16).

Sociometry is based on the sociological assumptions that people make choices in interpersonal relationships as human beings are social beings. Whenever people gather, they make choices — where to sit or stand; choices about who is perceived as friendly and who not, who is central to the group, who is rejected, who is isolated. As Moreno says, "Choices are fundamental facts in all ongoing human relations, choices of people and choices of things. It is immaterial whether the motivations are known to the chooser or not; it is immaterial whether [the choices] are inarticulate or highly expressive, whether rational or irrational. They do not require any special justification as long as they are spontaneous and true to the self of the chooser. They are facts of the first existential order." (Moreno, 1953, p. 720). Thus, he conveys that human beings are choice makers.

The choices are always made on some basis or criterion. The criterion may be subjective, such as an intuitive feeling of liking or disliking a person on first impression. The criterion may be more objective and conscious, such as knowing that a person does or does not have certain skills needed for the group task. There are some principles of criterion selection which may be stated as :

The criterion should be as simply stated and as straightforward as possible.

The respondents should have some actual experience in reference to the criterion.

The criterion should be specific rather than general or vague.

When possible the criterion should be actual rather than hypothetical.

As a general rule, questions should be future oriented, imply how the results are to be used, and specify the boundaries of the group. And last, but not the least, the criteria should be designed to keep the level of risk for the group appropriate to the group's cohesion and stage of development.

Sociometry has two main branches: research sociometry, and applied sociometry. *Researchsociometry* is action research with groups exploring the socio-emotional networks of relationships usingspecified criteria e.g. Who in this group do you want to sit beside you at work? Sometimes research sociometry is concerned with relational patterns in small (individual and small group) and larger populations, such as organizations and neighborhoods. *Applied sociometrists* utilize a range of methods to assist people and groups, review, expand and develop their existing psycho-social networks of relationships. In our case, applied sociometry is more useful as we are more concened about building classrom group as interactive as possible and the pupils feel sense of group we-feeling for the realization of the goal of instruction in association with the teacher.

2.7.4 : SOCIOMETRIC TESTS : SOCIOGRAM AND SOCIOMATRIX

One of Moreno's innovations in sociometry was the development of the **sociogram**, a systematic method for graphically representing individuals as points/nodes and the relationships between them as lines/arcs. When members of a group are asked to choose others in the group based on specific criteria, everyone in the group can make choices and describe why the choices were made. From these choices a description emerges of the networks inside the group. A drawing, like a map, or graphic of those networks is called a *sociogram*. The data for the sociogram may also be displayed as a table or matrix of each person's choices. Such a table is called a *sociomatrix*. Then the latter is the base or data sheet for the former. You have already been acquainted with these two techniques in Units 2.4.3.6.1 & 2.4.3.6.2 of Module 4 (Paper-II).

However, you should keep in your mind that the typical process for a sociometric intervention in a group/organization follows these basic steps: (1) Identify the group to be studied, (2) Develop the criterion, (3) Establish rapport / warm-up, (4) Gather sociometric data, (5) Analyze and interpret data,

Feed back data, either: (a) to individuals, prior to group meeting, or (b) in a group setting, Develop and implement action plans, (8) Post-test (optional).

Constructing a sociomatrix for a small group with 5-6 members is a simple task, but when the number of members in a group is more than about five or six, the clerical work and calculations become quite tedious and open to error. Fortunately, now personal computers and appropriate Software may be employed for preparing sociomatrix very easily. The software produces not only the sociomatrix itself but also several useful group and individual reports. GraphPlot is an available sociometry software. However; other approaches to study group structure have now been developed, such as Social Network Analysis, or Sociomapping.

2.7.5 : USE OF SOCIOMETRIC TEST

Briefly, these may be put as :

a. The sociometric test reveals structure of a group as a whole.

b. It can be used for the research purposes as well. It shows whether the children who work hard at school are highly accepted by their new companions or not.

c. The most practical use of sociometric test is to help organise and arrange actual classroom group.

d. The value of this technique is useful for understanding educational projects and for making necessary seating arrangements in order to create a favourable classroom climate.

e. One of the practical use of sociometry is in individual guidance when the individual is a member of the group. It is then a tool for group pathology.

f. "It helps in understanding the group dynamics. It help the investigator in making a clinical or mental health appraisal and can provide clues which help him in social living of the child."

g. By administering a sociometric test teachers can identify who is popular, isolate, neglectee etc. and attempts to ensure and sustain positive classroom climate.

Question :

Let Us Check Our Progress

Explain the term 'Sociometry'.

Mention three uses of sociometric test.

2.7.5 LET US SUM UP

There is an intimate relationship between school and community. The community influences schools in various ways. It establishes schools formulates the aims and objectives of education, determines curriculam and schools appropriate methodology. In fact, the total educative process is controlled and managed by it. School also contributes a lot for the welfare of the community. Various social changes have accured in India. These are mainly — Sanskritization, Westernisation, Modernisation and Secularization. They have brought a lot of changes in the sphere of education. We have to work in group. In regular educational programme the class room group has a special place of importance. So study of group relationship is very essential. Group relationship is studied through sociometric techniques. With the help of this technique we can discover popular, isolate, neglectee, rejectee etc. We can also find out sociometric status of the students, and nature of relationship among students. Sociometric test help to organised and arrange actual class room climate. The value of this technique is useful for understanding education projects and for making necessary sitting arrangement.

2.9 SUGGESTED READING

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2.9 ASSIGNMENT

a. Discuss the relationship between school and community.

b. Explain the meaning of 'Sanskritization' and 'Modernization'.

c. Discuss the use and importance of sociometric test.

d. Critically analyse the concepts of modernization and secularization in context of the present-day Indian social orders.

e. How can you bring school more closer to community? Give suggestions.

f. Estimate the relative influences of Sanskritization, Westernization and Modernization on the contemporary Indian education systems.

Block – 3
EDUCATION AND CULTURE

Unit - 1

Education and Culture

Unit - 2

Cultural Change & Lag

CONTENT STRUCTURE

3.1 : Introduction

3.2 : Objectives

3.3 : Meaning and nature of Culture

3.3.1 : Role of Education in Culture Context

3.1.4.1 : Education and sub-culture

3.1.4.2 : Transmission and preservation of culture

3.1.4.3 : Education and development of new social order

3.1.4.4 : Role of preservation of life

3.1.5 : Cultural Determinants of Education

3.1.5.1 : Recognition of culture in education

3.1.5.2 : Education and language

3.1.5.3 : Art aesthetics, religion, ethics and philosophy

3.1.5.4 : Folkways and mores

3.1.5.5 : Attitudes, habits, ideas and values

3.1.6 : Cultural Change and lag

3.1.6.1: Meaning of cultural change

3.1.6.2: Characteristics of cultural change

3.1.6.3 : Factors of cultural change

3.1.6.4 : Cultural lag

3.1.7 : Let Us Sum Up

3.1.8 : Glossary

3.1.9 : Suggested Readings

3.1.10 : Assignments

3.1 : INTRODUCTION

The cultural environment is the proper place where children are born, brought up and schooled in socially directed aims and objectives. The cultural environment moulds, shapes, guides and controls the children in terms of the goal set by the society. Culture represents the ways of life, and education is a means to that end. It is, obvious, therefore, that schooling and educational systems are organised for enrichment of cultural norms, values and techniques befitting the societal needs. The personality of the child is developed within the domain of culture. When new culture emerges that modifies the ways of life to a considerable extent. However, the changing culture faces a number of obstacles ; and that lead to culture conflict. Again, the material culture may go ahead of non-material culture and the latter lags behind the former. As a matter of fact, this proposition is not endorsed by a good number of sociologists of eminence.

3.2 : OBJECTIVES

This is very importance in educational sociology. It has the following objectives in view:

a. This Unit intends to clarify the meaning, concept and nature of culture, so as, to determine the role of education in the cultural perspective.

b. To arrive at this end, the present Unit purports to examine the cultural determinants of education.

c. To analyse the factors that lead to cultural change and also the factors resisting this change, especially in Indian context.

d. Finally, it intends to examine cultural lag, in the context of cultural change.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 3
Education and Culture

Unit – 1
Education and Culture

3.3 : DEFINITION MEANING AND CONCEPT OF CULTURE

(a) Popular Meaning of Culture :

The popular meaning of culture refers to music, dance, art, literature, philosophy and finer things which illumine human excellence. It is to be noted that these are all some parts of culture, but not the whole of it.

(b) Anthropological Meaning of Culture :

Anthropologically, culture represents the whole ways of life which are acquired, nurished, preserved and transmitted by human groups for its members. It is commonly said that culture makes a man. It is also claimed, "Our culture is what we are". In other words, an individual is a product of his culture. The other name of anthropological view is 'Descriptive Culture'. Descriptively, culture is used in a very wide sense to cover the entire field of human life ; But this view does not totally share the definition of E. B. Taylor, one of early anthropologists, who understand by 'Culture' as, "That complex whole which includes knowledge, belief, arts, morals, law, custom and any other capabilities and habits acquiredby man as a member of society." From this definition of Taylor, it follows that culture is more immeterial and less utilitarian. Alfred Weber and R. M. Maclver also suggests similar views. "Culture", according to Maclner, "is the expression of our nature in our modes of living and of thinking, in our everyday intercourse, in art, in literature, in religion, in recreations and enjoyment." According to

Weber, non-material culture is unique ; because it is incommunicable and bound to time and place ; but material culture is communicable ; and hence, not limited to time and place. In the opinion of Sutherland and Woodward, "material elements that are made and used in accordance with socially inherited tradition," are "culture objects". However, culture is "an immaterial phenomenon only, a matter of thoughts and means and habits, and not of visible and touchable material things and objects.

On the other hand, modern anthropologists identify culture with the whole way of life. Malinowski maintains, that culture is envisaged, "as the handi work of man and as the medium through which he achieves his end." To some, culture is a distinctive human trait. The root of culture is — ingrained in the invention and use of tools and implements, artificial instruments and the like. Ogburn views, culture from both the directions as material and non-material. A.K.C. Ottaway maintains that, "culture may be called the social heredity."

....."The creations of man, whether building, works of art, tools or machines are all parts of the material culture. In terms of Roucek and Warren, culture is, "the way of living which any society develops to meet its fundamental needs for survival, perpetuation of the species, and the ordering of social experience. It is the accumulation of material objects, patterns of social organization, learned modes of behaviour, knowledge, beliefs, and all other activities which are developed in human association." Descriptive Culture is, therefore, the identity of the total way of life.

(c) Normative View of Culture :

In sharp contrast to descriptive culture which takes into account the whole way of life, normative view of culture is selective.

Harold Entwistle, thus, remarks, "Descriptively a Culture may be conceived as the total way of life." However, normative culture does not include the whole aspects of descriptive culture in its purview. It is selective. It evaluates the sum-total aspects of the ways of life and selects those which lead to perfection. It is, for this reason, the normative culture is also known as evaluative view of culture. It evaluates the total culture and eliminates the disfunctional aspects from the totality. According to Harold Entwistle descriptive culture is of less importance to education. The total way of cultural life cannot be accepted for educational purposes. Drinking, gambling, gossiping and idly wasting away of time is not encouraged in education. It is an acceptable fact that the

total descriptive view of culture, and all its activities and performances may not have educative value. Dogmas, faith and prejudice are, now-a-days avoided in education. The primitive ways of life style may not be suitable for educational purposes. Normatively, educationists only choose those cultural values and practices that are conducive to goal oriented learning situation. "Hence, for educational purposes when proper allowance has been made for the constraints which a total culture may impose upon the work of the school, only certain dimensions of the culture are appropriate." To Entwistle, the 'normative', notion of culture is valuable for educational purposes ; because, "educationists are apt to characterize a culture in terms of a limited range of skills, and forms of knowledge, variously labelled" "wholesome activities, culturally valuable activities, 'academic discipline' " and so on. If we judge culture normatively, its substantive values, in a specific situation will be relative to the specific society, group or individual, in question.

Naturally, it becomes difficult to define — "the best culture." What is best for one group may not be appropriate for other groups. So, particular needs to be examined in the context of a rigion, and also in the context of its racial and caste group or, social classes and the like. So, in the context of a national group, the common aspects of educationally valued and nationally acceptable cultural practices including the social utility of it, represent the normative culture. It is for this reason, culture requires proper evaluation in the perspective of national culture of reference. The task is, too difficult, but it is of utmost importance for education and social change.

Question :

Let Us Check Our Progress

What is popular meaning of culture ?

How far the definition of culture given by E. B. Taylor is acceptable at present days?

What type of cultural view is acceptable in education ? Give illustrations.

3.3.1 NATURE OF CULTURE

The nature of culture is difficult to express in general terms, since, culture differs from region to region, country to country and continent to continent. As culture represents the total ways of

doing and thinking of a group, the culture of one group, it is likely, would differ from the other. The oriental culture, as we know, is not similar to the occidental one. There are differences in ways of life including, food habits, dresses, building patterns etc., on one hand, and, on the other, customs, traditions, manners in family relation, mode of worship and rituals and hundreds of other ways of doing and thinking and believing.

In the second place, culture is not static. It is rather in a state of flux. It is emerging, evolving, developing, receding and constantly changing in a new direction. These changes may be incidental or directed. It may or may not be unilinear. Some changes may be cyclical, and other may be pendular. Again, in some period of history culture of a group may reach at a climax point, and in some other periods culture of a group may become a historical record or symbols of the past as with the case of culture of Harappa and Mohenjodaro ! In the third place, culture patterns, as we understand, are an accumulation of remote past ; and are wide and complex representation of the present ways of thinking and doing. If we think of the sahpe of it, then it would be narrow at the base and wide at the vertex (top), which is just reverse to the shape of a geomatrical cone. At the early stage human groups adopted the ways of doing and thinking in a very humble way without having, least of their customs and traditions which, at a later date, culminated, by process of culture transmission and accumulation into overlapping and complicated systems of culture. In this sense, culture was inherited by all the human groups over the world. The art and relics of primitive human culture came to exist long before the dawn of civilization. Human culture spreaded in varieties of forms and patterns in different parts of the globe, without exception to Europe, Asia, America or Africa. The tools and weapons for protection of the group, and hunting animals, the cave or shelter for protection against sun and rain, and the other creations of the primitive men also, were identities of their culture. The Monesterian culture was the earliest human culture of old stone age. The Weanderthal man developed a culture of their own ; and they had their language ; they had a religion and a family. The division of labour between male and female prevailed in all premitive culture. The climate of Greenland was too cold, so some sort of clothing might be used by them. In the Monesterian culture the idea of kinship and village life may or may not develop. However, the Cro-Magnon man developed social heritage at a rapid rate and this culture was developed ten to fifteen thousand years age. The material culture of Eskimos was similar to Cro-magnon culture. They learnt the art of making houses with skins of animals. It is obvious, therefore, that culture developed through ages and stages of the growth of human capabilities. It is an ongoing process of human achievement. There is an unceasing inter-play between the individual and his

culture from cradle to grave. Culture, is therefore, a matter of heritage and a striving for more accumulation of it ; it is a treasury of acquired behaviour.

In the fourth place, the nature of culture now-a-days is viewed from two directions. From materal point of view the product of culture is touchable, communicable and marketable while many of the cultural items are not touchable and marketable. For instance, values, traditions, laws, custom, religion, morality and the like, are not of material object and are not touchable and marketable ordinarily. These are representatives of non-material culture. So culture may expressed in terms of techniques and values. One identifies the material aspect and other the non-material aspect of culture.

In the fifth place, culture is not a substitute for civilization. Culture represents the sum-total of human achievement. While, civilization characterizes the civic social organizations like township or cities. Civilization is relatively mechanical and external. Mathew Arnold defines culture as "the study of perfection, the disinterested search for sweetness and light". Again, Oswald Spengler regards civilization as the "decaying phase of culture." Kant realized that the idea of morality was necessary to culture ; but civilization may not account for it. According to Maclver, culture is the "anti-thesis of civilization."

To some social anthropologists civilization represents only the material products of human creation. These are material objects. The material culture includes those human products that can be experienced with our senses ; but culture in unique, as it does not come under the purview of human sense perception. Civilization can be measured with precision, but culture is beyond measurement.

Finally, culture is the concern to the group life. It is not a personal affair. An individual is born within the culture of a group and he is constantly subjected to his cultural environment. He acquires culture through continuous social living. It develops his personality ; and he acquires the ways of life from the group culture. In other words, he inherits culture from his group. It is for this reason the individual is not the originator of the culture ; it is not his personal affair.

Question :

Let Us Check Our Progress

Culture is identical all over the world, if not, give a few examples for its differences.

Culture is not static ; then what it is ? Suggest three examples in this context.

The starting point of human culture was — of wide base / ideal / started in a humble way / complex. Put the right term within the gap.

Give some examples of non-material culture.

How does culture differs from civilization ? Suggest three examples.

"Culture is a personal affair". Explain whether it is right or wrong

3.3.2 : ROLE OF EDUCATION IN CULTURAL CONTEXT

Education has serious roles to perform in the cultural context. In the socio-cultural context, education is looked upon as the most important and surest agency for the conservation of its life, experience and cultural heritages. It is again, the best mode of purification and reconstruction of human society. All these can be done by means of better communication of cultural values and techniques to set a link between the past and present, and also, between the present and the future. It is, therefore, believed that education is an evergrowing process of culture transmission leading to better ways of life. Its role is manifold.

3.3.3 : EDUCATION AND SUB-CULTURE

The social demand for education and educational aspirations are not independent of the ways of doing and believing of a folk. Dr. J. B. Conant puts it more lucidly — "Before you judge a school, analyse the families from which it draws its students and the opportunities presented to its pupils." So, the cultural background of different social groups and families is very important for studying educational problems and framing educational programmes of the school. The recognition of the existence of sub-cultures makes it necessary for the teacher to know about the environment of his pupils. He also needs to understand the cultural motivation of their parents, and also, parents expectation of education. The problems of educational motivation of the pupils and guardians are ingrained in culture. What cultural elements are stimulant for learning motivation of the community members is an obvious question in this respect. The answer to this will be that, it is those elements which are relevant to the main-stream culture of the locality. Thus, for educational purposes, cultural elements need to be selected according to regional preference. At the same time, the cultural elements of different sub-cultures should be chosen in terms of the

normative view of culture which first of all, evaluates the total culture, and determines the educational norm of it, and finally, incorporates it in the educational programmes and activities. This is an essential functional role of education in the cultural context.

The focus of education is a common culture within which sub-cultures operate and interact. It is, therefore, essential to orient educational programmes in the cultural context of the region in which both sub-cultures of different ethnic, caste or religion groups find expression in the main-stream culture. However, norms of each sub-culture ought to be determined in terms of normative views.

3.3.4 : TRANSMISSION AND PRESERVATION OF CULTURE

Secondly, education is formally concerned with preservation and transmission of cultural heritages to generations to come. Education is to make use of the past in an useful manner for moulding the future. However, some thinkers do not want to imitate the past. This idea is not educationally sound. We cannot rule out the past culture in its total form. Education has a great role to perform for the preservation of our glorious heritages of the past.

The ever moving present needs those element of the past which help it in its ongoing process. From the very creation of the human society useful customs, traditions, ideas of right and wrong, and practices of rules and regulations came to exixt in human affairs and these entered into moral and cultural systems. The pre-eminent functional role of education is to systematically preserve these cultural resources and to communicate and transmit these heritages for growth and development of a learning society through multi-faceted cultural and educational interactions. A stream of new culture emerges out of these interactions, and it radiates its influence leading to enlightened ways of life ; and it ushers cultural change. This is only possible when education performs its role in a right way.

J. S. Mill rightly observes that culture is preserved and transmitted by education to every generation in order “to qualify, to keep and to improve” the level of attainment. Books, records, libraries, monuments, museum, historical relics, inscriptions, stamps, coins, governmental seals and symbols, art exhibits, moral stories, literature, philosophy and other documentary elements of culture of different eras may be considered as the heritages. These are being preserved and the knowledge and efficacies of these are transmitted by various educational agencies for attainment of values and virtues of the hoary past which may be utilized in an effective manner to make use of the past, and to shape the present aiming at the future.

3.3.5 : EDUCATION AND DEVELOPMENT OF NEW SOCIAL ORDER

The role of education, in the cultural context is to forge a new social pattern. Education can perform a tremendous task to this effect. Education is supposed to be the mirror of "social will". It reflects what the society believes in. Education can take up the cultural heritages of knowledge, ideas, attitudes and values and techniques; and by virtue of these it can shape the Destiney of the individual, so as to reshape cultural resources, for developing a new social order. It has to work as a creative force for stimulating cultural changes in a better direction. The task is too difficult to perform as there are innumerable hindrances to change. It is by educational measures and by rightful application of these measures desired cultural transformation may be arrived at.

At the present era we find tremendous influence of education in the cultural perspectives. Some of the values of Indian life have been greatly degenerated as these have not been replenished. The NCERT on the other hand prepared a list of 82 values that are intended to be introduced in schooling system. Again, the Govt. department of education prescribes equality of educational opportunity irrespective of caste, creed, religion, sex, place of birth and the like. Students of different culture and sub-culture groups of India now get education under the same condition and the same class room. These are some examples of new social order that we have achieved.

3.3.6 : ROLE FOR PRESERVATION OF LIFE

Life has not only a physiological aspect, but also has a socio-cultural aspect. This aspect reminds us the folkways and mores that constitute ways of thinking, behaving and dealing with respect to customs, traditions, habits and social manners of the society. These continuations of cultural life hand over the cultural traits, by means of education, from the older to the younger generation. Education, therefore, comes to the forefront as means for continuation of life that mingles with cultural environment. The first cultural life starts with language development and identification of near relations like mother, father, brother, sister and so on. Secondly, the question of survival comes to the fore-front, — what to drink and what not to drink ; what to take and what not to take etc., and etc. That is, rules of life are developed through culture and this is very important in life.

Question :

Let Us Check Our Progress

Mention three major roles of education in the cultural context.

What is sub-culture ? What is need for sub culture in education ?

What does culture preserves ? Name some of these.

What is new social order ? What is the role of education in it ?

Has education any role in preservation of life ? Give a few examples.

3.3.7 : CULTURAL DETERMINANTS OF EDUCATION

3.3.7.1 : RECOGNITION OF CULTURE IN EDUCATION

The cultural determinants of education are most important to all personalities who are engaged in educational affairs. It is not only useful to educational planners and policy makers, but also to teachers, administrators, and researchers in this field. It is an accepted premise that education depends to a great extent, on the total culture of a society. Aims, curriculum and even methodology must have social relevance. The culture of a group, within its cultural area represents the most formidable aims and values of the society. Ideals, philosophy, faith and value systems greatly determine moral attitudes and norms of moral conduct. Religious belief, social, political and economic aspirations of a cultural group, are also, significant, in the context of the ways and means of the social life. The cultural attributes, therefore, find expression in their behaviour and attitudes. Again, these cultural attributes are reflected in the process of their production and creation of material objects, and also, in their vocation and art and artifice. In a wide sense culture touches both the non-material and material aspects of life. So, their aims and aspirations find places in every spheres of non-material and material cultural expressions, especially, in their behaviour and ways of thinking and doing. Education recognizes these attributes. It is education, be it informal, non-formal, incidental or formal that strives to achieve the goal of life. It is for this reason, public authorities extend educational facilities to all types of social groups and evaluative cultural attributes get recognition in the formal system of education.

3.3.7.2 : EDUCATION AND LANGUAGE

Language is the most important attribute of culture. An excellent exposition of P. Sorokin is of immense value in this context of education. It is well known that education is acquired and

learnt. The question is - from what source this acquirement is possible ? The organic needs, at the early stage of life, are met by the family. What about his mental and social needs ? The answer is that the group culture is the dominant force that feeds the child with mental and social need ; and the vehicle, for arriving at these end, is the language of his culture. It determines the ways of interaction processes between himself and his cultural environment. He learns the cultural expression of his language and acquires cultural traits of his group for achieving the ongoing process of development. It is for this reason, language development is so much important in any type of education. Without language no interaction is possible ; and hence, no education would be acquired for discharging functional needs of himself and of the society. According to Ellwood, "culture is transmitted socially, through communication, and it gradually embodies in a group tradition of which the vehicle is language." So culture of any group represents habits of thought and action, learnt by interaction with other members of the group. This may be a school group or family group or any organized group of the community. Without language no exchange of ideas is possible. Language-education is, therefore, so much important in social life.

3.3.7.3 : ART, AESTHETICS, RELIGION, ETHICS AND PHILOSOPHY

Educational systems are not devoid of art, aesthetics and national philosophy ; it may have some reservation with regard to religion. In this context, secularism and the idea of co-existence may prescribe special rules for religious education. Religious education is permissible within the minority groups, provided, this type of education maintains moral forces within it.

The Education Commission, (1952-53) specifically makes provision for religious and moral instructions if any cultural group is in need of it. The Commission states, "Religious and moral instruction also play an important part in the growth of character. . . . the whole purpose of education is not fulfilled unless certain definite moral principles are inculcated in the minds of the youth of the country." However, these schools are outside the system of "state-aid". The Commission, therefore, suggests, "It must be left to the people to practice whatever religion they feel is in conformity with their inclinations, traditions, culture and heredity influence."

It is, therefore, evident that art, aesthetics philosophy, ethics, morality and religion, as outstanding determinants of culture, are educationally accepted for goal orientation and development of human excellence, and shaping the basic pattern of human life.

3.3.7.4 : FOLKWAYS AND MORES

Folkways and mores are not least important as a cultural determinant. The commonly acceptable ways of people are folkways or, ways of the folk. It includes a great variety of

manners, etiquettes, habits and practices, superstition and so on. Again, mores are emotional side of behaviour of a group which are associated with the concepts of right and wrong. These concepts of right and wrong judged by mores are precious concepts in education. So, mores cannot be disregarded in education of a region or, a country. In the context of folkways, it is experienced that some of the activities and practices are useful to educational purposes. Mention may be made of leisure-hour activities including games, sports, athletics and the like which are purposefully utilized in educational programmes. However, education eliminates those cultural aspects which are not conducive to maintenance of social order and progress ; and it enriches those attributes that are socially valuable and useful to educational purposes.

3.3.7.5 : ATTITUDES, HABITS, IDEAS AND VALUES

Attitudes, habits, ideas and values have been culturally developed in order to meet the needs of the group life. These have been learnt, communicated, preserved and modified by means of educative processes. If we think of material aspect of culture and its artefacts we make sure of the fact that these are useful products of the cultural behaviour and are needed for such behaviour. Educational means and processes require teaching and learning both formal and informal for disseminating and transmitting cultural forces to the present and the coming generations in order to establish the interrelationship between cultural attributes and educative processes. Keeping in this view, cultural forces require to be modified, developed and replenished so as to meet the changing conditions of social life ; and education, all along deals with this type of development and modification for developing better conditions of life.

Question :

Let Us Check Our Progress

Do you like recognition of culture in education ? Suggest at least four remarks in this context.

What is the role of language in education ? Give, at least three examples.

How far religion is acceptable in education ?

What is role of mores in education ?

Suggest some other cultural determinants of education.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 3
Education and Culture

Unit – 2
Cultural Change and Lag

3.4 : CULTURAL CHANGE

3.4.1 : MEANING OF CULTURAL CHANGE

Social change and cultural change have some basic ideas in common, in the sense, that both these changes desire to have social progress and social weal. That means static social conditions are intended to be eliminated by the changing processes.

Social change refers to structural and functional or, relational changes in the society. The organizational patterns change the structure ; and the changes in stratification, tends to change in the relational behaviour and norms of give and take relationship. In other words, it means a kind of relationship which can be expected by the groups from the member or the members in terms of the standard or, norm or value systems of the different interacting groups, at least, at the time of consequence to the groups. When monarchy gave way to democracy, the relation between the peopleand the government changed. Similarly, joint family may be changed into nuclear family, resulting in change in family relations. These are all relational changes, in the purview of social change.

However, the meaning of cultural change is a much broader concept. Cultural change refers to changes in any aspect of the cultural life. It may be changes in values, norms, beliefs language, knowledge, technology or, ways in productive ventures and so on. It is interesting to note that

culture patterns do not maintain standard life cycles. They are passed on from generations together. E. S. Bogardus opines that "some cultures patterns are inflexible while others are supple, but their survival depends neither on inflexibility nor their suppleness but on the ability to meet both the changeless and changing human needs." Naturally, it is a very hard task to define cultural change. Only one can describe the changing nature of culture in various ways. In this context it is noteworthy to quote Robert Lynd (1939), who, in his "Knowledge for what ?" remarked, "when culture changes — a new law is passed, a custom falls into disuse, women wear shorts, antisemitism becomes a problem, or automatic machinery replaces human labour, — it is the behaviour of people which provides the dynamics of change.... Neither a society nor a culture learns, but people do." So, cultural change is that change

which are caused by people for modification of some aspects of group behaviour and ways of life. The fact is that no changes take place over night. In some period of history, cultural change is very rapid. We experienced it after the Industrial Revolution and also after the two World Wars. Again, the political liberations of African and Asian countries including India gave way to rapid changes in cultural life. While in some periods of history cultural change was very very slow and slothful ; because people did not want to have rapid changes. However, it is an acceptable fact that change is inevitable. It is evident, therefore, that we can clarify cultural changes, but we fail to define cultural change in various ways. We can note with great care that cultural change is a process that determines any aspects of change in culture.

This line of thinking has been expressed in the language of Roucek and Warren, "Cultural Change is the process where by different parts of a culture are modified through time ; it is always in process to some degree. Cultures whose change is extremely slow are called static, while cultures undergoing rapid change are called dynamic." So, cultural changes have varieties of characteristics.

3.4.2 : CHARACTERISTICS OF CULTURAL CHANGE

Cultural change, on careful examination, reveals certain important characteristics.

In first place cultural change is universal in character. Every society and every country must have their respective cultures ; and change in culture is inevitable in response

to changing conditions of social life. The ways of life are not static. In every country they are changing, developing and modifying so as to give way to new ways of human life. In this sense cultural change is universal in nature.

In the second place, cultural change does not take place overnight. "Change is the process where by different parts of culture are modified through time." So, time factor is important in cultural change. People first of all feel the urge for cultural change ; and when different organized groups create a social force for changing their prevailing conditions of life, it is only them change is possible.

So, creation of a social force for changing conditions necessitates a period of time for thinking, rethinking, and adjusting with the modified cultural change. The time span for cultural change is, therefore, is long enough.

Whenever, the process of cultural change may be examined, it would be found that all the cultural aspects of a group life do not change at a time. Cultural change affects only some aspects of the ways of life. When rice grains were not sufficient in West Bengal, just afterindependence, the people had to change their food habits. They had to adopt themselves with new food habit with wheat grains ; but other cultural habits were not so much modified. Again, the taste for wheat-product commodities, gradually, gained popularity in cultural life. So, new food habit entered into cultural life. When rice production became available ; the two types of food habits continued. So, cultural change characterises a change in some aspects of culture ; and thereafter in another aspect and so on.

It is also revealed, that the rate of change in culture is feeble in traditional or primitive societies. Even, they may resist the changing process of culture. While, in modern life, especially in towns and cities, adaptation to new culture is rapid and people accept new cultural ways to a great extent. So cultural changes are in progressive order, similarly, in some periods of history culture changed rapidly ; while in some other historical periods cultural change was very slow. Again, cultures of some of civilized nation grew, stabilized and died out at the climax of their achievement. The examples are, Harappa, Mohenjodaro, Babylon or Egypt.

It has been studied and examined by P. Sorokin that cultures do not advance along with time in a linear way. The nature of cultural changes may be diverse. They may

or may not be cyclical or pendular always. They may not be linear for some parts of history or, one culture may or may not be in the continuous process of change. So direction of cultural change is not certain.

3.4.3 : FACTORS OF CULTURAL CHANGE

There are innumerable factors of Cultural Change. Some of the most formidable factors are — discovery, innovations and inventions, diffusion, mass-media and education are other factors.

Discovery is that process which help gaining new knowledge in the global context. It is not like invention ; but it may clear out the ways for invention. Discovery may provide new knowledge and that ultimately may combine with other knowledge to devise a new way of achieving some purposes. It is for this reason, discovery plays a significant role for accomplishing a new ways of life in some specific line ; while invention is much more effective in bringing about cultural change.

Invention is a new combination of known and unknown elements of knowledge ; and it is put to use for serving certain purposes. New ways of thinking and doing things are associated with invention. Invention may take place either in the material or, in the non-material aspects. The machineries are significant material inventions ; while new philosophical concept or, new form of government may characterise non-material invention.

It was Curlile who expressed his idea in a nice way, "Inventions and innovations are the legs on which human progress traverses." In sociology inventions and innovations are most effective factors for cultural change. They are novel combinations of known and unknown elements in order to serve some useful purpose. So, novel ways of doing and thinking are involved in it.

It is Ogburn who firmly believes that material culture sets the changing conditions of culture, and the non-material culture is being influenced by it, and takes the course of change very slowly. So, one lags behind the other. However, on careful analysis, this proposition is not always true. It is well known fact that the urge for changes, first of all, develops within human mind. The create of new technological device, primarily thinks of the need, contrivances and plan of action for inventing the

technological product; and it is only then the product is produced. It comes to the perception of other people in course of time. So,changes, first of all, come within human mind which is truly not a material object. It is the product of abstract reasoning, thinking, rethinking, planning and working out the details for any type invention or innovation. The outcome of the product is the representation of human excellence and it is used for achieving novel ways of thinking or, doing.

Diffusion is another vehicle of cultural change. It is primarily concerned with spreading of cultural traits or complexes from one culture to another or from one society to another society. According to F. J. Brown, "Direct diffusion results from contact of one group with another, but it may also be indirect as by the printed word, by radio, or by infiltration of goods and ideas." It is by means of diffusion the European countries spreader Christianity in many of the Afro-Asian countries. Again, superficial traits like styles of hair dressing may change the culture of 'hair-care'. So, cultural changes may result through diffusion in various directions. However, diffusion requires a strong and impressive media.

The mass-media is very much effective for the purpose of diffusion of new culture pattern. The mass-media of modern days serve both audio-visual purposes. These are also important contrivances for propaganda. The trading companies make use of T.V. and other media to create new attitudes to their products. These are also educative, as they impart incidental and informal education to the mass. So, it not only assists in diffusion, but also in motivation, so that a good number of people are inclined to new things and ideas. New culture may develop in this way.

However, the most effective device of cultural change is education. Education moulds and shapes the personality of every individual in a desired direction. Education develops new attitudes and habits for betterment of life. School boys and girls learn health habits, dress-habits, art and aesthetics in a better way. They get acquainted with current knowledge and information about philosophical, scientific, and environmental studies. The knowledge of History, Geography, Life Science, Mathematics orients their habits and practices of daily life. They view and judge the social, cultural and economic problems in a rational way so as to become a befitting person for future life. National, ideals, aims and aspirations are imbibed within them through multifaceted cultural interactions that occur in the class-room, playground,

seminar, group discussions science laboratory and the like. All these develop new habit patterns, manners, behaviour, values and attitudes. The teachers take recourse to diffusionist approach, psychological approach and motivational techniques for changing the ways of their life in better ways. In short, education enhances the personality development of every child for facing challenges of this fast changing social and cultural life. M. P. Singh (1963), in his "Theory of Education" mentioned an important quotation which states, "Education is the community's means of doing some thing with its heritage of knowledge, ideas and attitudes. It is not only its reflection but an instrument for changing that social order. Education has not only the powers to produce a kind of person but a kind of society also." It is worthy to note that the vocational bias of recent times could be traced in the changing trends of technological and industrial system of production ; and thereby technical education becomes so much important in educational system. The curricular pattern are also changing, and developing so as to meet the changing conditions of cultural life. It is education which is the effective instrument for this purpose.

3.5 : CULTURAL LAG

William F. Ogburn is of opinion that some parts of cultures are changing at a rapid rate, while other parts of cultures are slothful in the process of change. The reasons are numerous. In the first place, there are resistances to change in some parts of culture

Habit is thought to be the principal factor to resistances. When the habitual processes and procedures of satisfying the needs are disturbed crises arise in the habitual ways of life.

The cultural inertia is also responsible for such resistances.

The people are habituated to their practices, customs, beliefs conventions, technological procedures and systems.

Over and above, the fear of disruption also resists innovations and inventions.

People may suffer from ill-employment or, may have to face unbecoming state of affairs. So, they react against innovations and inventions.

Traditionalism and vested interests may be of other types of resistance to change.

The ideological resistance is also, of great significance in this context.

Wherever, innovations and inventions step in, these bring about new ways of life in material culture. And cultural life is greatly affected by these inventions that modify some cultural patterns at a rapid rate, inspite of having resistances to change ; while, non-material culture is not so much adoptive to affect the existing ways of life. So, differential operation of inventions and resistances in different parts of cultures give way to rapid changes of culture in some parts ; while some other parts of the culture lag behind to cope with the changing conditions of life. Ogburn believes that material culture goes ahead of non-material culture ; and so the latter lags behind. This is the basic idea behind the controversial theory of cultural lag. It is believed that some parts of human culture do not change as rapidly as the other parts do. So the part of culture that lags behind the other part disturbs social equilibrium. Ogburn characterises it as Cultural Lags.

3.5.1 : VIEWS OF E. S. BOGARDUS ON CULTURAL LAG

According to Bogardus, "lag means that one or more phases of culture have moved ahead, and that all other phases, therefore, are lagging behind. Lag is a term which suggests progress at some point or other."

He again suggests that lag is dependent on some standards. If one thinks of a given movement, that may be supposed as the rise of a dictatorship, then he would find a lag if he believes in democratic principles ; but if he thinks of progress, then democracy will be a lag if he is a believer in totalitarian government. Accordingly, he says, "An advance in any phase of culture not only produces lags in the phases of culture which do not adjust quickly, but also results in conflicts and problems."... Again he remarks, "By its nature culture cannot easily keep a pace of new social conditions ; neither can it in all of its phases keep up to date, evenly. Some parts of it are bound to lag." Analysis of cultural lags helps to explain conflicts and problems, arising out of cultural change.

Question :

Let Us Check Our Progress

Clearly explain the culture and sub-culture.

What do you understand by nature of culture ?

Relate a few roles of education in cultural context.

Mention, at least six cultural determinants of education.

What is the meaning of cultural change ?

What is cultural lag ?

3.6 : LET US SUM UP

The common view of culture is acceptable in certain specific social situations. But the Anthropological view represents the whole way of life of a group. The normative view of culture is appropriate to such conditions as are concerned with academic norm, emerging social planning and progressive measures of value judgement. It represents the SumTotal cultures minus the dysfunctional elements of anthropological view of culture. However, in all other cases, anthropological cultures are of prime importance in every step of social life. It takes into account all aspects of thinking, doing, behaving, acting, believing, and practising and creating values and techniques in connection with non-material and material sides of human achievement. When values represent the non-material culture it includes such things as knowledge, language, art, aesthetics, ethics, morality, laws, custom, manners, etiquette, habits and systems of everyday life, rites, religion including faith, belief and superstition and such other things that touch the common affairs of life and which are not ordinarily perceivable by means of human senses.

These represent the abstract side of common affairs of a social group. While, techniques are understood as human achievement in the creation of tangible things which represent instruments, weapons, craft, visible art and architecture and technological output. Culture differs in different culture areas ; but it is in the process of developing or receding. Culture is inherited by all human groups over the world. It does not become a substitute for civilization.

Education, therefore, preserves, transmits and diffuses culture for betterment of the society. Schemes of education naturally consider different valuable sub-culture for educational purposes. The aim of education is to achieve new social order by forging new cultural patterns to the learners. Education strives to achieve democratic ideals and values. It has also a role for preservation of life.

The cultural determinants of education are important to educationists of all ages. Cultural determinants like language, art, aesthetics, religion, ethics or philosophy find significant places in educational system. Folkways, and mores, are valuable things in education. Attitudes, habits, ideas and values are developed in a refined way in the educative processes.

It is commonly accepted that better cultural environment gives rise to better culture. The fact is that culture is not static ; it is in a flux. It is changing developing, modifying and decaying in some aspects. The cultural changes are rapid in industrial and metropolitan environment and slothful in isolated areas of the country, because diffusion of knowledge and cultural traits are least

transmitted in these areas. It is also observed that some periods of history experienced cultural culmination, while in some other periods of history it had been decaying. The marked characteristics of cultural change are pronounced in its universality, hesitation to acceptance of new challenges of life, and sufficient time for cultural adaptation. Cultural changes are consequent upon discovery, invention, diffusion mass-media and educative processes.

It is a fact that culture changes; but inventions and resistance to change create disequilibrium in cultural life giving rise to new problems in social life. Some sociologists suggest that disequilibrium is natural as some parts of culture go ahead of some other parts of it. Cultural lag is therefore, inevitable as all parts of cultures are not equally sensitive to new mode of technological progress.

3.7 : GLOSSARY

(a)	Cultural objects	:	These are material objects made and used by people of a region and are socially inherited.
(b)	Descriptive Culture	:	Refers to Anthropological view of culture.
(c)	Normative Culture	:	Total culture minus the disfunctional aspects of culture.
(d)	Culture pattern	:	It is a collective term for every type of behaviour patterns that are culturally acquired and transmitted. The name of Benedict Ruth is associated with it.
(e)	Cultural trait	:	It is the simplest functional unit into which a culture can be cleavaged.
(f)	Culture complex	:	A cluster of traits is said to be a culture complex.
(g)	Culture area	:	It is the geographical area in which various cultures represent significant similarity.
(h)	Value	:	It is associated with any object, idea, or content of experience of a group. It has the capacity to satisfy a human desire in an ideal social condition.

3.8 : SUGGESTED READINGS

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3.9 : ASSIGNMENTS

a. What is the relation between folkways and culture pattern?

b. Relate the cultural determinants of education.

c. How does culture change? What are the characteristics of cultural change?

d. Explain the concept of cultural lag.

e. Define culture and explain its nature.

BLOCK – 4

EDUCATION AND BACKWARD COMMUNITY IN INDIAN SOCIETY

Unit - 1

Education and SCs, STs & OBCs

Unit - 2

Education and Women

Unit - 3

Education and Rural People

CONTENT STRUCTURE

4.1 : Introduction

4.2 : Objectives

4.3 : Education of the Socially and Economically Disadvantaged Sections — SCs, STs and OBCs

4.3.1 : Who are SCs, STs and OBCs?

4.3.2 : Constitutional Safeguards of the SCs, STs and OBCs

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4.4 : Education of Women

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4.4.3 : Problems of Women Education

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4.5 : Rural Education

4.5.1 : Understanding "Rural"

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4.5.4 : Educational Needs for Rural Development

4.5.5 : Problems in Rural Education

4.5.6 : Strengthening Rural Education

4.6 : Summing Up

4.7 : Suggested Reading and References

4.8 : Assignments

4.1 : INTRODUCTION

In Unit 1 of Module 2 of this Paper we have discussed the linkage between education and culture, and also role of education in cultural context. Perhaps you have been by this time, able to understand that education is a sub-system of the super system-society which holds as well as creates culture. Therefore, the individuals are naturally taking a great role for creation and diffusion of cultural gems of our community. We may assume that if the individuals are not well-equipped with skills and wisdom for knowledge –building or that is done by only a limited number of the members of community, the progress is slowed down. Hence, education deprivation is estimated as a loss to the total knowledge repertoire of a community. Now development experts of the world think a lot and design strategies by which all sections of a community become active creator of knowledge and skills that enhance national development as well as growth of the total human capital. In our country it is observed that some people can not take active role in national development because they are educationally deprived and weaker. In this Unit we are going to look deeply in this basic issue.

4.2 : OBJECTIVES

After going through this Unit you will be, in context to Indian education system, able to :

understand problems of socially and economically backward class children. Who represent girls/women, STs/SCs/OBCs, rural segments of Indian Population.

acquainted with the various measures and programmes for the educational welfare of different disadvantaged groups of children and people.

analyse and organize the recommendations of various commissions, committees and five year plans on education of socially and economically disadvantaged sections.

suggest suitable strategies for improving comprehensive educational well-being of those sections of children and peoples of India.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 4
Education and Backward Community of Indian society

Unit – 1
Education and SCs, STs & OBCs

4.3: EDUCATION OF THE SOCIALLY AND ECONOMICALLY DISADVANTAGED SECTIONS- SCs, STs & OBCs

Let us assume that by 'disadvantaged sections' we mean the persons in India who are facing some barriers to their development and advancement in the matter of aspects of quality of life due mainly social and economic worse off than the rest of the Indian populace. Further, we believe that their holistic life conditions can be improved with the implementation of comprehensive intervention in the sector of education, health, employment, participation, etc. We are definitely more interested in their educational intervention. Finally, you may raise a question: who are the socially and economically disadvantaged sections of our country? Hope, it is not impossible for you to give the correct answer.

The story does not end here. There are two groups of people in our country -women and the persons who live in rural areas. Circumstantially, they have been facing difficulties in the matter of getting accessible platform and opportunities to education, health, and other well-being inputs in proportion to what the males and the urban people generally get and enjoy. We shall deal this group in the latter sections of this Unit.

We often use the terms SCs, STs and OBCs in several enterprises of our daily living. They are our socially and economically disadvantaged fellow-citizens. Who are actually they? Have you ever tried to know -who are they? What are their definitional criteria? Perhaps no. Let us advance our conceptualizations first.

4.3.1: WHO ARE SCs, STs & OBCs?

The persons belonging to the Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Classes (OBC) are definitely economically non-solvent, marginal and originally socially dominated by the majority of the populace. Eventually, it is thought that these persons needs some additional protective mechanisms for building a society or nation which aspires for equitable distribution of rights, education and other well-being services. In order to ensure the above pledge Article 46 of our Constriction clearly lays down : "The State shall promote with special care the educational and economic interests of the 'weaker sections' of the people, and in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation". Further, the Article 244 lays down that the Union Government will have the power to direct the states in respect of administration of Scheduled Areas and Scheduled Tribes. The Article 338 provides for a Special Officer for the Scheduled Castes and Scheduled Tribes to be appointed by the President to investigate all matters relating to the safeguards provided for the SCs and STs as well as other backward classes under the purview of the Constitution.

Upon reflection we notice that the terms used in the Constitution are 'weaker sections' and the 'backward classes' who are socially and educationally backward, particularly the SCs and STs. However, the term 'backward' is nowhere defined and the task for determining the 'backward classes' was left to the Backward Classes Commission appointed by the President under Article 340 of our Constitution in 1953. That Commission could not define the term 'Backward Classes', and analyzed several dimensions of Indian community and adopted the following general guidance for the term 'backwardness' :

low social position in the traditional caste hierarchy of Hindu society,

lack of general educational advancement among the major section of a caste or community,

inadequate or no representation in government services,

inadequate representation in the filed of trade, commerce, and industry.

In the matter of educationally backwardness as evinced in various committees some other criteria have been listed :

those who suffer from stigma of untouchability or near untouchability (classified as Scheduled Castes),

those who tribes who are not yet sufficiently assimilated in the general social order (classified as Scheduled Tribes)

those who, owing to long neglect, have been driven as a community of crime, known as Criminal Tribes before 1953 and now known as Ex-Criminal Tribes or Denotified Groups,

Other Backward Classes including

those nomads who do not enjoy any social respect and who have no appreciation for a fixed habitation; (b) communities consisting largely of agricultural or landless laboureres; (c) communities costing largely of tenants without occupancy rights and those with insecure land tenure; (d) communities consisting of a large percentage of small land-owners with

economic holdings; (e) communities engaged in cattle-breeding, sheep-breeding, or fishing on a small scale; (f) artisan and occupational classes without security of employment and whose traditional occupations have ceased to be remunerative;

communities ,the majority of whose people do not have sufficient education, and therefore, have not secured adequate representation in Government service; (h) social groups from among Muslims, Christians, Sikhs, who are still backward socially and educationally; and (i) communities occupying low positions in social hierarchy.

Thus, 'Backward Classes' could not be defined in a single scale so it has been left to the State Governments to have their own list of backward classes as they think fit according to their political exigencies keeping in mind the above broad guidelines. However, it is to be kept in cognizance that the criteria of backward classes must be objectives, should consider parameters indicative of status / conditions of education, soio-cultural and economic, etc. Over the past fifty years the term backwardness focus on the measures of poverty, educational opportunities and literacy, nutrition, standard of living, female education and empowerment, etc.

Let us now understand more about them.

1. Schedules Tribes :

Hunter sees a tribe descends from common biological, mythical or legendary ancestors, it occupies a defined territory, or it has a common history the tribe speaks a common dialect and it is invariably endogamous. Majumder, (1961), defines tribe as "a collection of families or groups

of families, bearing a common name, members which occupy the same territory, speak the same language and observe certain taboos regarding marriage, profession, or occupation and have developed as well as assessed system of reciprocity and mutuality of obligations". Mishra (2002) defines Scheduled tribes as people who (i) claim themselves as indigenous to the soil; (ii) generally inhabit forest and hilly regions; (iii) largely pursue a subsistence level economy; (iv) have greate regard for traditional religious and cultural practices; (v) believe in common ancestry and (vi) have strong group ties. However, all characteristics do not apply to all tribal communities. The term tribe or tribal has not been defined anywhere in the Constitution although according to the Article 342, Scheduled Tribe represents the tribe or tribal communities that are notified by the President. Article 366(25) defines Scheduled Tribes, "Such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution". Article 342 prescribes the procedure to the followed in the matter of specification of Scheduled Tribes. The criteria followed or specification of a community as a Scheduled Tribe are : (i) indications of primitive traits; (ii) distinctive culture; (iii) geographical isolation; (iv) shyness of contact with the community at large and (v) backwardness.

2. Scheduled Castes :

It was only in 1932 that the term Scheduled Castes was officially defined as only meaning the 'untouchables'. Finally, as recommended by the Simon Commission (1935) the term, 'Scheduled Caste' was adopted in the Government of India Act, 1935, (Para 23, Schedule I). For the purpose of social upliftment in 1933 Gandhiji coined the term 'Harijans' meaning 'Children of God' Although the term 'Scheduled Caste' has not been defined anywhere in the Constitution it signifies a lower status of the people those who belong to it. Article 341 of the Constitution of India reads as follows :

"Scheduled Caste" means such castes, races or tribes parts or groups within such castes, races or tribes as are deemed under Art. 341 to be the Scheduled Castes" (Constitution of India, The Scheduled Castes). The president of India has powers to issue the list of the Scheduled Castes as has been published in the Scheduled Castes order of 1950 after consultation with the Governor of any

State (The Scheduled Castes order of 1950). Literally, Scheduled Caste is the caste that is listed in the List of Schedule Castes of a particular region or State and persons of that caste are entitled to get some safeguards under the various provisions of the Indian Constitution.

3. Other Backward Classes (OBCs) :

The Constitution has made separate provisions for the amelioration and advancement of all 'backward classes' in general though it does not define 'backward classes'. The SCs and STs are no doubt backward classes. Kaka Saheb Kalekar Commission (1953), B.P.Mandal Commission (1980) and the Supreme Court of India have made thorough deliberation regarding classification criteria for the backward classes. Justice Durga Das Basu, Indian Constitution expert, has also looked deeply in this matter. He opines : "The simple test for classifying a class as backward may be had from Article 15(4), viz., whether the members of such class are 'socially and educationally' worse off than the rest of the citizens, whether they belong to the Scheduled Castes or not. Both 'social' and 'educational' backwardness must co-exist for this purpose." OBCs, as per the Government of India's Notification No. 12011/68/93/BCC(C) dated 10 September 1993, consist of castes and communities which are common to both the Lists contained in the Report of the Backward Classes Commission (Mandal Commission) and those of the State Governments prepared for the purpose. So far, Central Lists of OBCs in respect of 21 States and 5 Union Territories have been notified.

The Population Profile of the SCs, STS & OBCs

As per available demographic statistics the socio-economically disadvantaged person in our country may be tabulated as.

Table : ***Distributions of Scs, STs, and OBCs in India***

Group-Category	Persons in million	Percentage of Total Population	Source
Scheduled Tribes	67.76	8.08	1991 Census
Scheduled Castes	179.7	17.5	in 2001 (projected)
OBC including Minorities	188.9	18.4	in 2001 (projected)

The Distributions are not even. In India, for example, 81 per cent of the SCs live in rural areas, but they spread all over the country, except in the state of Nagaland and the two UTs of Andaman and Nicobar Islands and Lakshadweep. In West Bengal the SCs contribute to 23.6 per cent of its total population. According to 1991 Census the highest concentration of the STs

population is found in the North Eastern States of Mizoram (94.8 %) Nagaland (87.7%), Meghalaya (85.8%).

Ensuring equity in all social dimensions, equality of opportunities to education for all and securing empowerment of the Socially Disadvantaged Groups viz., the Scheduled Castes (SCs), the Other Backward Classes (OBCs) and the Minorities constitute the priority list of country's developmental agenda since India attained her independence.

Question :

Let Us Check Our Progress

Give a suitable definition of the term — Other Backward Classes (OBCs).

Write down in brief how many ways you can think of differences between SC and ST.

4.3.2: CONSTITUIONAL SAFEGUARD OF THE SCs, STs & OBCs

Recognizing the relative backwardness of these weaker sections of the society our Constitution in its directive principles has proclaimed the most realistic goals for ensuring the proper climate so the true democratic processes may be fostered and human rights could be guaranteed. For example, the Constitution of India guarantees equality before the law (Article 14: Equality before the Law and Equal Protection of the Laws) for all; The principle of equality does not mean that very law must have universal application for all persons and equal protection is meant a guarantee of equal treatment of persons in equal circumstances.

Further the Constitution enjoins the State to make special provisions for the advancement of any socially and educationally backward classes or for SCs /STs (Article 15(4)). Its focus remains on 'Prohibition of Discrimination on grounds of Religion, Race, Caste, Sex or Place of Birth'. It also empowers the State to make provisions for reservation in appointments or posts in favour of any backward class of citizens (Article (16(4)). The Constitution of India also states categorically that untouchability is abolished and its practice in any form is forbidden (Article 17). Further, it enjoins the State to promote, with special care, the educational and economic interests of the weaker sections of the people and, in particular, of SCs/STs and promises to protect them from social injustice and all forms of exploitation (Article 46). Article 275(1) promises grant-in-aid for promoting the welfare of STs and for raising the level of administration of the Scheduled

Areas. Reservation of seats for SCs in the democratic institutions (Article 330) and in services (Article 335) is another measure of positive discrimination in favour of these Groups. It empowers the State to appoint a Commission to investigate into the conditions of socially and educationally backward classes (Article 340) and to specify the Castes/ Tribes or Tribal Communities to be deemed as SCs /STs (Article 341 & 342). The Fifth Schedule to the Constitution lays down certain prescriptions about the Scheduled Areas as well as the Scheduled tribes in states other than Assam, Meghalaya, Tripura and Mizoram by ensuring submission of Annual Reports by the Governors to the President of India regarding the Administration of the Scheduled Areas and setting up of tribal Advisory Councils to advice on matters relating to the welfare and advancement of the STs (Article 244(1)). Similarly the Sixth Schedule to the Constitution refers to the administration of Tribal Areas in the states of Assam, Meghalaya, Tripura and Mizoram by designating certain areas as Autonomous Districts and Autonomous Regions and also by constituting District Councils and Regional Councils and Regional Councils (Article 244(2)). To ensure effective participation of the tribal in the planning and decision-making the 73rd and 74th. Amendments of the Constitution are being extended to the Scheduled Areas through the Panchayets ((Extension to the Scheduled Areas) Act, 1996.

In the case of Minorities, the Constitution adopts certain safeguards to recognize their rights in conserving their culture and establish and administer educational institutions of their choice under the Articles 29 and 30. While the Article 350(A) advocates instructions in the mother tongue at the primary stage of education to children belonging to Linguistic Minorities, Article 350(B) provides for a Special Officer to safeguard the interests of the Linguistic Minorities. Besides these specific Articles, there are also a number of Constitutional provisions enabling protection and promotion of the interests of these Socially Disadvantaged Groups.

Question :

Identify and list down the Articles that are concerned with the several social securities provide to the SCs.

Identify and list down the Articles that are concerned with the several social securities provide to the STs.

Why have various Constitutional guarantees been extended exclusively for the STs?

4.3.3: EQUITY & EQUALITY OF OPPORTUNITY TO EDUCATION FOR THE SCs, STs and OBCs

Our Constitution pledges creation of a democratic civil society that must takes into its operations the spirit, principles and mechanisms ensuring equity, equal opportunities to education without any discrimination of any form. Moreover, you know, the Planning Commission makes systematic studies and gives continuous directions towards those aims For example, the 10th Plan documents rightly puts "Empowerment of the Socially Disadvantaged Groups viz., the Scheduled Castes (SCs), the Other Backward Classes (OBCs) and the Minorities [here both the Other Backward Classes and the Minorities have been taken as OBCs] and the Scheduled Tribes (STs) continues to be the priority of country's developmental Agenda, as they still lag behind the rest of the society due to their social economic and educational backwardness. The contemporary development model admits that development can be initiated and sustained with and through education ,skills building and empowerment. Experts strongly believe that holistic development is barred by the existence of disparities in the matter of literacy rates in the six dimensions : male -female; rural (male-female); urban (male-female); rural-urban; male (rural-urban) and female (rural-urban). Moreover, in the socio-economic context within which the present disparities in the educational system have emerged on the Indian scene in five forms: (a) between Scheduled Castes and others; (b) between Scheduled Tribes and others; (c) between OBCs and others; (d) between males and females; (e) between rural and urban settlements; between developed and less developed regions; and (g) between educated and just literates and illiterates.

Such divides pose problems and challenges in holistic development for which the 11th. Plan's Approach papers have rightly envisaged reducing those gaps in development.

Let us now have some ideas about some educational disparities in the following Tables

ST & SC Population Living Below Poverty Line (1999-2000) in Percentage

	STs		**SCs**		**Percentage Decrease 1993-94 to 1999-2000**	
Category	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
Total*	27.09	23.62	27.09	23.63	(-) 10.18	(-) 10.04
SCs	45.86	34.75	36.25	38.47	(-) 11.86	(-) 11.01
Gap	18.77	11.13	9.16	14.85	(-) 1.68	(-) 0.97

Source: 10th Five Year Plan (2000 - 07), Govt. of India. Vol. II, Page - 422.

Table : Gross Enrolment Ratios (GER) of SCs, STs and Total Population in Percentage (1999 - 2000)

Classes		I to V	I to VIII
Total Population	Total	94.9	58.8
	Boys	104.1	67.2
	Girls	85.2	49.7
Scheduled Castes	Total	92.4	62.5
	Boys	103.6	73.6
	Girls	80.5	50.3
Scheduled Tribes	Total	97.7	58.0
	Boys	112.7	70.8
	Girls	82.7	44.8

Source : 1. Census of India, 2001; Govt. of India.; 2. Educational development of SCs and STs, Departmentof Education.; 3. 10th Five-year plan (2002-07), Govt. of India Vol. II, Page 420-421.

The development experts think that a vicious circle of underdevelopment constitutes four components— low urbanization, weak economic base, high disparities in literacy and low literacy rates. Therefore a generalized all-India formula will not yield the desired degree of equity in improvement in human indicators. The policy measures for educational development will not be based on the results of aggregate analysis development strategy implementation, rather specific region/habitation-wise, gender-wise, socio-economic division-wise micro-approaches will be suitable model for ensuring education and empowerment for all with guarantee of full equity and distribution of opportunities and facilities for education not only for access but for complete success.

In the following Section of this Unit we shall make further probe in understanding the possible social factors and issues that hinder an equity-based environment to stand and roll on for advancement.

Question :

Let Us Check Our Progress

Perform the given task :

Collect suitable data, tabulate them and examine traces of inequity in the some issues of educational opportunities.

4.3.4: WHY UNEQUAL DEVELOPMENT OF EDUCATION OF THE SCs, STs and OBCs?

Several studies have revealed that the educational opportunities have been very unevenly distributed among the Scheduled Castes and the Scheduled Tribes as a whole.

In a study of Bhils of Madhya Pradesh, Naik finds that only "the upper caste of the Bhil society, Bhilala farmers, big patels and zamindars and the other well-to-do Bhils have been able to go to school and take advantage of the scholarships and hostel facilities made available to them by the government." A study on the Scheduled Castes and the Scheduled Tribes school and college students made in several states in India also delineates that in almost all states only four or five sub-castes under SCs and STs account for a very large proportion of school and college students. Thus, the spread of education among SCs and STs has remained uneven. A similar trend may be discernible amongst different sub-castes under OBCs.

It has also been observed that on an average, the performance of SC and ST students at schools as well as college levels is low as compared to the performance of non-SCs/STs students. Such differentials in getting and utilizing educational opportunity are not just omissions but due mainly for existences of psycho-social conditions.

It is observed that there are some restrictive forms that hinder educational development of children belonging to the SCs, STs and OBCs.

In the last 50 years after independence education has spread among SCs, STs and OBCs a good deal. The number of their children taking education has increased greatly at all levels though they are lagging behind the non-SC/ST students. Specially, the STs are still lagging far behind all others at all levels except at the lower primary level. In spite of several affirmative actions taken by the government, the educational progress of these groups are far from reaching

at an expected level. Have you ever pondered over such disparity between the goal and the outcome? Let us now analyse the relevant sociological aspects of possible answers to the question. The factors may be of two broad kinds — Individual and Social or Person-Centric and Community-Centric.

Person-Centric Forces

Firstly, the status of the SCs and STs in society is regarded as the lowest. This generates in the minds of the children of these groups a feeling of inferiority right from their childhood and in course of time such feeling gets reinforced by experience and interaction with others and develops a low self-image of themselves in them. However, under the present slightly altered political, economic and social environment, aspirations for education do arise in their minds, but they are unable to give them a concrete shape.

Secondly, most of them are not aware of what to do to take education. They lack the knowledge of the mechanics of obtaining education; e.g., lack of information regarding the procedures involved, inability to fill in application forms or to face interview.

Thirdly, the students of these groups fall behind others in showing academic ability, hard work, good study habits, educational achievement and over-all commitment to their student role. The quality

of their education is poor and it is evident in their performance at the entrance tests for professional courses. All these happen as such students are the first generation learners and they are exposed to the educational environment because of external forces.

Besides, this generation has not yet been able to give up its inferiority complex and hesitates to involve itself easily and actively in the new environment and alter its traditional attitudes and behavior.

It is possible that these individual deficiencies and weaknesses may not remain when their second generation comes in to take education with the support of the first generation educated.

However, the above portrait varies from place to place. Other forces may also come in either positive or negative directions depending upon how the non SCs/STs communities have been enlightend to modify their traditional perceptions of the disadvantaged groups.

Community-Centric Forces

The major social forces influencing the development of education among these backward groups are being discussed now.

(a) Family Environmental Factors :

Poverty : A very large proportion of families of these backward groups are extremely poor. Inorder to maintain their livelihood, all the family members including young children have to undertake some economic activity which fetch some income for them. Therefore, if children are sent to school, the parents have to forgo the income they bring or help they receive from them in their economic activities. Besides, though the children get education free, the parents have to incur at least some expenditure for sending them to school. Because of all these factors, they generally develop an attitude of not sending them to school.

Lack of Interest in Education : It is true that the scheduled castes and the scheduled tribesgenerally have no educational traditions in their families. Most of their parents are illiterate and those who are literate have a very low level of education.

Not Understanding Meaning of Education : It seems that education does not have the samemeaning for these groups as it has for the middle and upper strata. Consequently, the idea of being educated for its own sake does not interest them. They do not look at it as an opportunity for self-expression, self-realization or development of personality. Their attitude towards child raring is governed by the idea of economic returns. It is the vocational aspect of education that appeals to them more.

This is evident by the fact that a large proportion of students belonging to these backward classes drop out either at the middle school or high school stage. They perceive school education divorced from life.

Inability to play a cooperative role : In order that the students play their student role properlyand develop commitment to education, the family has to play a cooperative role. Such needs require to be regularly reinforced at home. This is not possible in the families of these backward class children.

It is expected that when their second generation comes in education, the families may be able to perform this role much better and the quantitative and qualitative development of their children would improve and the problems of wastage and stagnation would be lighter. However, the parents may be given education immediately through alternative modes.

(b) Social Environment of Educational Institutions :

The social environment of the educational institutions also influences the backward class students a great deal in their attitude towards education, their commitment to institution and

student role, their participation in curricular and co-curricular activities, their educational performance, etc. However, it is observed that these elements of the social climate are experienced by these groups differently due to some other factos.

Overt discrimination : Firstly, the extreme shortage of teachers in tribal areas (and in areas wherescheduled caste reside in large proportions) is indicative of over discrimination. Besides, the teacher attendance to schools enrolling mainly of backward class students is far lesser than in schools where middle and upper class students predominate. This shows that a large majority of teachers do not like to go to schools having backward class students in larger proportions.

Secondly, a large number of school teachers underestimate the possibilities of the backward class students' going in for college education and advise them to terminate their education at the end of the school level. They look down upon the tribal culture and feel that tribal students have lower IQ. A distinct message of social inferiority is conveyed to SC/ST students by teachers, administrators as well as other student peers even today.

The negative attitude of teachers to SC/ST students becomes responsible for generating and reinforcing a low self-image of SC/ST students and this influences their educational achievement and classroom interaction.

Covert discrimination : Covert discrimination also occurs towards backward class students. Theperpetrators are not even aware of their such a behaviour; e.g., the system of private primary schools and public schools along with those that are conducted by the government indicates acceptance of equal opportunities for all along with special opportunities for some. This indirectly functions as a powerful level of discrimination.

(c) Patronizing Attitude of Higher Classes to SCs, STs and OBCs :

The higher castes have always considered the SCs/STs and other lower castes as inferior and backward and have shown a patronizing attitude towards them. They believe that these backward class students lack intellectual curiosity and conceptual ability. Most of the teachers think that they may fail to compete successfully with the non-SC/ST students in the existing academic curricula oriented to middle and upper classes needs only. Moreover, the higher castes believe that the entry of backward class children to education has lowered the academic standards, therefore, they sympathize with them. They are admitted to courses on a standard which is lower than that prescribed for the non-backward students as some seats in all educational institutions are reserved for them as per existing rules.

(d) Presence of Social Inequality :

It is a fact that the spread of education is uneven among the social classes. The main reason behind this is social inequality existing among themselves. The SCs, STs and OBCs are socially and economically unequal. They are at different levels of development; their capacities to imbibe education are, therefore, unequal. Thus, such social inequality transfer inequalities in their education also.

The similar situation has arisen between the scheduled groups and the non-schedule groups. With the provision for admission to the reserved seats in educational institutions and various types of educational assistance to them, the scheduled groups move forward. But, starting from lower primary level to higher level of education, though the number of students is increasing year by year, majority of them always lag behind the non-scheduled groups. By the time the scheduled groups reach the levels of the non-scheduled groups, the non-scheduled groups move on to still higher levels of education. Thus, there remains a omnipresent gap or inequality in standard. A sociologist has rightly said that "it is not possible to provide equal educational opportunities to all as long as there is inequality between different social groups in society. Even education cannot make educational opportunities equal". This challenge needs a hard look as social equality is a must for holistic development.

(e) Limitations of the Present-day School System :

Since independence the Indian education system has been catering the educational needs of the urban upper and middle classes. Now, a large number of lower class children have entered educational institutions at all levels. Therefore, it is the responsibility of the educational system appropriate to provide education now to students coming from all strata of society and having different educational aspirations, abilities, facilities and objectives.

The educational environment created by the management groups and teachers is, by and large, aimed to cater mostly to the needs of middle class children; it appears alien to lower and backward class children, and specially to the tribal children. The curricula, evaluation methods, co-curricular activities and general environment do not fit in with the educational and vocational needs of the lower class students. As a result, an attitude of remaining away from education, becoming casual and careless in studies, having lesser commitment to student role, lower level of educational achievement etc., are the resulting conditions. Such psycho-social impediments to access and success need to be addressed.

Question :

Let Us Check Our Progress

Read carefully the above section and write your own comments in about words.

4.3.5: PROGRAMMES AND STRATEGIES FOR EDUCATION AND EMPOWERMENT AND SPECIAL SCHEMES OF THE SCs, STs & OBCs

Programmes for the upliftment and all-round development of these groups have been envisaged under Five-Year Plans. These are concerned with their economic and educational development, health, housing facility, legal aid, encouragement to formation of voluntary welfare organization, etc.

In line with the general policy of the Government, the Ministry of Labour and Employment has formulated several special schemes, which provide various benefits to the members of Scheduled Castes and Scheduled Tribes.

Special Schemes for Scheduled Castes/Tribes

These are being presented step by step.

- **Coaching-cum-Guidance Centre for Scheduled Castes and Scheduled Tribes**

The scheme was launched in 1969-1970 in 4 Centres on pilot basis. Keeping in view the success of the scheme, it was extended to other eighteen States. At present twenty-two Coaching-cum-Guidance Centres have been functioning in twenty-two State/Union Territories. These centers provide Occupational Information, Individual Guidance and organize Confidence Building Programme for the benefit of the job seekers belonging to Scheduled Castes and Scheduled tribes and review the Old Cases. The applicants are provided guidance at the time of their registration with the Employment Exchange and also when they are sponsored against notified vacancies. The Centres also follow up with the employers for placement against vacancies reserved for the Scheduled Castes and Scheduled Tribes candidates.

In addition, thirteen of these centers provide facilities for training in Shorthand and Typing. The physical achievements by various Coaching-cum-Guidance Centres from January 2004 to September 2004 are given below :

Activity	Number of Candidates covered
Registration Guidance	15921
Pre-Submission Guidance	1113
Confidence Building Programme	12272
Training in Typing and Shorthand	8688
Pre-Recruitment Training	2182

(ii) Special Coaching Scheme

To facilitate the recruitment against reserved vacancies in various Central Government Ministries Departments, the Directorate General of Employment and Training has launched this scheme named "Special Coaching Scheme" for Scheduled Castes and Scheduled Tribes to enable SC/ST job-seekers to appear in Competitive Examination conducted by Staff Selection Commission and other Recruitment Boards for recruitment to Group 'C' posts. This scheme first launched in 1973 on pilot basis at Delhi and Ghaziabad and now its 23rd Phase is in progress w.e.f. 01.07.2005.

(iii) Introduction of New Scheme on ICT

This Scheme has been introduced with effect from February 2004, to impart 6 months computer training to SC/ST educated Job seekers through Coaching-cum-Guidance Centres and APTECH Ltd., located at Bangalore, Bhubaneshwar, Chennai, Delhi, Guwahati, Hissar, Hyderabad, Jaipur, Jabalpur, Kolkata, Nagpur and Surat. The second training under the scheme is in progress w.e.f. October 2005 with a seating capacity of 518 SC/ST job seekers at 14 locations i.e. with addition of two more locations viz. Kanpur &Thiruvanathapuram to earlier mentioned 12 locations.

(iv) Labour Welfare Funds / Schemes

For the welfare of the workers engaged in certain non-coal mines, beedi and cine industry who are mostly unorganized, five Labour Welfare Funds namely. Mica Mines Labour Welfare Fund; Limestone and Dolomite Mines Labour Welfare Fund; Iron Ore, Manganese Ore and Chrome Ore Mines Labour Welfare Fund; Beedi Workers' Welfare Fund; and Cine Workers' Welfare Fund have been set up by the Acts of Parliament. A number of welfare schemes in the sphere of health, housing, education, family welfare and social security are being implemented for

the welfare of these unorganized workers majority of whom are from SC/ST and other backward classes.

(v) Rehabilitation of Bonded Labour

The system of bonded labour originated from the uneven social structure characterized by inequitable distribution of land and assets. It has been observed that very large number of identified and released bonded labourers belong to the Scheduled Castes and Scheduled tribes Categories.

The State Government in their task of rehabilitation of released bonded labourers the Ministry of Labour and Employment launched a centrally Sponsored Scheme on 50: 50 basis since May, 1978. The scheme has undergone a lot of qualitative changes from time to time and has been progressively

liberalized. The rehabilitation assistance has since been enhanced to Rs.20,000/- per bonded labourer w.e.f. May 2000 and in case of Seven North Eastern States, 100% central rehabilitation assistance is provided, the amount of Rs.76.96 lakh was incurred as financial assistance to the State under the above Centrally Sponsored Scheme in 2004-05. Financial assistance has also been provided to States for awareness generation, survey and identification of bonded labour. So far 2,66,489 bonded labourers have been rehabilitated under the scheme.

The rehabilitation process consists of two components (i) psychological rehabilitation (ii) physical and economic rehabilitation. Psychological rehabilitation is concerned, with the released bonded labourer, be assured that he or she is entitled to earn his/her economic livelihood and decent living like other human beings. Economic rehabilitation, the scheme consists of empowering him/her for economic choice properly. The State Government have also been advised to integrate/tag the Centrally Sponsored scheme for rehabilitation of bonded labourer with other ongoing poverty alleviation scheme, such as, Swaran Jayanti Gram sewaRojgar Yojana (SJGSRY). Special Component Plan for SC/ST., Tribal Sub Plan etc. so as to pool the resources for meaningful rehabilitation of bonded labourers.

4.3.6: SOME USEFUL SUGGESTIONS

It would not be improper to outline a few suggestions that can be more useful in the proper development of education of lower classes in general and SCs/STs in particular. From your end, you may also give many more suggestions.

- **Educational institutions :**

  Diversification of curricula at the secondary and higher secondary levels and extension of facilities for more short-term vocational courses pertaining to vocations available specially in rural areas.

  Provision for more freedom for selection of courses and combination of courses to students.

  Providing for introduction of facilities of courses in every subject, e.g., certificate course, diploma course, degree course, etc. and making these more flexible and open.

  Opening up of more polytechnics and more professional colleges in rural areas, with life oriented and employment viable skills development.

  Fixing up levels of education and training necessary for certain vocations and reserving them for those who are trained only upto those levels and disqualifying those who possess higher qualifications than required for those jobs.

  Taking up special care in selecting students for teacher training courses and providing them training that helps develop an understanding of the educational needs and problems of children of rural and backward groups and a sympathetic attitude towards them.

  Ensuring almost full-proof universal elementary education under SSA and general community development programmes.

  Extension of non-formal education, adult education and open school/universities and improvement in their quality and functioning.

- **Parents :**

  Ensured improved arrangement for providing counseling and guidance to backward class parents to make them aware of the importance of education of their children and of their role and responsibility in it, if possible through local bodies.

  Introducing schemes to encourage parents to enroll their male as well as female children and retain them at least till the completion of elementary education.

  Augmenting more participation of parents in various awareness promotional programmes organized by local schools.

- **Government :**

  Increasing the minimum amount of scholarship to be provided to students and provides additional incentive to those who show higher achievement.

  Providing facilities of study hall and reading room as much near to the school or home as possible.

  Organizing every level special coaching classes for providing additional training to students.

  Expanding facilities for more low-cost hostels should be provided to students and full time hostel superintendents capable of understanding their problems sympathetically and can supervise, guide and advise them to enable them to play their student role properly.

- **Teachers and School Authorities :**

  Maintaining proper etiquettes by the Principal, teachers and other school personnel when addressing or relating to SCs/STs/OBC students, their home conditions and parents.

  Enhancing interaction between backward and non-backward students.

- **Bureaucracy :**

  The officers and other staff involved in welfare programme for backward class students are expected to develop awareness of existing facilities available to them, occasionally advertise them in regional language, help them to organize their voluntary welfare organizations and monitor implementation of welfare schemes by taking occasional rounds in SC/ST areas. They are expected to deliver humane treatments to then disadvantaged groups.

  Making application procedure for recurring available benefits as simple as possible and provide guidance and help in applying. The forms should be printed in vernacular.

- **Backwards and Non-backwards :**

  Developing acceptance of a norm that the benefits of reservation of seats in educational institutions and other educational benefits provided to backward groups

may continue till their second generation receives minimum education; these be provided on the basis of economic and educational backwardness of family rather than on caste basis.

Creation of social environment favourable to introduction of social reforms in various areas of social life.

Question :

Give your own suggestions for the educational improvement among the STs/SCs/ OBCs students

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 4
Education and Backward Community of Indian society

Unit –2
Education and Women

4.4: EDUCATION OF WOMEN

In the previous Section of this Unit we have understood critically various aspects of sociology of education of the SCs and STs as one of the components of comprehensive national development. In this sub-Unit we are going to have a glimpse of some aspects of sociology of women (includinggirls) education as a powerful lever for improving quality of life of these persons who approximately constitute one half of the total population anywhere in any civil society.

4.4.1: INTRODUCING EDUCATION OF WOMEN

Have you ever pondered over the issue why education for girls and women are important without showing any trace of gender discrimination in the matter of access, retention and success and also for their whole life? Do you know that India still has one of the lowest female literacy rates in Asia? In 1991, less than 40 percent of the 330 million women aged 7 and over were literate, which means today there are over 200 million illiterate women in India. This low level of literacy not only has a negative impact on women's lives but also on their families' lives and on their country's economic development. Numerous studies show that illiterate women have high levels of fertility and mortality, poor nutritional status, low earning potential, and little autonomy within the household. A woman's lack of education also has a negative impact on the health and well being of her children. For instance, a recent survey in India found that infant mortality was inversely related to mother's educational level... Additionally, the lack of an educated population can be an impediment to the country's economic development.

The intimate relationship of human progress and the level and quality of women education has also been realized in this country. For, example, Jawaharlal Nehru, the first Prime Minister observed: "Education of boys is education of one person, but education of a girl is the education of the entire family" which is most original basic unit of our society. Recently, Kofi Annan, the then UN Secretary General, who says: "Gender equality is more than a goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance." in looking forward the national agenda for woman education in India.

Let us now make an academic journey to some aspects of progressive development of education for the girls and women in our country in the next Section...

Question :

Let Us Check Our Progress

Suggest at least five reasons in favour of effective women education in India.

4.4.2: STATE OF WOMEN EDUCATION IN INDIA

Women Education : Before Independence

Some Significant Landmarks in the Development of Women Education.

Adams Report — "the whole of the female sex is systematically consigned to ignorance and left without …their instruction" (A.N.Basu, 1941). The first social reformer Raja Ram Mohan Roy advocated for the abolition of 'sati' and the Act for this purpose was passed in 1829.

Establishment of Bethune School (by J.E.D Bethune) at Calcutta in 1849 gave impetus to Indians to set up similar institutions for girls in India.

Wood's Despatch (1954) recorded only 626 girls' school to exist. Other measures were enactment of the Hindu Widow Remarriage Act, 1856...

Indian Education Commission (1882) puts : "Female education is still in an extremely backward conditions and needs to be fostered in every legitimate way" Sharp rise in private efforts, basically concentrated amongst Europeanized communities (eg. the Brahma Samaj, the Parsees, and the Christians).

During 1902-1917 the Education Departments took some active steps, government grants to private girls' school began to flow, parents felt needs for girls' education, new demand for educated wives, etc. In 1904, Mrs Annie Bezant established the Central Hindu Girls' School at Banaras for imparting western education to girls separately from boys; the Women's Indian Association (Annie Besant founder President) was set up in 1917 at Madras with the object of expansion and promotion of girls' primary education in this country.

During the period from 1917 to 1947, Indian zeal for women education got impetus from the women's movements in contemporary Europe. The National Council of Women, now affiliated to the International Council of Women), was established in 1925, organized the All-India Women's Conference held in 1927, and not only raised voice for equality of educational opportunities but also agitated for the education of women and amelioration of their social status.. The most forceful impetus came form Mahatma Gandhi with his appeal to Indian mothers for becoming aware of education, emancipation and for firing the spirit of nationalism in them... The Hartog Committee Report (1929) emphatically lamented in the words: "The education of women will make available to the country a wealth of capacity that is now largely wasted through lack of opportunity".

Although during this period some social guarantees to the women through the Child Marriage Restraint Act, 1929 and the Hindu Women's Rights to Property Act, 1937 were some advancement in the social emancipation and enlightenment through education, the progress of women education was slow.

Women Education: After Independence

India emerged as a sovereign democratic republic in 1947 and its constitution (1950) pledged to reconstruct the Indian nation on the pillars of justice, liberty, equality and fraternity in all aspects of civil life. In several Articles (Art. 14, 15 and 16) she advanced the policies to be frames for gender - equality and equity. Specifically, improvement as well as empowerment of women's life embraced issues pertaining to their (a) rights and status, (b) education, (c) health, (d) economic emancipation, (e) legitimate rights in the family and the community, (f) welfare services for victimized women, and (g) the role of women's welfare organizations.

We are more interested in the matter of educational welfare of the girls and women. Let us now take romance of a long story of women education after independence and set out mind to some important events.

Some Important Milestones in relation to Women Education in India

1. The University Education Committee, 1948
2. Indian Constitution, 1950 and its relevant amendments
3. National Committee on Women's Education, 1958
4. National Council for Women Education (NCWE) set up in 1959 and reconstructed in 1964.-made landmark suggestions with respect to progressive development of women education
5. Hansa Mehta Committee, 1961
6. Bhaktabatsalam Committee for Women Education,1963
7. Indian Education Commission, 1964-66
8. Tenth Meeting of the (NCWE), 1968
9. National Policy on Education, 1968
10. Committee on Status of Women, 1971-74
11. National Policy on Education (NPE), 1986
12. Programme of Action (POA) on NPE, 1992
13. National Commission for Women, 1992
14. National Perspective Plan for Women's Education, 1998-2000
15. National Commission for Women, 2000
16. National Population Policy, 2000

Our academic journey will become lengthier if we like to deal in details of the above mile stones.

We now concentrate ourselves to some important information.

The National Policy on Education (1986) and Programme of Action (1992) envisages some basicchange in the status of women. Thereupon national system of education decided to play an important, possibly, inventionist role in the empowerment of women, contribute towards development of new values through redesigned curricula and text books, promote women's studies as part of various courses. Following measures were suggested to take for the achievement of these parameters that :

every educational institution should by 1995, take up active programme to tackle women's predicament.

women's participation in vocational, technical and professional education should be emphasised.

at the state level, women's education cell should be set up with adequate supporting staff.

The National Perspective Plan for Women's Education (1988-2000 AD) formulated some importantobjectives for women's education so that women may also participate in the area of social, cultural, economic, political, educational fields. Some main recommendations other than those recommended earlier, to attain these objectives by 200 AD are :

Media and various forms of communication have to be geared to generate awareness among the masses regarding the necessity of educating girls so as to prepare them to effectively contribute to the socio-economic development of the country.

Where necessary, schools meant exclusively for girls may be set up.

Special efforts should be made for bringing tribal children, particularly girls, into school system.

The growing availability of communication should be directed towards keeping up information flows and portraying positive images of women in non-conventional role.

In centralized approach, the village cluster of the block level is seen as the most appropriate for the delivery of programmes.

When we analyse and summarize the above-mentioned ventures, the following aspects can be our reflections:

- Expansion of facilities for women's education, at all levels;
- Education of women to regarded as a special programme for national development;
- Encouragement of co-educational institutes of learning;
- Setting up of administrative organisations like the National Council for the Education of Women, for education and empowerment;
- Existing gap between education of boys and girls to be bridged by adopting multiple strategies;

- Women students to be encouraged through programmes like scholarships and economic hostels;
- Regional imbalances in the provision of education facilities to be corrected and good educational facilities to be provided in rural and backward areas;
- Removal of disparities and discriminations of any kind; and
- National Education System to design curricula, text books and training — all free from gener-bias.

National Commission for Women, 1992

The National Commission for Women was set up 1992 to safeguard the rights and interests of women in aspects of (a) Women's Self-esteem, (b) Women in Development, (c) Globalization, (d) Women and Agriculture, (e) Women and Industry, (f) Support Services, (g) Programmmes for Women-under statutory obligations, development, Special Groups, and (h) Empowerment Strategy.

In aspect of 'Education' the Commission emphatically reflects upon the following : Equal access to education for women and girls must be ensured; Special measures should be taken to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of girls and improve the quality of education to facilitate life-long learning as well as development of occupation/ vocation/technical skills by women; Reducing the gender gap in secondary and higher education could be a focus area. Set targets in existing policies must be achieved, with a special focus on girls and women, particularly those belonging to weaker sections including the Scheduled Castes/Scheduled Tribes/Other Backward Classes/Minorities; Gender sensitive curricula should be developed at all levels of educational system in order to address sex stereotyping as one of the causes of gender discrimination.

"Education is a human right and an essential tool for achieving the goals of equality, development and peace….. Equality of access to and attainment of educational qualifications is necessary if more women are to become agents of change. Literacy of women is an important key to improving health, nutrition and education in the family and to empowering women to participate in decision-making in society. Investing in formal and non-formal education and training for girls and women, with its exceptionally high social and economic return, has proved to be one of the best means of achieving sustainable development and economic growth that is both sustained and sustainable"

At this point, let us set our attention to the drama of women education and empowerment in the International perspective The Fourth World Conference on Women, held in Beijing, China,

in 1995 with the active partnership with other concerned world agencies re-affirms the agenda as given in the adjacent magnet :

- **The National Commission for Women & the National Population Policy, 2000**

Sequel to the Beijing Conference and other national restructuring processes of the country in the area of women education , these two ventures are significant in strengthening the interventions for spread of education, compulsory registration of marriage and special programmes leading to total elimination of child marriage by 2010. The Policy gives stress on -Nutrition, Drinking Water and Sanitation, Housing and Shelter, Environment: Science and Technology, Women in Difficult Circumstances, Violence against women, Rights of the Girl Child, and Mass Media.

In context to Rights of the Girl Child, the policy highlights some most important issues and concerns and gives recommendations along these directions: : All forms of discrimination against the girl child and violation of her rights should be eliminated by undertaking strong measures both preventive and punitive within and outside the family. There should be special emphasis on the needs of the girl child and earmarking of substantial investments in the areas relating to food and nutrition, health and education, and in vocational education. In implementing programmes for eliminating child labour, there could be a special focus on girl children.

Question :

Let Us Check Our Progress

Write a brief note on state of equity in girls' education in contemporary India.

Evaluate efficacy of women education from your own experience.

4.4.3: PROBLEMS OF WOMEN EDUCATION

In the preceeding Section, you have been acquainted with some important national initiatives for women education in India. Have you ever asked yourself the question — Why? The implicit notion is that the total national development can not be achieved without educational well-being of women. This is an important lesson for comprehensive social development with the tool of education.

There are several reasons for the low level of literacy in India, not the least of which is the

high level of poverty. Although school attendance is free, the cost of books, uniforms, and transportation to school can be too much for poor families. Poor families are more likely to keep girls at home to care for younger siblings to work in family enterprises. If a family has to choose between educating a son or a daughter because of financial restrictions, typically the son will be chosen.

Negative parental attitude toward educating daughter can also be a barrier to a girl's education. Many parents' view educating sons as an investment because the sons will be responsible for caring for aging parents; the education of daughters as a waste of money because daughter will eventually live with their husbands' families, and the parent will be benefited directly from their education, or daughter with higher levels of education will likely have higher dowry expenses.

There are other barriers to the education of girls which are being explained in the following points :

Inadequate School Facilities : An important barrier to education in India is the lack of adequateschool facilities. Many states simply do not have enough class rooms to accommodate all of the school age children. Furthermore, the classrooms that are available often lack of basic necessities such as sanitary facilities, availability of drinking water. Lack of latrines can be particularly detrimental to girls' school attendance.

Separate Institution for Girls : Owing to cultural and social heritage, parents are reluctant tosent girls to co-educational schools particularly from middle level and above. Although the movement of co-education has gained ground and finds favour with the educational administrators and plannersfrom the point of view of economy and standards of education, there is still great necessity of establishing separate institutions for girls, because quite a large number of girls prefer to study in separate institutions, provided facilities for all courses are available and some standard are maintained in girls' institution as boys' institutions.

Shortage of Female Teachers : Lack of female teacher is another potential barrier to girls'education. Girls are more likely to attend school and have higher academic achievement if they have female teacher. This is particularly true in highly gender-segregated societies. Currently, women account only 29 percent of the teacher at the primary level (MHRD, 1993). The proportion of female teacher at University level is only 22 percent of instructors (CSO, 1992). These data reflect the paucity of women with the educational qualifications to be teachers.

(IV) Gender Bias Curriculum : A study of Indian text-books done in 1980s found that menwere the main characters in majority of lessons. In these lessons, men held high-prestige occupation and were portrayed as strong, adventurous and intelligent. In contrast, when women are included they were depicted as week and helpless, often as the victim of abuse and beating. These depictions are strong barrier for improving women's position in society.

Lack of Transport Facilities : Lack of transport facilities, particularly in rural areas for girlsto attend middle and secondary schools, far away from their habitations, is one of the major causes of the large scale drop out of girls after completing lower primary education.

(VI) Inadequate Hostel Facilities : Many girls desirous of pursuing education beyond middle levelnot available near to their homes, cannot avail themselves of these facilities due to lack of hostel arrangements. Girls particularly belonging to Scheduled Castes and Scheduled Tribes communities would continue their education at middle and above levels, provided they get free or cheaper residential facilities nearer the educational institution.

(VII) Insecurity : Parents often complain about existence of insecurity for girls to attend schools.

(VIII) Fixed Schooling Hour : Fixed schooling hours is not sometimes suitable for some ruralchildren, as they remain engaged in domestic work at home or in farms and fields for collecting fire wood, coal waste, cow dung and fetching water during normal school hours.

(IX) Unattractive School Environment : Most of the girls do not attend school or drop out afterinitial enrolment, because of lack of physical facilities and congenial environment in schools, particularly in case of mixed schools.

(X) Malnutrition : Generally in India, majority of women are the one who eat last and least inthe whole family; so they eat whatever is left after men folk are satiated. In villages, sometimes women do not get to eat the whole meal due to poverty which results in malnutrition.

(XI) Poor Health : The malnutrition results in poor health of women.

(XII) Maternal Mortality : The mortality rate in India is among highest in the world. As femalesare not given proper attention, which results in the malnutrition and then they are married at an early age which leads to pregnancies at younger age when the body is not ready to bear the burden of a child. All this results in complications, which may lead to gynaecological problems, which may become serious with time and may ultimately, lead to maternal mortality.

(XIII) Lack of Education : The lack of education is the root cause for many other problems. Anuneducated mother cannot look after her children properly and she is not aware of the deadly diseases and their cure, which leads to the poor health of the children. An uneducated person does not know about hygiene this lack of knowledge of hygiene may lead to poor health of the whole family.

(XIV) Mistreatment : There are many laws such as The Hindu Marriage Act of 1955, The Hindu

Succession Act of 1956, The Hindu Widow Remarriage Act of 1856, The Hindu Women Right to Property Act of 1937, The Dowry Prohibition Act of 1961, to protect women and punishment is severe but the conviction rate of crime against women is very low in India. Therefore, in India violence against women is common.

(XV) Overworked : Indian women work more than men of India but their work is hardly recognizedas they mainly do unskilled work. Their household chores is never counted as a work, if a woman is working in a field to help her husband it will also be not counted as work.

(XVI) Lack of Power or Authority : In India generally women cannot take decisions independently,not even related to their own life. They have to take permission of male members for each and every issue and not in matter of their own marriage or deciding on child bearing issues. You may also many more barriers to girls' education. Please try to list them.

4.4.4: MEASURES FOR EDUCATION AND EMPOWERMENT FOR WOMEN

Awareness : Awareness needs to be generated among the masses regarding the necessity ofeducating girls so as to prepare them to effectively contribute to the socio-economic development of the country, to strengthen their role in society and to realize their own capacities. The media and various forms of communication have to be geared to this end.

A fruitful rapport has to be established between the community at large and the teachers and other education personnel. As per the Programme of Action under National Policy on Education-1986, every educational institution should activity participate in bringing about such awareness.

Various Organisations : Involvement of local leaders, voluntary agencies and women's groupsis also necessary. Mahilamandals need to be revitalized and re-oriented to provide an

effective forum for the purpose. One measure to achieve this could be to assign the responsibility to mahilamandals for ensuring that all children in a community attend school. An incentive scheme should be introduced to motivate panchayats to ensure 100 per cent enrolment of girls in their respective villages.

Comprehensive and Effective Programmes : Early childhood care and education introduceschildren into the school system gradually and smoothly. When children get used to attending schools, it ensures in some measure retention of children, including girls at elementary stages also. Hence there is need to have a comprehensive and effective programme of early childhood care and education linked to an integrated package of learning for women. The most comprehensive example of this is the Child Development Services Programme which needs to be universalized.

(IV) Teaching Materials : For improving enrolment and minimising drop-outs and wastage in caseof girl students it would be helpful if learning is made more attractive by providing adequate teaching materials in schools.

Women Teacher : The number of teachers should also be increased so that the interactionbetween the teacher and the taught, which is so essential for good education, also increases. This would help in the retention of girls in schools and would be more effective if teachers from the local area are employed. In single teacher schools the teacher must be a woman. In the case of two-teacher schools at least one teacher must be a woman.

(VI) School Curricula : School curricula should be imaginatively developed to stimulate creativitylargely through play rather than overburdening children with formal or rote learning. Regional language should normally be the medium of instruction. Systematic learning materials development programmes need to be activated.

(VII) School Timing : School timings should be flexible and fixed to suit local conditions andthe needs of the working girl and must be available within the walking distance of the child. A substantial increase is required in the number of schools for girls.

(VIII) Incentives : In addition to incentives like free textbooks, free supply of uniforms, award ofattendance scholarships and midday meals, facilities such as proper school building, safe drinking water, and toilets, etc. need to be provided to encourage school enrolment and retention of girls especially, girls from educationally deprived social groups and from hilly, tribal, desert and remote rural areas and urban slums.

(IX) Reservation and Accommodation : There should be a reservation of 50 per cent posts forwomen teachers in elementary schools. Women teachers working in the rural areas should be provided suitable accommodation.

Girl's School : Wherever necessary, schools meant exclusively for girls, may be set up. Therecommended distance of 3 kilometres for locating a middle school is a handicap for many girls. To ensure participation of girls in middle schools, it is necessary to provide hostel facilities at remote areas.

(XI) Condensed Course : Condensed courses of education at elementary and middle school levelsfor girls should be started in all the rural areas and for weaker sections of the urban community.

(XII) Role of National Literacy Mission : Many girls in the 11-14 years age group would firsthave to be brought into the primary stage through non-formal education. By devising alternative education approaches non-formal schooling and through like intelligent use of technology, the pace of middle school education can he accelerated. Other backward areas would have to be given much more attention in professional as well as financial terms. The National Literacy Mission will need to address these issues on a priority basis.

(XIII) Non-formal Education : Non-formal education as an alternative to the formal system has tobe the potential the major programme of education for girls who cannot attend school during normal school hours due to various reasons. The centrally sponsored scheme under which grants to the extent of 90 per cent are provided towards maintenance of non-formal education centres exclusively for girls in nine educationally backward states should be strengthened further and extended to other states. It should at least cover all the pockets of low enrolment of girls and areas of high dropout rate. Besides literacy, it must also provide relevant information on skill development and inculcation of positive self-image among girls.

Secondary education for girls should entail :

A ten year course in general education learning and diversified higher secondary education which may be either terminal or lead to further professional preparation; and

Diversified courses after Grade VIII in technical subjects, viz., agricultural technology, health services, food production activities such as, dairy and poultry and non-traditional areas need to be untroubled. A legal literacy component is also recommended at this stage.

(XIV) Diversified Courses : Diversified courses leading to occupational preparation should be ofparallel duration to the general secondary courses. In addition, there should be a variety of short and long term, whole time, part-time and apprentice courses. Additionally, other measures may be highlighted as :

Vocational Training Courses.

Multiple Entry System and Past-time Education.

Distance Education Courses.

Special Scholarships and Incentives.

Integrated learning programme.

Education for Working Women : All women working in industries or employed elsewhere shouldbe made literate by the employers by allotting time from the working hours for their education. Place of teaching, teachers and teaching material should be arranged by them. Necessary legislation to this effect may be enacted.

Question :

Let Us Check Our Progress

Name three burners to Women Education which according to you are the most serious. Give reasons also.

4.4.5: WOMEN EDUCATION AND FIVE-YEAR PLANS

Great emphasis has been laid on women's education in the Five-Year Plans. Let us now discuss this.

First Five Year Plan (1951-56) : The First Five Plan (1951-56) advocated the need for adoptingspecial measure for solving the problems of women's education. It held that women must have the same opportunities as men for taking all kind of works and presupposes that they get equal facilities so that their entry into the professions and public services is in no way prejudiced. It further added that at the secondary and even at the university stage it should have a vocational or occupational basis, as far as possible so that those who complete such stages may be in a position if necessary, to immediately take up some vocation or other. Accordingly, the educational

facilities for girls continued to expand in the subsequent plans. The major schemes under taken encompassed elementary education, secondary education, university education, post graduate education and research, technical education, scholarships, social education and physical education.

Second Five Year Plan (1956-61) : The Second Five Year Plan (1956-61) continued the emphasison overall expansion of educational facilities. The major schemes under taken during this period were related to elementary education, secondary education, trained women teacher to be posted in girls' school, special scholarships/schemes for girls and establishment of Fundamental Education Centres for training social education organisers. During Second Five Year Plan the enrolment of girls exceeded the estimated target fixed for the Second Plan period at all the stages.

Third Five Year Plan (1961-66) : The Third Five Year Plan (1961-66) launched importantschemes like Bal Sevika training and child care programme. The Third Plan considered the need for increasing the proportion of women students in colleges and universities to take up different occupations.

(IV) Fourth Five Year Plan (1969-74) : There was a large scale expansion of facilities for educationup to the Fourth Plan (1969-74), though vast disparities existed in the relative utilisation of available facilities by boys and girls at various stages of education.

Fifth Five Year Plan (1974-79) : The major thrust areas in the Fifth Plan (1974-79) was tooffer equality of opportunity as part of the overall plan of ensuring social justice and improving the quality of education imparted, to promote enrolment and retention in schools in backward areas and among under privileged sections of the population, to provide the incentives like free distribution of text books, mid day meals, uniforms and attendance scholarships for girls. Inspite of these schemes it was noticed that insufficient number of women teachers resulted in low enrolment of girls.

(VI) Sixth Five Year Plan (1980-85) : A land mark in the Sixth Five Year Plan (1980-85) was theinclusion of women's education as one of the major programmes under Women and Development which was an outcome of the publication of the report of the Committee on the Status of Women in India. The programmes for universalisation of elementary education were specially directed toward higher enrolment and retention of girls in schools. It was envisaged to promote Balwadi-cum-creches attached to the schools to enable girls responsible for sibling care at home to attend school. For boosting the education of women belonging to backward classes, the numbers of girls' hostels were increased.

(VII) Seventh Five Year Plan (1985-90) : The Seventh Five Year Plan (1985-90) envisagedrestructuring of the educational programme and modification of school curricula to eliminate gender bias. Enrolment of girls in elementary, secondary and higher education courses, formal as well as non formal was accorded high priority. Sustained efforts were made through various schemes and measures to reach 100 per cent coverage in elementary education. Financial assistance schemes to voluntary agencies to run early childhood education (pre-school centers) as adjuncts of primary/middle schools were expanded particularly to help evolve innovative models suited specific learner groups or areas. Efforts were made to enroll and retain girls in schools, especially in rural areas and also to enroll children belonging to scheduled caste, scheduled tribe and other weaker sections. Teacher training programmes received continued priority with a view to increase the availability of trained women teachers and there by to enhance girls' enrolment and retention in schools. So the educational programme was restructured to remove the stereo typed images of women and also emphasized on the use of radio, television, educational institution, voluntary agencies, etc.

(VIII) Eighth Five Year Plan (1992-1997) : During Eighth Five Year Plan (1992-1997) the majorthrust areas in the education sector were universalisation of elementary education, eradicaion of illiteracy in the age group of 15-35 and strengthening vocational education so as to relate it to the emerging needs of the urban and rural settings. Emphasis was laid on strengthening National Open School and Open Learning System. It focused on women's literacy and empowerment including the realization of the national objectives of population controls and family welfare.

(IX) Ninth Five Year Plan (1997-2002) : The National Agenda for Governance states, "we willinstitute plans for providing free education for girls up to college level, that is, under graduate level including professional courses would be made free". An adequate provision was made for the scheme for this purpose during the Ninth Five Year Plan. On a long term basis and in close collaboration with State and local governments, the financial implications of making education free for girls up to the graduation level were be worked out to relate to the Department of Education. The financial requirements for implementation of the concept of free education to girls up to college level was worked out by Ministry of Human Resources Development (MHRD). A new scheme called "Free Education for Girls" was devised and implemented in a time-bound manner.

Tenth Five Year Plan (2002-2007) : Performance in the field of education was estimated tobe one of the most disappointing aspects of India's development strategy. Out of approximately

200 million children in the age group of 6-14 years, only 120 million were in schools. Keeping in cognizance of this picture the Tenth Five Year Plan (2002-2007) aimed at a radical transformation in this situation. "Education for All" has been one of the primary objectives of the Tenth Plan. The principal vehicle for this has been the Sarva Shiksha Abhiyan, which is being lunched in cooperation with state governments.

The Tenth Plan set goals on some women-centric programmes, such as the existing MahilaSamakhya and two new schemes the 'Kasturba Gandhi Swantantra Vidyalaya' (KGSV) and the 'National Programme for the Education of Girls at the Elementary Level' (NPEGEL). The KGSV and the NPEGEL were proposed to take up during the Tenth Plan, with the following features :

- Focus on educationally backward areas in girls' education;
- Focus on girls from the disadvantaged section like those belonging to SC/ST minorities, etc.

Question :

Let Us Check Our Progress

1. Write a brief note on progress of Women Education during the nineties.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 4
Education and Backward Community of Indian society

Unit –3
Rural Education

4.5: RURAL EDUCATION

You have, in this Unit, already developed some ideas on the social justification of educational intervention for some special groups of people of our community who are not so educationally and economically well-potentialized in various dimensions of human development standards and they need additional opportunities for their sustainable human development in order to establish full social justice in our democratic way of life. In this Section we are advancing our discussion on education of our rural people who are still lacking some basic opportunism to their personal and social empowerment, eventhogh they are said to constitute about 70% of Indian population. Obviously, you personally may have already read the story of their real life.

4.5.1: UNDERSTANDING "RURAL"

You must have some understanding about the terms 'rural' and 'urban'. Have you ever tried to define these two terms from sociological aspects? Perhaps, no. Have you ever tried to explain to anyone in how many ways a rural area differs from an urban area? Perhaps, yes. Obviously .you have said that a rural area is posited within a Panchayet and an urban area within a Municipality/ Corporation. This actually signifies operational definitions from administrative point of view, not from sociological angle.

In Sociology term similar to 'rural' is county (UK) and Country (USA). McIver and Page in their famous book "Sociology" have made an elaborate discussion on urban and rural

habitations but have failed to put any clear cut definitions of these two terms. They have preferred to compare them and say — "Urban and rural (is) a matter of degree" and maintain, "But between the two there is no sharp demarcation to tell where city ends and country begins …. Rural and urban depict modes of community life, not simply geographical location." In a city there remains the manifold environments but in a country there is absence of many environments, rather a few with lesser variations or heterogeneity and generally remains common hours of work and rest or personal gossip or public discussion. City grows wherever a society or a group within it gains control over resources greater than are necessary for the mere sustenance of life. With the advancement of contemporary science and technology-based culture city is characterized by increase in population and with higher standards of living but a rural life is characterized by simplicity and fragility of living; lesser occupational specialization, competitive emphasis and opportunities. Therefore, urbanization is seen as a symbol of progress. Rural areas remains within umbra or umbra-penumbra interface of national development.

Question :

Let Us Check Our Progress

1. How can you differentiate a rural habitation from an urban habitation?

4.5.2 : UNDERSTANDING RURAL EDUCATION

It is a fact that the real India live in villages. About 70% of Indian live in rural areas and majority of them live under BPL The general standards of life in terms of quality in education, health and other basic facilities are not either higher or adequate. In order to achieve national progress evenly, the policy makers think after equitable distribution of facilities and opportunities to all irrespective of nature of habitations people live. Such reflective orientations are found in Gandhiji, Tagore, Bhave, etc even before independence. University Commission (1948) also recommended for establishment of rural Universities.

The issue of rural education bears linkage with 'Community Development' currently used mainly in relation to activities facilitating improvements of basic living conditions of the community (rural areas), including satisfaction of some non-material needs of people. A systematic effort in community development programme in India came with the establishment of Planning Commission in 1950 to draw up a comprehensive plan for the country as a whole But at outset it observed

some defects in distribution of opportunities and diffusion of knowledge and skills evenly and the defects it assembled were : the life of the villagers was not still taken as whole, there were various departments working in the rural areas such as co-operative, panchayat, agriculture, animal husbandry, industries, health, education, each with its less qualified and poorly paid staff at the lower level with extensive area of operation. In the first Five -Year Plan, the Planning Commission pointed out: "Community development is the method and the Rural Extension the agency through which Five-Year Plan seeks to initiate a process of transformation of the social and economic life of the villages".

We may formulate the following specific objectives of rural development:

- To change the outlook of all rural people in matters realigning to quality life;
- To develop responsible and responsive village leadership and village organizations and institutions;
- To develop the village people to become self-reliant, responsive citizens capable and wiling to participate effectively and with knowledge and understanding in the development of the Nation as co-operative partner;
- To help the village people to increase their income through improved agricultural practices and by improving existing and organizing new village crafts and industries;
- To train village youths to assume citizenship responsibilities through continuous involvement in youth and other community development programmes;
- To provide organized assistances to village women and village families in effectively converting their increased income ,better living , enhanced decision-making powers;
- To build and maintain a close inter-relation of the village school and the village developmental activities;
- To help village people to know the causes, to construct the simple facilities necessary and to practice clean habits to prevent illness;
- To stimulate the village people to be literate, educated and empowered in the changing social orders;
- To take active part in Panchayat systems, SSA activities, etc.

You may also add other objectives too. Thus, rural development does not indicate merely agricultural or industrial outputs generation enterprise. It ultimately touches whole life and lead to

a balanced social, economic and cultural development. Its major emphasis is on equitable distribution of income, housing opportunities, health, hygiene, and nutrition opportunities, opportunities to realizepeople's full potential and power to take independent decisions in most of the walks of life. It is an effort to boost production, create employment, enhance human skills, to grow immunity against poverty, diseases, exploitation, and injustice and to become constructivist in outlook. Secondly, rural development is a continuous process. It is to be placed and micro-planning development design and participative in management design.

From the above formulation of the objectives of rural development programme, we may now develop our idea about rural education which envisages to the fulfilment of these goals and it encompasses — awareness, knowledge development, skill development, skill application and transfer, and generation of continuous knowledge and skills as situations demand. Obviously, educational delivery modes must be multiple .You may try to enlist the strategies may be are used here. Then we may consider rural education constitute various aspects of educational process for attainment of goals of rural development set by community at large.

The International Institute for Educational Planning (UNESCO, 2003) puts: "More than half of the world's population and more than 70 per cent of the world's poor are to be found in rural areas where hunger, literacy and low school achievement are common. Education for a large number of people in rural areas is crucial for achieving sustainable development. Poverty education strategies are now placing emphasis on rural development that encompasses all those who live in rural areas. Such strategies need to address the provision of education for the many target groups: children, youth and adults, giving priority to gender imbalances." Further it asserts:

"Education and training need to be placed at the forefront of the rural development agenda in order to fight the evident extreme poverty and hunger in rural areas; to break the poverty-induced poverty-result cycle of rural life; to ensure sustainable agriculture, and to build the human capacity needed for development".

According to UNESCO Education for Rural People (ERP) is a topic that requires increasing attention from the international community as well as from civil society as a key element of national and global actions aiming at advancing achievement of the Millennium Development Goals, (MDGs, 2000) Education and training of the rural people are two of the most powerful weapons in the fight against rural poverty and sustainable development. Unfortunately, these are also among the most neglected aspects of rural development interventions by national governments.

That is why Food and Agriculture Organization of the United Nations (FAO, Sustainable Development Department) and the UNESCO are inviting member countries, international agencies and civil society to join the partnership on Education for Rural People (ERP) which is part of the International Alliance Against Hunger and of the Education for All (EFA) initiative. FAO as the UN lead Agency for ERP addresses rural-urban disparities by targeting the educational needs of rural people. The five broad objectives : - Overcoming the urban/rural gap in education; Increasing access to basic Education for Rural People; Improving the quality of basic Education for Rural People ; Fostering the national capacity to plan and implement ERP as part of National Education for All and Rural Development Plans.; and Building awareness on the importance of ERP as a crucial step to achieve all the Millennium Development Goals, and particularly, eradicating extreme poverty and hunger, achieving universal primary education and promoting gender equity.

UNESCO taking cues from data from various developing countries suggests Multigrade schools are often the only way to ensure quality education in rural and remote areas with low and scattered populations.

Question :

Let Us Check Our Progress

Furnish arguments for the importance of rural education.

Give a suitable definition of 'rural education'.

4.5.3 : NATIONAL INITIATIVES IN RURAL DEVELOPMENT

In the previous Section of this Unit we have got some reflections about rural education from the International perspectives. Now you will get some of those ideas and formulations what have been included progressively in our own national development agenda Since First-five Year Plan, 1951, the Planning Commission gives priority of rural development which is propelled continuously by education, training and technology transfer usually by government machinery and NGOs. Educational venture in its broadest meaning for rural development as a world-wide agenda embraces poverty reduction, empowerment and building human capacity both in material and non-materials aspects. These non-material aspects imply educational transformation of people of rural India.

The Ministry of Rural Development, Government of India plays a vital role in raising the status of the poor above the poverty line and improving the quality of life in rural areas through the implementation of various poverty alleviation programmes and providing avenues for self/ wage employment to the most disadvantaged Groups, viz. SCs, STs and others. Under the Jawahar Gram Samriddhi Yojana (JGSY), which provides wage employment, 22.5 per cent of Plan allocation is earmarked for SC/ST families living 'Below the Poverty Line' (BPL). Under the Employment Assurance Scheme (EAS) which is open to all rural poor who are in need of wage-employment, preference is given to SCs/STs and parents of child labour withdrawn from hazardous occupations who are below the poverty line. EAS have been brought under the purview of the mega scheme of SampoornaGraminRozgar Yojana (SGRY) since September 2001.

For taking up self-employment and income-generation activities, Swarnajayanti Gram Swarozgar Yojana (SGSY) stipulates that at least 50 per cent of the swarozgaris will be from SCs/ STs.

Under the Accelerated Rural Water Supply Programme (ARWSP), states are required to utilize a minimum of 25 per cent of funds for provision of drinking water supply to SCs. Around 23.1 million SCs have been benefited, accounting for 18.1 per cent of total beneficiaries under ARSWP. Under the Central Rural Sanitation Programme (CRSP), sanitary latrines are provided to rural population with preference to SC/ST families and people below the poverty line.

The National Social Assistance Programme (NSAP), comprising the National Old Age Pensions Scheme (NOAPS), the National Family Benefit Scheme (NFBS) and the National Maternity Benefit Scheme (NMBS) introduces a national policy for social security assistance to the poor SC/ST families and represents a significant step forward.

Current Literacy Programs :

Rural Functional Literacy Project (RFLP) : Adult Education Centres are set up by RFLP in all the States and Union Territories. They are fully funded by the Central Government although the State Governments and Union Territory Administrations are responsible for its implementation.

State Adult Education Program (SAEP) : Funded fully by the State Governments, this program aims at strengthening ongoing Adult Education Programs and expanding its coverage to ensure that the programs reach women and other underprivileged groups.

Adult Education through Voluntary Agencies : A Central Scheme of Assistance to Voluntary Agencies exists to facilitate the participation of Voluntary Agencies.

Involvement of Students and Youth in Adult Education Programs : The University Grants Commission provides 100 per cent financial assistance to colleges and universities to support their active involvement in literary and adult education activities. Simultaneously with the adult education program, the college and university students are engaged in spreading universal primary education among non-school-going children.

Nehru YuvakKendras : This non-student youth organization has been developing training programs to educate young people according to their identified felt needs.

Non-Formal Education for Women and Girls : This project puts special emphasis on improving women's socio-economic status by ensuring their participation in development programs in addition to efforts for family planning and promotion of welfare of children. This program is a joint effort of the Government of India and UNICEF.

ShramikVidyapeeths : This program has been established and ever since funded by the Government of India with the aim to provide integrated education to urban and individual workers and their families in order to raise their productivity and enrich their present life.

Central Board for Workers Education : This program aims at providing literacy to unskilled and semi-skilled persons as well as raising their awareness and functionality...

Functional Literacy for Adult Women : Started in the International Year of Women, under the sponsorship of the Government of India, this program covers health and hygiene, food and nutrition, home management and child care, education, and vocational and occupational skills.

Incentives Awards Scheme for Female Adult Literacy : Designed to promote literacy among 15-35 year old women, this scheme presents awards to adult education centres (at the district, and Union Territory levels).

Post-Literacy and Follow-up Program : The program has been in operation since 1984-1985. The Directorate of Adult Education has developed broad guidelines for the preparation of neo-literate materials for the State Governments and State Resource Centres. Prototype neo-literate materials have also been produced.

The listed activities reflect India's determination to make the entire population literate by involving the other Government agencies related to development as well as Universities and Voluntary Organizations in literary activities. The responsibility for planning and financing these activities, however, rests with the Central and State Governments. It is important to keep in mind that local bodies play the most vital part in the matter of all these governmental initiatives for improvement in education, empowerment and quality of life of the rural people.

Question :

Let Us Check Our Progress

Name some important centrally sponsored programmes linking to poverty alleviation of the rural people.

Name some schemes appropriate for educating the village people.

4.5.4 : EDUCATIONAL NEEDS FOR RURAL DEVELOPMENT

The educational needs for rural development can be categorised under the following four major areas and other necessary life-skills building.

General basic education comprising literacy, numeracy and understanding one's environment.

Family improvement education such as awareness, attitudes and values to improve the quality of family life on health, nutrition, childcare, etc.

Community improvement education to strengthen local and natural institutions and building skills related to micro-planning at both family and community levels.

Vocational education related to income generating activities and for setting ups cooperative ventures.

These four types of education are essential for all rural people male/female, young/old including the socio-cultural-economically disadvantaged groups.

Illiteracy has been identified as one of the stumbling blocks to development. The overall literacy percentage is only 36.12 per cent in India since 64 per cent of the population is illiterate. There is a serious imbalance between the highly educated and the completely uneducated. The

whole appeal of education does not lie in its usefulness alone, it is even more significant as a symbol of freedom and of hope. A revolutionary increase in the number of educated rural people is the need of the hour in a democracy like ours.

Building competencies in independent decision-making at every fabric of life are stated to be most important objective of rural education.

4.5.5 : PROBLEMS IN RURAL EDUCATION

Although rural people lead a simple and less complex lives, they also suffers from a various problems. The problems of rural people are given below:

The weaknesses of a rural education programme devoted only to the teaching of the traditional knowledge and skills, in isolation from and unrelated to the life in rural communities, may be summarized as :

Even what is taught in such schools is but poorly learned, because effective learning takes place only when children understand what they are learning and see purpose and meaning in it.

Real learning comes with experience. Unless what is to be learned grows out of and is related to the experiences of the children, it is in grave danger of being regarded as but temporary and decorative.

Such education is devoted too largely to teaching material that is non-functional, with no application in daily living.

The needs of rural society and of the world today are such that society cannot safely maintain schools that ignore these needs. In fact, it seems probable that the traditional loyalty of the people to public education will be weakened unless school in all communities genuinely merit it.

Such education ignores the facts that children learn much out side the classroom and that classroom learning may be less influential than is commonly supposed in determining what kind of persons, children become as they grow to adulthood.

There is need for a co-ordination of in-school and out-of-school learning so that both are reinforced and made more effective. After all, in-school and out-of-school experiences are but divisions of the one life of the child.

> The final and fundamental weakness of this limited viewpoint is its failure to recognize the broad purpose of education. These purposes include much more than the teaching of abstract knowledge and the acquiring of literacy skills. The purposes of education today are as broad and inclusive as the democratic way of life. So much for the viewpoint that schools need not necessarily relate to community life. In sharp contrast with this viewpoint is the one held by many rural leaders, that the rural school should be the center of significant community activities, that rural teachers should be among the leaders of the community, and that schoolroom activities should reflect the life of the community.

India, however, is still seen to be lagging behind in the field of primary education, characterized by irregular attendance, high dropouts and non-completion of primary education children. One of the reasons for these lie in the socio economic conditions of rural India.

The role of the economic factors influencing schooling decisions is of primary importance. Studies reveal that factors such as higher income levels, land ownership, non-agricultural occupations, adult women's workforce participation, and the economic motivation in the son's education are positively correlated with high enrolment, attendance and continuation of children in primary education.

On the other hand, poverty has impeded primary school attainment. Poverty is a hindrance to schooling because of education-costs, which are of two types-opportunity costs and direct costs.

The opportunity costs refer to the 'value' of time lost when children forgo work and attend school. The role of the girl child and her burden of domestic work; the role played by boys in supplementing farm labour; the differential labour participation by children of different age groups; and the economic uncertainly and instability faced by really poor families, have all hindered sustainable schooling. The direct costs of schooling, the actual amount of money spent by families on primary education, are found to be significant in many parts of the country, although primary schooling is supposed to be "free" in government schools. This takes the form of expenditure on notebooks, stationary, uniforms, sports and exam fees and of late on private tuitions and guidebooks. The various incentive programmes of the government to meet these direct costs have not successfully reached those for whom they were intended. However, the mid day meal scheme has been successful in increasing enrolments in many States.

A number of nationwide surveys, probing reasons for the non-attendance of children, indicate that high direct costs of schooling, children being required for work, and the lack of interest in studies by parents and children, have been the major reasons for non-enrolment and dropping out.

A large numbers of people are socially, economically and educationally backward i.e. ignorant in rural areas. In India many villages do not have schools and some of them do not have teachers, and some others are not in working conditions. Lack of education has contributed to the development of traditionalism.

Due to ignorance, superstition, poverty and illiteracy the rural people have become the victims of some habits and practices which are one of the major obstacles for the development of rural population.

4.5.6 : STRENGTHENING RURAL EDUCATION

In order to arrest the problems of education in rural areas sincere efforts should be made to expand the quantity and quality of education in rural areas. Rural educational institutions should :

Provide increasing number of students, especially from disadvantaged background, with specialized skills, because specialists are increasingly in demand in all sectors of the world economy.

Teach students not just what is currently known, but also how to keep their knowledge up to date, so that they will be able to refresh their skills as the socio-economic environment changes.

Provide new technology-based tools for gathering knowledge and it must become central elements of their education, and curricula should be designed so that students lean how to earn.

Increase access for economically and socially marginalized population including women.

Increasing motivation of the target groups by all known means.

Maintain a transparent and informal dialogue needs to take place, bringing together educators, industry, government, prospective students and other stakeholders.

Motivate rural people to participate in micro-level educational programmes.

4.6: SUMMING UP

The development of the scheduled caste, tribal people and other backward classes cannot be guaranteed through Government help alone. The co-operation of the society is necessary for it, as their problem is a social problem which concerns the whole country. Their condition cannot be improved only through Government Laws and Regulations. It is estimated that about one-half of the total population of India belong to either SCs, STs or OBCs. A general consciousness has to be generated throughout the country for the needed intervention of people of such groups. It has been suggested to introduce compulsory education for improving the condition of these people. But is it practical or feasible without people motivation for needed skills-building educational contents and delivery modtidesSome programmes have been suggested for education of the disadvantaged sections of our community.

Education of women is very important for the progress and development of the country. At present, there is a big gap between the boys and the girls in their enrolment and schooling. There are large differences in rates of literacy. For making women's education popular, school-going should be made convenient and acceptable for girls, special incentives should be given to women teachers, accommodation for lady teachers should be provided near the schools, a social climate needs to be created among the village community, family education should be made an integral part of women's education. Contents of education should emphasise the needs of womanhood. The Central and State governments should join hands and seek the cooperation of voluntary agencies, part-time education programmes should be started, post-elementary education should be made job-oriented and help of women's associations should be obtained.

Unless and until the rural population is educated, the country cannot function effectively as a democracy. For achieving this, not only have the educational technologies to be exploited but also thecommunication inputs through these technologies and inter-personal channels should be linked together so as to achieve effective interface and inter-play of the information through different sources for optimum results. The communication technologies with their potential to improve learning, are elements in the evolution of a more effective and efficient education system for the rural population.

Thus, from sociological analyses of all the above three issues, our educational lesson is that effective educational intervention is the powerful lever for a balanced national development.

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4.8: ASSIGNMENTS

Discuss the educational problems faced by the socially and economically disadvantaged children in India.

Discuss the constitutional safeguards provided for the education of the SCs, STs and OBCs.

What difficulties are generally experienced in spreading education among women? What suggestion can you offer to remove them?

Analyse the problems faced by the rural children of our country. Give specific suggestions for irradiation of those problems.

Express your understanding how the various Five-Year Plans have envisaged for progressive development of women education in India.

Write a brief note on — Educational information of the people of socially, economically and educationally deprived sections of your community.

BLOCK – 5: EDUCATION AND SOCIAL ORGANIZATION

Unit - 1

Social Organization

Unit - 2

Social Group

Unit – 3

Folkways

Unit – 4

Mores and Social Institution

CONTENT STRUCTURE

5.1 : Introduction

5.2 : Objectives

5.3 : Social Organisation

5.3.1 : Categories of Social Organisation

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5.4.1 : Group Dynamics

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5.1: INTRODUCTION

It is not too difficult to conceive that we prefer our social life to be organized. On the other hand, we dislike disorganization. Social organization, then, implies existence of some regulations, standards, common interests, for which we form a big or a small group which, in turn, is characterized by its structure as well as functions. The structure refers to some agglomeration of individuals while functions refer to some human acts, generally interactions. These may be termed as the anatomy and physiology of social organization. Moreover, we may also keep in our mind that our formal teaching-learning is organized in classroom which is also an organized group of pupils with common interests and its functions are actualized in the form of some interactions, generally regulated by some standards. Therefore, we may say that our classroom is a social organization. For attainment of the goals of classroom group we need understanding sociology of it for maximizing pupil learning.

In this **Unit** we are going to have some understanding about social organization first and then we shall attempt to understand clearly how far we can make our classroom group functioning more effective with our knowledge about sociology of classroom group. Finally, we shall set our minds to some other fundamental constructs of sociology, such as folkways, mores and institution.

5.2: OBJECTIVES

After going through the Unit, the learners will be able to

1. Define Social Organisation.
2. Classify Social Organisation.
3. Understand the factors of Social Organisation
4. Understand the Concept of group and its characteristics.
5. Explain group dynamics.
6. Discuss the different sociological determinates namely folkways, mores and institutions.
7. Understand educational significance of social organisation and its various components.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 5
Education and Social Organization

Unit - 1
Social Organisation

5.3: SOCIAL ORGANIZATION

Traditionally, "organization is viewed as vehicle for accomplishing goals and objectives". While this approach is useful, it tends to obscure the inner-working and internal purposes of organization itself. Another fruitful way of treating organization is as a mechanism having the ultimate purpose of offsetting these forces, which undermine human collaboration. In this sense, social organization tends to minimize conflict and to lesson the significance of individual behaviour. Social organization enhances the predictability of human action because it limits the number of behavioural alternatives available to an individual. In addition to all of this, social Organization has built in safeguards. Besides prescribing acceptable forms of behaviour for their, who elect to submit to it, social organization is also able to counter balance the influence of human actions, which transcends its established patterns.

According to modern dictionary of sociology, social organization means a relatively stable pattern of social relationship of individuals and the subgroups within a society or group, based upon systems of social roles, norms and shared meanings that provide regularly and predictability in social interaction and in this sense, social organization is essentially synonymous with social structures.

So a social organization is a large grouping of people, structured on impersonal lens and set up to achieve specific objectives. Typical Social Organization includes Hospitals, Armies, Churches as well as Schools and Universities, etc.

5.3.1: THEORY OF ORGANIZATION

Organization theory, however, is not a homogenous science based on generally accepted principles. Various theories of organization have been and being evolved. In any event, three theories of organization are having considerable influence on management thought and practice. They are – clasical, the neo-classical and modern theory. Each of these is fairly distinct, but they are not unrelated.

The Classical Doctrine : The classical doctrine is built around four key patterns. They are thedivision of labour, the scalar and functional process, structure and span of control.

The division of labour is without doubt the cornerstone among the four elements' (e.g., Krontz

8.O. Donnell 1959, ch. 7). The scalar and functional process deal with the vertical and horizontal growth of the organizatio. Structure is the logical relationship of functions in an organization arranged to accomplish the objectives of the company efficiently. Structure implies system and pattern. The span of control concept relates to the number of subordinates a manager can effectively supervised.

Neo-classical Theory of Organization : The neo-classical school is concerned commonly withthe human relations movement. One the main contributions of the neo-classical school is the introduction of behavioural sciences in an integrated fashion into the theory of organization. It would be useful to look briefly at some of the contributions made to organization by the Neo-classicists. First to be considered are modifications of the pillars of classical doctrine; second is the informal organization.

Modern Organization Theory : The distinctive qualities of modern organization theory are itsconceptual analytical base, its reliance on empirical research base and above all, its integrating nature. These qualities are framed in a philosophy, which accepts the premise that the only meaningful way to organization is to study it as a system. The modern organization theory will be more useful to discuss the various ingredients involved in system analysis. They are the parts, the interactions, the processes, and the goals of system.

Max Weber's Theory of Organization : Max Weber developed the first systematic interpretationof the rise of modern organization. Organizations, he argued, are ways of co-ordinating the activities of human being. According to Weber an organization needs written rules

for its functioning, and files in which its 'memory' is stored. Weber saw organization as strongly hierarchical, with power tending to be concentrated at the top. According to Weber all large scale organization, tend to be bureaucratic in nature.

Question :

Let Us Check Our Progress

9. Write down the main difference among classical, neo-classical and modern theories of organization.
10. What are the essential parts of 'system analysis'?

5.3.2: CATEGORIES OF SOCIAL ORGANIZATION

In a society the activities that an individual undertakes fall under two broad categories: those, which he himself plans, and those, which are planned for him by others. In the former, no formal authority is created and, in the latter, a formal authority designed to achieve certain purposes is created.

There are two main categories of social organization — (i) Formal Organization & (ii) Informal Organization.

1. Formal Organization

The Social arrangement in which a group of people plans the activities that others are obliged to participate, is called a Formal Organization. For example, a school or a college is a formal organization in as much as the teachers plan the activities of students in order to teach them. Similarly, all large-scale organizations are formal organizations. According to modern dictionary, formal organization is a highly organized group having explicit objectives, formally stated rules and regulations and a system of specifically defined roles, each with clearly designated rights and duties. Usually formal organization includes schools, hospitals, voluntary association, co-operatives, govt. agencies, etc.

Elements of Formal Organization : Three things are generally required in order to plan socialactivities systematically. (a) a theory of how the activities are to be planned in order to achieve the purpose or objective of the organization. (b) resources, which can be mobilized for the purpose.

11. creation of a clear-cut-authority system to direct the activities in a planned manner, so as to ensure the achievement of goal for the organization.

The Theory : No formal organization can succeed in the absence of a clearly defined set ofideas as to how the activities are to be carried out over a period of time, taking into account the possible changes in the variables in future. A theory consists of the following :

A technical-costs theory – In order to ensure the success of a planned activity, there mustbe an informed awareness about the required technical resources and costs to be incurred for having those resources.

A Market theory — A part of the planning process is not simply to ensure the high qualityof a service, but also to be certain that the service in question has a demand. For instance, the best available teachers are recruited to teach a subject which fails to attract students, the entire enterprises falls through.

Resources : All organizations need resources. We may think of three kinds of resources — men, money and materials. Men who are involved in the activities of organization, directly or indirectly, are to give to the organization time which they could utilize elsewhere. Similarly, financial resources, which have many other alternative uses, must be attracted to the organization. Finally, no organization can achieve anything in the absence of needed materials. Materials may also consists of tools, or libraries or means of transport or any other thing specially required for carrying out the activities.

The authority system : The optimum use of resources, demands a well-knit administrativestructure, providing for supervision, control and discipline, the essential elements of such a structure are the following :

To fix responsibility for action taken is very important task. (ii) Supervision of activitis is necessary in order to ensure the work progresses according to schedule. (iii) Discipline is necessary in every walk of life. An organization which scores low in terms of discipline is more likely to fail in achieving its goal and vice-versa.

2. Informal Organization

The system of personal relationships that develops spontaneously as individual interacts within a formal organization. Every formal organization has an informal aspect to its social organization, which is not planned and not formally stated. Informal relationships grow even in a highly integrated, formal organization. Such informal groups may be utilized for furthering the goals of the formal organization.

Sometimes such groups may also prove to be dysfunctional in so far as they impale the attainment of the goals of the formal organization. The informal social organization includes social norms, rituals, traditions, sentiments and sub-groups that influence the functioning of the formal organization but one not officially recognized.

All large-scale organizations, according to Weber, tend to be bureaucratic in nature. The word 'bureaucracy' was coined by a Monsieur de Gournay in 1745, which added to the word. 'Bureau' meaning both are office and a writing table, a term derived from the Greek verb 'to rule'. Bureaucracy is the rule of officials. In order to study the origin and nature of expansion of bureaucratic organization, Weber constructed ideal type of bureaucracy.

Weber listed these particular characteristics of bureaucracy:

3. There is a clear-cut hierarchy of authority.
4. Written rules govern the conduct of officials at all levels of organization.
5. Officials are full time and salaried.
6. There is a separation between the tasks of an official within the organization and the official's life outside.
7. No members of the organization own the material resources with which they operate.

So, from the above we see that the formal organization is a system of rules and objectives, which officially prescribe and allocate tasks, privileges, and responsibilities, thereby specify how the activity of a group is to be carried out.

Question :

Let Us Check Our Progress

8. Distinguish between 'informal' and 'formal' organizations.
9. Do you find any trace of bureaucracy in our school systems? — Explain.

5.3.3: FACTORS AFFECTING SOCIAL ORGANIZATION

There are, on the main, six factors affecting a social organization. These are :

(i) Complexity

According to Jean Stockard Complexity is defined as "The extent to which the work of an

organization is broken up and differentiated among various units reflects its organizational complexity."

The first method of measuring complexity is horizontal differentiation. It suggests to look at horizontal differentiation of an organization divided up among different units or subgroups such as colleges and universities, have a great deal of horizontal differentiation with several different department and colleges.

The second method of measuring complexity is to look at vertical differentiation, the number of supervisory levels in an organization.

(ii) Formalization

It deals with an organizational rules and procedures to control individuals within it. Formalization of any organization includes :

(i) It is highly specified.

(ii) It is related to the organizational structure

10. Formalization within an organization may have flexibility and changing attitude though it is basically rigid.

11. Formalization is a controlling mechanisms of employees by imposing rules.

a. Centralization

12. The extent to which organizational power is centralized and decisions are made hierarchically is referred to as organizational centralization. (Stockard)

13. Generally centralized organizations are bureaucratic and follow the hierarchical order.

14. In our educational system, it follows less centralized mode in case of employment of teachers, and mission, decisions about curriculum teaching methods and discipline.

a. Informal Structure

15. It does not follow the written rules and regulations.

16. Various types of interactions and relationships are giving importance in informal structure.

17. Besides organizational hierarchy other related persons can influence the actions and activities of the organization.

18. Informal communication can actually be much more effective than formal communication in on organization.
19. Individuals will be more effective when they are linked into informal networks.

20. Technology

21. It's the essential factors for improving the system approach of an organization.
22. The technology, an organization worked with can be more on less complex and diverse.
23. Technology can accelerate to achieve the basic target of the organization.
24. To control the structural complexity use of technological devise is an integral factor in todays perspective.
25. In general an organization's technology contributes the category of structures that best suit the organization.

a. Organizational Culture

26. It includes all the components of culture, namely forms, values, belief systems, ideologies, folklore, myths and symbols.
27. It will help group effectiveness.
28. Institutional culture can enhance group belongingness and also favours vocational practice and academic achievement.
29. An organization's and individual identification with the organization influences the process in which decisions are made.
30. Culture is the ultimate root to expose human development for better work culture.

Question :

Let Us Check Our Progress

31. Indicate the major factors that influence the organizational culture of our secondary schools.
32. Explain in your own words — 'Centralized organizations are bureaucratic.'

5.1.7 : SOCIAL INSTITUTION

Institutions are usually defined as certain enduring and accepted forms of procedure governing the relations between individuals and groups. 'Ellwood who thinks that institutions are' habitual ways of living together which have been sanctioned, systematized and established by the authority of communities. So Social Institution defined as established forms of procedure. Institution is the characteristic agencies of any permanent human association ; they are the wheels on which human society marches on ; the 'machinery through which society carries on its activities.' In every association, we must distinguish the objects, for which it exists, and the ways of attaining them ; namely, its institution. The main function of the family, as a social group, is the propagation of mankind ; while marriage, the system of property, and inheritance, are its main institutions. The notion of institution is very similar to the idea of custom but an institution, while being also social and normative, is more impersonal and less spontaneous than custom. An institution is, as such, more widely recognized and held as necessary for society than custom.

Social Organization and Social Institution : In sociological terms, social institutions are notspecific organization, such as particular universities churches or hospitals. Rather they are broad areas of social life, such as family, the economy, political system and religion, involving norms, stabilities and rules. Social institution will generally influence the way your society works. Societies everywhere meet the basic needs through social institution. Sociologist suggested that all society have several basic social institution such as :

- Ø The government or policy, which defines the legitimate use of power and the ways in which order will be maintained.
- Ø The economy, which defines how goods will be produced, distributed and used.
- Ø Religion, which defines our relationship with the super natural.
- Ø Education, which is responsible for the teaching of young generation.
- Ø The family, which regulates adult's sexual relationship and the reproduction and carring of children.

So social institutions are the functional part of the social organizations. Each and every social organization has specific goals and the social institutions are the socially admitted way to achieve those specific objectives or organizations.

5.3.4: EDUCATION AND SOCIAL ORGANIZATION

Education is a process, which helps in the achievement of the purposeful living in the society, and a society is a product of its social forces. Education is a strong agent towards building a social individualism. It develops norms, values, knowledge understanding of individual. It helps to move the society.

Life in the present day society has become largely associational in the nature. Various organizations cater to the variety of needs of people. The most general referent of social organization is co-ordination of social norms, sanction and action systems. So organization emphasizes the co-ordination of social relationships. In fact, hardly any aspect of social life, particularly in urban areas, is left which is free from organizational planning. Works of art are not patronised today by individual connoisseurs of art but by highly organized museums. Like wise, a network of libraries meet the need for reading materials of a large number of people the prime objective of education is to occupation. We see that occupation multiply as the number of specialised organizations increases and as the creation of sub-organizations within organization progresses. As a result, people become specialised in particular activities. Multiplication of occupations also leads to the growth of variety of economic-interest groups that we find in modern society.

We consider the schools, college and universities as a social organization, because it has structures, goals, functions, bureaucratic aspects, professionalism and growth. School as a social organization play some important roles for society. Schools help to socialize the young to perform needed adult roles, keep the young occupied, delay entry in the job markted, help perpetuate society, socialize the young into particular social values, traditions and beliefs, develop skills needed to live in society such as responsibility.

So, different social qualities can be achieved by social organizations. Different government organizations helps the nation at national level and different non-government organizations like Ramakrishna Mission, Bharat Sebashram Sangha and different sport oranizations, religious organizations perform different special functions for society.

Education in one side helps the society to perform proper organizational behaviour and on the contrary organizational activity helps to learn different social qualities and thereby educate the society to maintain socialization. Leadership quality of a teacher in a society has greatly influenced the studentand thereby helps social organization to build its character.

One of the objectives of education is to maintain equalization in society but social organization characterise a hierarchy of authority and thereby a informal network tend to develop at all levels of both within and between organization.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 5
Education and Social Organization

Unit - 2
Social Group

5.4: SOCIAL GROUP

We know that any social organization is viewed as vehicle for accomplishing goals and objectives and for one purpose, a group is any number of people who share goals, often communicate with one another over a period of time and one few enough to so that each individuals may communicate with all the others persons-to-persons. In other words, a social group has an organized aspects (rules, rituals, structures etc.) and a psychological aspect (consciousness of the member). Thus a social group is a collection of number of persons linked together in a system of social relationship with one another. Man's life is to an enormous extent a group life and social group is a collection of individuals interacting on each other under a recognized structure.

According to Harry M. Johnson, 'A social group is a system of social interaction'. Marshal Jones is of the opinion that a social group is "two or more people between whom there is an established pattern of interaction."

R. M. Maclver and Page defines social group as "any collection of human beings who are brought into human relationship with one another."

Bottomore defines a social group "as an aggregate of individuals in which (i) definite relations exist between the individuals comprising it, and (ii) each individuals is conscious of the group itself and its symbols."

5.4.1: CHARACTERISTICS OF SOCIAL GROUPS

The main characteristics of social groups are as follows :

33. ***Collection of Individuals*** : Social group consists of people. Without individuals there canbe no group. Just as we cannot have a college or a university without students and teachers, we cannot have group in the absence of people.

34. ***Interaction among Members*** : Social interaction is the very basis of group life. The membersmust have interaction. The limits of social groups are marked by the limits of social interaction.

35. ***Mutual Awareness*** : Group life involves mutual awareness. Group members are aware of oneanother and their behaviours are defined by this mutual recognition.

36. ***"We-feeling"*** : "We-feeling" refers to the tendency on the part of the members to identifythemselves with the groups. It represents group unity.

37. ***Group Unity and Solidarity*** : Group members are tied by a sense of unity. The solidarity orintegration of a group is largely dependent upon the frequency, the variety and the emotional quality of the interaction of its members.

38. ***Common Interests*** : The interests and ideas of group are common. Groups are mostly formedestablished for the fulfilment of certain interests.

39. ***Seminar Behaviour*** : The member of group behaves in more or less similar way for thepursuit of common interests.

40. ***Group Norms*** : Every group has its own rules or norms, which the members are supposedto follow.

41. ***Size of the group*** : Every group involves an idea of size. Social groups vary in size.

42. ***Groups are Dynamic*** : Social groups are not static but dynamic. They are subjected tochanges whether slow or rapid.

43. ***Stability*** : Groups are stable or unstable, permanent or temporary in character. Some socialgroup like the crowd, mob audience, spectators group, etc. are temporary.

44. ***Influence of Personality*** : Social groups directly or indirectly shapes the personality of theremembers. They also provide opportunities for the expression of individuality.

5.4.2: CLASSIFICATION OF SOCIAL GROUPS

Social Groups are not only innumerable but also diverse. A systematic study of groups demands a scientific classification. But different sociologists classified social groups on the basis of different criteria. Groups have been classified variously on the basis of factors such as, – racial features, religious beliefs, territory, nature of govt., caste. sex, age, class, occupation, blood relationship, degree of organizaion, nature of social interaction, range of organization, range of interest, permanent and temporary nature and degree of mobility and so on.

45. ***In-Group and Out Group*** : According to W. G. Summer an 'In-Group' is simply the 'We-group' and an 'Out-group' is 'They-group'. Here the common interests of a group and the attitudes that support the interest are reflected in the group destination.

46. ***Institutional Groups and Temporary and permanent Group*** : Charles A. Ellwood in his'Psychology of Human Society' has mentioned that involuntary groups include the groups such as family, city, caste, etc. and voluntary groups include political parties, youth association and religious and cultural association and the institutional group are mostly permanent in nature i.e., church, state, the school and non-institutional groups are temporary in nature such as crowed, mobs, public audience, etc.

47. ***Horizontal Group and Vertical Group*** : According to P. A. Sorokin, the former are larger,inclusive groups, such as nations, religious organization and political parties and the latter are the smaller divisions, such as economic classes, which gives the individual his status in society.

48. ***Territorial Groups and Non-Territorial Groups*** : Territorial groups are largely permanent innature (communities and states) and non-territorial groups include classes, caste, crowd and public.

49. ***Primary / Face-to-Face Group and Secondary Groups*** : On the basis of nature and qualityof social interaction, C. H. Cooley classified the groups in primary and secondary group. The primary group is most effective whether it is temporary or permanent. Even when the primary group is part of a large organization, as the school or college football team it keeps the characteristic feature of group. At the other end of group scale is so far as size and structure are concerned, either is the secondary group of which the large-scale organization born and developed in our industrial

society. Secondary groups are transitory in character; they do not last very long. So secondary groups are unstable in nature. Relationships among members of secondary groups are formal and impersonal.

50. ***Genetic Groups and Congregate Group*** : F. O. Giddings has introduced this group conceptas genetic groups are involuntary in nature and the individuals are born in them e.g., family group, racial group, etc. and congregate groups are voluntary in nature like political party, trade owner, etc.

51. ***Small Group and large Group*** : George Simmel introduced this classification on the basisof size as the characteristic feature of group. Small group include dead, tried, etc. and largegroup are political group, nation, etc. Here, we see members of a group affected its organization and the social interaction within it.

52. ***Informal Group and Formal Group*** : In case of informal relationships emerge from frequentinteraction among members who come together freely and spontaneously as play group, Study group or a group of friends and though the members of these groups may not develop any formal organizaion but they grow a sense of common identity and share common values and obligations and the formal group has formal relationship among the members and the formal groups which are organized in a hierarchical principle.

53. ***Organized Group and Un-organized Group*** : In case of organized group specific interestsof the members are fulfilled and in case of unorganized group the members are un-organized and organized group possess different structures.

54. ***Effective Group*** : Its members know why the group exist and they have shared the goals.Its members have learned to receive help from one another and to give help to one another.

From the above classification, we see here that the characteristics of a social groups are the main criteria of the classification of groups. The characteristics of the groups are reflected in different types of social groups. In the all types of social organization a collection of individuals interacting on each other from different types of groups. We see most of the groups are established for the fulfilment of certain character. We see some types of groups are permanent in nature i.e., here stability is the criteria of the classification. Some groups are large and some are small and each type of social groups directly or indirectly shape the personality of their

members. So, we see each and every types of group has its own rules and norms. So, it is clear that different characteristics of social group are reflected in different types of social group and how the members inter-act, is also the basis of classification of different types of social group.

Question :

Let Us Check Our Progress

55. Classify the groups that exist in a school.

56. Formulate your own defintion of 'social group'.

5.4.3: GROUP DYNAMICS

We know, effective teaching is possible in groups. Academic, social and emotional growth can be possible through group relationship in classroom situation. The study of group dynamics exposed to us that how the amount of interaction and nature of group relationship in a classroom is operated. Teacher should know how to direct group forces that can able to develop their social qualities because the social atmosphere is very largely created and maintained by pupil interaction and their functioning. Different psycho-social development is generated by means of group dynamics discussed below :

1. Effective Social Membership

An individual become members of healthy groups, help steer and improve a group, they have helped themselves to improve their personal identity, besides to develop ability to work more effectively with others.

The school has a responsibility for the total growth of the whole child, if only because learnings cannot be completely compartmentalized for healthy to take place. In addition, effective membershipability on the part of students means that the class group can produce more individual learning. There is no place in the classroom to learn how to become an effective member, and thus secure the emotional gains of acceptance, belonging etc. and opportunity for creative production.

2. Group Mental Health

The mental health of a class group is an important factor for individual ; growth. Group and

individual mental health are interactive. The class climate affects the emotional health and development of the individual student as well as his degree of learning.

Stress, anxiety, feeling of rejection, failure and lack of belongingness are essential factors for mental health of the individual. Group interaction and their proper leadership many reduce the unhealthy disposition of the learners.

Emotional support is being supplied by the group to the student thereby going acceptance and membership to the students receiving help. Feed back about performance can be given by student to student as well as teacher to student when the classroom climate is less competitive.

3. Social-Emotional Learning

Socio-emotional learning is important for effective learning. expected socio-emotional development demands the quality of group membership.

Learning is possible in a meaningful social environment. But that is not possible through isolation.

Emotionality gradually become controlled under group situation.

4. Democratic Values

In a classroom situation by their mutual interaction learners can develop qualities of leadership, co-operation, responsibility and democratic living Democratic values demand democratic attitude of learners and teachers with each other. Only by proper mobilisation of group social group attitude is possible.

5. Social leadership

Social leadership is the essential condition for making a social group effective. In a classroom situation effective leadership can able to fulfil the teaching-learning process successfully. Leadership ability always makes a group effective by executing various group activity.

5.4.4: METHOD OF GROUP DYNAMICS: THE SOCIOMETRIC TECHNIQUE

The sociomatrix can be easily constructed by the following steps :

1. It should contain at least ten squares more both vertically and horizontally than the number of students in the class.

2. In the left hand margin down in the rows write the names of all the barners in the class according to roll numbers. Leave a space and them write the names of all the girls according to their roll numbers.
3. Write the roll numbers of students in the same order as in the rows, in the columns across the top margin of the table.
4. Draw a thick line between the list of boys and the list of girls both horizontally and vertically if there is a co-educational students.
5. Choices are given in three dimensions : (i) cohesion (1st choice) (ii) Second choice (iii) Unchosen.

Sociometric questionnaire through which choices of the students are being done

1. Which three students from this classroom, would you like to have as your seating companions ?
2. Which three students of this classroom would you like to play with during recess in school. ?
3. Which three students of this class would you like to do any activity ?
4. Which three students of this class would you least like to associate with ?

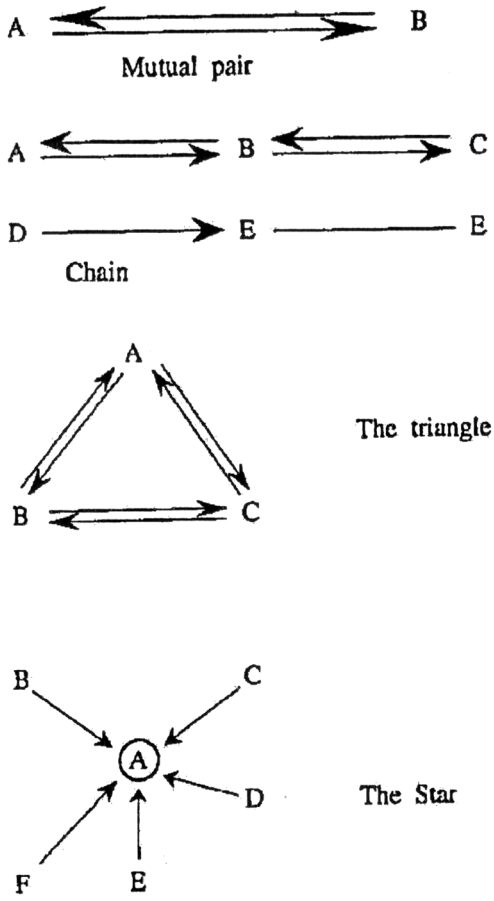
Chosen Shooser	1	2	3	4	5	… ..	N
1	… ..	1 1 0	0 1 0	… ..	0 0 3	… ..	
2	1 1 1	… ..	0 2 2	2 0 2	2 2 3	… ..	
3	0 1 0	0 0 2	… ..	1 2 1	1 0 1	… ..	
4	0 0 1	2 2 2	1 1 1	… ..	0 0 2	… ..	
5		1 0 0	0 1 0	3 1 2	… ..	… ..	
… ..	… ..	… ..	… ..	… ..	… ..	… ..	
N	… ..	… ..	… ..	… ..	… ..	… ..	
Total	**1 2 2**	**3 2 2**	**1 4 2**	**3 2 3**	**2 1 4**		

Sociometry Status Score : Interpretation

The choices received by a student are obtained by counting each entry mode in each students vertical column. as one, regardless of whether the choice is given as 1, 2 or 3. The totals are entered in the row labelled 'Totals on Each Criterion' at the bottom of the matrix table. Summing the three totals in each column, the overall sociometric status score is obtained to find out (1) Stars (most liking) (2) Unpopular (3) Rejected and (4) Isolates.

Understanding Group Structure : Sociogram

Sociogram displays the information tabulated in sociomatrix pictorially. It relfects the underlying social structures of a group.



The 1st of these is the mutual pair, in which 'A' is attracted to 'B' and 'B' is attracted to 'A'. Then there are the chain structures which may or may not involve mutual attractions. Triangle is the simplest, show the attractions between individuals who form better relationship within the

whole group. Another configuration is that where a number of individuals are attracted to one person who many or may not reciprocate their choices. This individual is usually called a 'star'.

In most groups there are a few individuals who are not chosen by anyone are afferreffered as isolates. Neglectee who makes choices but is not himself chosen by anyone. Rejectee are those who is not only unchosen but is also actively rejected by other people.

Sociology of education is guided by two words. One is interaction and another is relationship. In a classroom situation both the concept of interaction and relationship is understood by group dynamics the key concept to visualise the classroom environment in a better way.

Question :

Let Us Check Our Progress

57. What do you mean by sociometry?

58. Mention various characteristics of a 'star'.

5.4.5: EDUCATION AND VALUES OF SOCIAL GROUPS

The study of human society is essentially the study of human groups. No man exists without a society and no society exists without groups. Groups have become a part and parcel of our life. Out of necessity and inevitability human beings are made to live in groups. Man's life is to an enormous extent live and controlled by social groups of different kinds.

The relation of education to culture is most important factors in society: So far we haveundertaken some discussion on the nature of groups and education. Both when defined from the point of view of purpose, are attempts of human beings to do something and the sociology of education is a study of relation between them.

59. The social groups, the parents are the first educators of the child, and the still maintain an educative function through the child's upbringing. Culture is a word used to many sense with references to education. It is usually taken to mean a high level of intellectual and artistic excellence in a person of group. These would include the way of eating food, wearing cloths, using languages, making live, gently mood, getting buried and

playing football. It is also include listening music, looking of the works of painter and sculpture etc. education is influenced by the culture of the group. The child and his social environment are thus considered together in the process of education.

60. Education as the transmission of the culture : One of the task of education is to hand onthe culture values and behaviour pattern of the group to its young and potential members. By this group achieves a basic social conformity and ensure that its traditional modes of life which are preserved when a group is changing slowly on the new elements of its culture. Our children, although potentially the society of the future and education on this respect can be regarded as a socialization of the young generation, is part of the role of being a matured adult.

61. The social determination of education is a part of the social group. It is true that education depends on the total way of life of a group than the kind of education provided will be different in different kinds of groups. Education is a technique, which is used by people with a deliberate and conscious aim. The people who provide educations are the directly social force or group force are always exercised by group of people.

62. Education and social structure : Actual social relationships are between individuals evenwhen individual is acting or corresponding. Education is a process of preparing people to fit into this complex social structure and to play particular social roles or member of more than one institutional group. The principal social group define the pattern of relationship and behaviour expected of the person who belongs to them and they grow and changing response to basic human needs with the society.

63. Education is the social interaction in our group life. Social interaction is the name given to any relation between person and group which changes the behaviour of the participant. It is by social interaction that children acquire the culture of their group. Any social interaction can be a part of education provided it changes the behaviour in the direction desired by the education. The study of group behaviour is of great importance the educational, and is a major field in the sociology of education.

Social groups have become so necessary that our very survival becomes problematic and doubtful in their absence. Groups are complementary to the development of human facilities, traits and human nature. The prime objective to education is to build the inherent potentiality of the

child. The biological potentiality of man to become a ‘person’ does not happen on its own automatically, even in the absence of a human environment. The biological potentiality blossoms only in social situation, to be more precise, only in the context of graphs. Social groups provide scope for the individuals to express their real nature, their talents and ability. Social group relationship helps the man to get proper education. So hidden potentialities can find their expressions only in the context of social groups, personality is also the product of the group life.

It is now considered that the aim of education is to develop social qualities and capacities to shoulder the social responsibility. So, the primary group is a great humanistic agent strengthening the democratic spirit and as well as act as an agent of social control.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 5
Education and Social Organization

Unit - 3
Folkways

5.5: FOLKWAYS

The term 'folkways was coined by Graham Summer. Man inherited form their beast ancestor's psychophysical traits, instincts and dexterities, or at least predispositions, which aid them in solving the problem of food supply, sex, commerce and vanity. The result is mass phenomena, current of similarity, concurrence, and mutual contribution; and these produce folkways. The folkways are thus the product of the frequent repetition of petty acts, often by great numbers acting in concert. These are relatively durable standardized practices regarded as obligatory in the proper situation but not absolutely obligatory, enforced by informal social controls rather than by formal complaint of coercion and originating in an unplanned and obscure manner rather than by deliberate inauguration. According to Gillin&Gillin 'folkways are behaviour patterns of everyday life which generally arise unconsciously in the group'. So, folkways are simple habits of action common to the members of the groups i.e., society.

The folkways, therefore, are unconscious, spontaneous, un-coordinated adjustments of man to his social environment. The folkways, then, the recognized or accepted ways of behaving in society. They include conventions, forms of etiquette, and the myriad modes of behaviour men have evolved and continue to evolve with which to go about the business of social living. They vary, of course, from society to society and from time to time. So, folkways are conventional practices, which are acceptedas appropriate but not insisted upon. Folkways are numerous and range from the most trifling acts and behaviour to the most serious. Their numbers are infinite. So the folkways generally relate to dress, polite behaviour or etiquette and convention. Thus, a

Rajput, who does not were a turban, is ignoring one of the folkways of Rajput community. A Westerner, who refuges to were a tie informal occasions, is ignoring one of the folkways of Western society. Society has also developed what is called etiquette or standard of polite behaviour in order to make social living smooth and pleasant.

5.5.1: CHARACTERISTICS OF FOLKWAYS

1. Spontaneous origin, i.e., they are developed out of experience.
2. Approved behaviour, i.e., recognised ways of behaviour.
3. Distinctiveness, i.e., a wide variety of folkways in different societies.
4. Hereditary, i.e., folkways are passed on from one generation to another.

Folkways are norms to which we conform because it is customary to do so in our society. Folkways perform two important functions. First, folkways constitute an important part of the social structure and contribute to the order and stability of folkways gives a sense of security to the members of the society as well as social organization and the social group.

Question :

Let Us Check Our Progress

1. Mention importance of folkways in your daily life.

5.5.2: EDUCATIONAL IMPLICATION OF FOLKWAYS

Folkways are the recognized ways of behaviour, we must follow the folkways because these are binding our society. The folkways with us a matter of habit. They come to form the unstated premises in our mental life. They provide predictability both of our own and of other's behaviour, so that we feel some security and some order in life. They are the great savers of energy and time. They are the foundation of every culture. We know that education is a strong agent towards building a social individualism. The importance of getting education of receiving higher academic and professional training for changing their values, attitudes and behaviour by critically assessing their modes of socialization. It helps to follow the folkways i.e. it makes the way of behaviour according to the society. If an individual does not follow folkways, he may find himself socially isolated, which would make survival difficult.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 5
Education and Social Organization

Unit –4
Mores and Social Institution

5.6: MORES

The mores, on the other hand, are the folkways considered as regulators of behaviour. According to Summer 'when folkways' take on a philosophy of right living and a life policy of welfare, then they become more. Thus, when the folkways have added to them conceptions of group welfare, standards of right and wrong, they are converted into a mores i.e. the wearing of cloths of certain style, for example, represents confirmatory with the folkways, while the wearing of cloths themselves is enforced by the mores. The mores represent the living character of a group, operative in conscious or unconscious control over its members.

It may also be remarked that mores need not be rational. Some of the mores may look to be irrational to outsiders. Mores of one culture may be unknown in other cultures and seem to have no necessary connection with group welfare. If a society believes that the act is injurious, it is condemned by the mores. Mores are beliefs in the rightness or wrongness of the act. So, it is clear that mores determine our conceptions of what is proper or improper, right or wrong. The mores change more rapidly in civilization than in pre-literate culture, but the mores change only under the strongest pressure and over a long period of time.

5.6.1: THE MORES AND SOCIAL LIFE

1. The mores determine much of our individual behaviour in a group or in a organization. They are the compelling and forbidding apparatus of the social world that constantly exerts pressure upon the individual members.

2. The mores identify the individual with the group. The mores thus, maintains those social bonds that are clearly essential for satisfactory living.

3. The mores are in the last resort the guardians of solidarity. Every social utility has its own mores. So every social organization and social group also has its own mores. There are the mores for each sex, for all ages, for all classes, for all groups from the family to the nation and beyond.

Since the mores of different communities are widely divergent and often quite contradictory their force diminishes in those wide-scale societies where diverse groups are brought together.

Question :

Let Us Check Our Progress

1. Distinguish between mores and folkways.
2. Justify the importance of mores in the changing order of our contemporary life.

5.6.2: EDUCATION AND MORES

Mores determine our conceptions of what is proper or improper, right or wrong. It is also to remember that mores can make anything appear right. The power of the more is so strong that according to Summer there is nothing, which the mores cannot make right. Mores are conducive to social welfare. Education helps to accept mores, which helps people in the process of socialization. Mores are forever moulding and restraining the tendency of every individual. In society there are innumerable mores like monogamy, anti-slavery, democracy and prohibition conformity to which it is regarded as necessary. Education will be of an immense help in bringing about democratisation, secularism, national integration and proper socialization also.

Question :

Let Us Check Our Progress

1. Indicate importance of social organization on education.

5.7: LET US SUM UP

Man comes in this world with certain animal tendencies and capabilities in order to satisfy these tendencies, He starts making certain activity in the eye of the sociology. Education is that which is learnt through eternal environment, but society is the group of these individuals and its progress ispossible in their progresses. Therefore, in the word of Brown, education is a consciously controlled process; where by changes in behaviours are produced in the persons and through the persons within the social groups and social organizations.

According to educational sociology the man aims of education is develop social qualities and democratic feeling in the children, so that my work further welfare of the society, nation and the world.

By education man can learn folkways and mores of the society, which helps him to adjust in the society. Societies everywhere meet their basic needs through social institution. Social institution will generally influence the way your society works. By means of social organization, man has extended his reach. He has enabled himself collectively to attain through specialized and co-ordinated action goals that world remain for beyond his grasp otherwise. So social organizations emphasises the co-ordination of social relationships, while organization plays an important in mans' accomplishment, its potential should not be regarded as unlimited.

Social groups are characterised by social contact and communication as well as social interaction and social intercourse. Social groups are complimentary to the development to the human traits and nature. India is not a homogenous society. There are within the vast mass of the Indian populations, distinct groups and sub-cultures that defer from each other in major aspect of their living. Education and its concomitant, equality of opportunity may not round off the angularities of these sub-cultures and may on the other hand even reinforced or sharpen the inter-group differences by generating aspirations of deriving group advantages in the present situation of discrepancies between resources and aspirations.

5.8: SUGGESTED READINGS

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5.9: ASSIGNMENTS

1. Discuss Social Organization and mention different factors which can affect social organization.
2. Define Social group. How group dynamics is helpful for effective classroom teaching.
3. Discuss the educational significance of folkways, mores and institutions.
4. ————

BLOCK – 6: EDUCATION AND CULTURE

Unit - 1

Population Dynamics

Unit - 2

Population Growth

Unit- 3

Population Growth and Indian Policies

CONTENT STRUCTURE

6.1 : Introduction

6.2 : Objectives

6.1.1 : Concept and Meaning of Population Dynamics

6.1.2 : Multidisciplinary Nature of Population Phenomenon

6.2.1 : Theories of Population

6.2.1.1 : Population of growth

6.2.1.2 : Problems of Population growth

6.2.1.3 : Theory of Mercantilist

6.2.1.4 : Theory of Malthus

6.2.1.5 : Neo Malthusian Theory

6.2.1.6 : Marxian Theory

6.2.1.7 : Other Theories

6.2.1.8 : Optimum Population

6.2.1.9 : Over Population and its Problems

6.2.1.10 : Population Growth

6.2.2 : Components of Population

6.3.1 : Population in Indian Context

6.3.2 : India and Population Policy

6.4 : Let Us Sum up

6.5 : Suggested Readings

6.6 : Assignments

6.1: INTRODUCTION

Population education is education about various population matters like fertility, mortality, migration etc. It is an educational process which helps people to understand the nature, the causes, and consequences of population events. It is a factual knowledge about population dynamic. Population education is an educational process, which helps individual to learn about population and particularly the effect of population dynamic and the related problem on the individuals, family, community, nation and the world. Its main purpose is to create awareness, to

provide knowledge and to develop positive attitude for improving population situation to ensure a better life now and in future.

Population, as a striking and accountable phenomenon, not only matters to the thoughtful personalities of the present time, but also had been a significant concern to social philosophers, thinkers, and scientists of variegated branches of knowledge in all ages. Population phenomenon — has long been greatly dealt with by different personalities of different countries, almost all over the world. Political philosophers, anthropologists, economists, geographers and other local and natural scientists, and even statesmen are very much confronted in understanding, studying and reporting population phenomenon in terms of their respective interests and subject areas.

From the end of the 18th century, and onwards population phenomenon entered into the domain of sociology to a considerable extent. As a consequence educational sociology was greatly influenced by various facts of population dynamics. It has therefore, been an important subject area of discussion in the discipline of "Education". It is for this reason students of "Education" need to understand the population phenomenon and population dynamics. They need to understand population differentials like class, caste, ethnicity, religion, language and cultural divergence.

Population education aims at assisting the individual to understand the causes and consequences of population phenomena. It aims at recognizing the causes of demographic phenomena and to enable the people to make changes in order to remove those obstacles for social progress. It enables to acquire knowledge, skills, attitudes and values necessary to understand the concept of population education. It enables the learner to take a conscious and right decision about the prevailing population situations.Population education teaches the students to realize their responsibility regarding the population, situation of a family, a community, a country and the world. Besides, it helps to change their behavior. It also helps man to live a happy, better and quality life. Thus, population education is necessary to make the people aware of their duties and responsibilities and to make them act accordingly.

It is evident, therefore, that the study, of population is of paramount importance to statisticians all our the modern countries. The census workers, the state and national level planning bodies are equally concerned with population dynamics. The data on population differentials of various sources are of utmost importance to natural, social and behavioural scientists, planners, etc. in their studies and research purposes irrespective of pedagogical and educational investigations. Obviously, 'Education' as a discipline needs to be enriched with the knowledge of population

dynamics. Population education has special meaning in India where education has been recognized as the most powerful tool for national development.

6.2: LEARNING OBJECTIVES

After go through this Block, you will be able to:

- Get acquaintance with population phenomena.
- Conceptualize the concepts and meaning of population education.
- Analyze the concepts, meaning and the history of population dynamics.
- Analyze the concept, meaning and history of population growth in the world.
- Explain the various theories of population growth.
- Discuss the causes and impact of population explosion in the world.
- Discuss the remedial measures to control population growth in the world.
- Analyze the various components of population growth.
- understand various theories of population phenomena,
- analyse the components of population growth,
- understand population problems in India and population policies,

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 6
Population and Education

Unit – 1
Population Dynamics

6.1: CONCEPT AND MEANING OF POPULATION:

In terms of biology, a population is all the organisms of the same group or species, which lives in a particular geographical area, and have the capability of interbreeding. Whereas in terms of sociology,population is a collection of human beings. Demography is a kind of social study which means the statistical study of human populations. So, population is the number of people in a city or town, region, country or world. Population is usually determined by a process called census. We can say, census is a process of collecting, analyzing, compiling and publishing data country wise and also globally. At present the world human population is 7.615 billion as estimated by the United States Census Bureau by March 2018.

6.2:CONCEPT OF POPULATION EDUCATION:

Education plays a pivotal role to control the population growth in our country. It helps to bring various kinds of social changes in a country. Population education helps to maintain quality and happy life for future. It helps to acquire knowledge of causes and effects of population growth throughout the world. Population education also studies about various aspects of people's life like sex education, family planning, population statistics, etc. It is also a process for developing awareness about population growth among people all over the world. According to stake holders population education is the education about various population matters like fertility, mortality, migration, etc.

According to UNESCO, "Population Education is an educational programme which provides for a study of population situation of the family, the community, nation and world, with the purpose of developing in the students rational and responsible attitudes and behaviour towards that situation."

According to Gopal Rao, "Population education an educational programme which provides for a study of the population phenomenon so as to enable the students to make rational decisions towards problems arising of rapid population growth"

According to Sharma, "Population education is the study of human population in relation to his environment with a view to improving his quality of life without adversely affecting the environment."

6.1.1:CONCEPT AND MEANING OF POPULATION DYNAMICS

Population education is broadly defined as the scientific study of human populations. The study area of population education includes population dynamics, fertility and family dynamics, health, aging, and mortality, and human capital and labor markets, etc. Population education is an interdisciplinary subject. Population dynamics is the branch of life sciences that studies the size and age composition of populations as dynamical systems, and the biological and environmental processes driving them. Some examples are like ageing populations, population growth, or population decline.Population dynamics refer to the way in which the size and age structure of populations change over time and the characterization of that change are mathematically explained.

Among population researchers, demographers are concerned with the logical and rational study of population dynamics. Demographer studies population determinants and consequences like size, composition, change of population over time, and the processes influencing those changes. Demographers study the collection, presentation, and analysis of data relating to the basic life-cycle experiences of people like birth, marriage, divorce, household and family formation, migration, employment, aging, and death. They also examine compositions of populations by sex, age, race, ethnicity, occupation, education, religion, marital status, and living arrangements. Demographers also measure the distribution of populations by region wise, country wise, province wise and also state wise or urban - rural area wise. Most demographic data come from population censuses, national registers, and researcher's surveys. Demographers use a variety of

counts, rates, ratios, and other statistics to measure fertility, mortality, migration, and other population dynamics.

Some basic concepts of population dynamic are as follows:

1. The crude birth rate is the annual number of live births per thousand people, where as the general fertility rate is the annual number of live births per thousand women of childbearing age.
2. The crude death rate is the total number of deaths per thousand people where as the mortality rate is the number of deaths in some population, in relation to the size of that population and per unit of time.
3. The infant mortality rate is the annual number of deaths of children less than one year old per thousand live births.
4. Life expectancy is defined as the number of years that an individual at a given age can expect to live at present mortality levels.

We can say that, the number of deaths per thousand people can be higher for developed countries than for less-developed countries, though the standard of health being better in developed countries. This is because developed countries have relatively older and aged people, who are more likely to die in a given year. A more complete picture of mortality and life expectancy is given by a life table that summarizes mortality separately at each age. First five years of the twenty-first century saw a decline in the overall volume of population growth. World's population increased at a rate of about 76 million people per year as of 2005. Overpopulation occurs in the world when the population of a living species exceeds the carrying capacity of its ecological niche. Future population growth is difficult to predict by the demographers because birth rates are declining on average rate, and vary greatly between developed countries and developing countries. Whereas death rate also changing unexpectedly due to various diseases, wars and catastrophes.

History of Population Dynamics:

Population dynamics has traditionally been the dominant branch of mathematical biology, which has a history of more than 210 years, although more recently the scope of mathematical biology has greatly expanded. The first principle of population dynamics is widely regarded as

the exponential law of Malthus, as modelled by the Malthusian growth model. The early period was dominated by demographic studies such as the work of Benjamin Gompertz and Pierre François Verhuls in the early 19th century, who refined and adjusted the Malthusian demographic model.

A more general model formulation was proposed by F.J. Richards in 1959, further expanded by Simon Hopkins, in which the models of Gompertz, Verhulst and also Ludwig von Bertalanffy are covered as special cases of the general formulation. The Lotka–Volterra predator-prey equations are another famous example, as well as the alternative Arditi–Ginzburg equations. The computer game*Sim City* and the MMORPG Ultima Online, among others, tried to simulate some of these population dynamics.

In the past 30 years, population dynamics has been complemented by evolutionary game theory, developed first by John Maynard Smith. Under these dynamics, evolutionary biology concepts may take a deterministic mathematical form. Population dynamics overlap with another active area of research in mathematical biology: mathematical epidemiology, the study of infectious disease affecting populations. Various models of viral spread have been proposed and analyzed, and provide important results that may be applied to health policy decisions.

6.1.2: MULTIDISCIPLINARY NATURE OF POPULATION PHENOMENA

Population studies were generally regarded as a branch of sociology, economics, geography and even anthropology. The theory of demographic transition is based on an understanding of such other disciplines as economics, sociology, political science, psychology, anthropology and geography. Many of the fertility theories are based on biology, sociology and economics. The changes in the birth rate cannot be explained as independent phenomena. The various multidisciplinary concepts of population studies are as follows:

- **Population Studies and Sociology:**

Davis has referred to the following areas of study which require a combination of population and sociological skills: "(1) Fertility in connection with attitudes and social institutions (2) Population changes in relation to social and economic change (3) The labour force with respect to population structure and social organisation (4) The family with regard to demographic

behavior. Davis mentioned 'international and internal migration' as the two areas where knowledge of sociology and population need to be combined. Though the study of mortality, age and sex biologically determined but has sociological bases.

Broom Selznick treat population as one of the nine principal "elements of sociological analysis" for the discussion of six special topics, that is, family, city, minorities, industrial sociology, political sociology and criminal behaviour. Thus it appears that, along with social organisation, culture, socialisation, primary groups, social stratification, associations, collective behaviour and ecology, populations is an important element in sociological analysis. Like, Anthropology and political science, sociology also deals with society. Sociology primarily concerned with social relationship along with the study of social structure and social organization, social groups and group process, etc. It deals with social stratification, group cohesion and other facts of social life. The intention of sociology is to proceed toward progress, and this progress is shared by different groups that constitute society. Sociology therefore is confronted with that part of demography which studies population differentials like numbers in various regions and social groups, age, sex, standard of living, social, complexity population size of the nation and also the web of social relationship. Thus population studies in sociology aims at arriving towards social progress, social order and human welfare as a whole.

- **Population Studies and Social Psychology:**

Questions regarding family planning and fertility regulation can be answered only when the reproductive behaviour of individuals is understood in the context of the social standards cultural norms which influence and govern such behaviour. Even in the field of mortality, utilization patterns of health care services can be understood only when individual behaviour is explained and the relevant social norms are studied. Movements from rural to urban areas can also be studied only by understanding the motivation behind such migrations. In this way population studies becomes related with social psychology.

- **Population Studies and Economics:**

Economists are greatly influenced by population factors. Economics is concerned with income, wealth, production, distribution and profit to economic growth. It studies population in term of human resources in relation to natural resources. It is therefore, concerned with population dynamics for identifying the nature of population growth, density of population, distribution of population in different part of the country. The study of population is an important

area of investigation in the field of economics, since problems of economic development and development planning have come to the forefront in most developing countries. In order to gain a better understanding of the relationship between population trends and economic growth some topics have emerged over the years and continue to occupy an important place, both in economics and population studies such as:- population and development; manpower studies; the economics of fertility; and comprehensive economic-demographic models. It has been even claimed that the number and quality of the population that can exist on the earth in the future will depend on the economical opportunities and economical organization. Thus, population growth, size and distribution cannot be discussed rationally except in the context of economic growth or change. The economic thinker of population is, now a day's mostly influenced by political background of the state.

- **Population Studies and Geography:**

Students of population studies are usually interested in the geographical distribution of the population and its movements between rural and urban areas. Those geographical researchers, who are interested in geography not only as an academic discipline but as a geographical point of view to understand the world, point out that it is useful to know how the various issues facing the world for instance, rapid population growth, urbanization, race relations, etc. assume different forms in different regions or contents.

Another concept is the subject population geography, which is also a part of the discipline geography. Population geography is a division of human geography. It is the study of the ways in which spatial variations in the distribution, composition, migration, and growth of populations are related to the nature of places. Population geography involves demography in a geographical perspective. It focuses on the characteristics of population distributions that change in a spatial context. This often involves factors such as where populations are found, how the size and composition of these populations is regulated by the demographic processes of fertility, mortality and migration. In this way population and geography becomes interrelated.

- **Population studies and Philosophy:**

Philosophers, including political and economical thinkers were mostly involved with population phenomenon in the early days. Confucious, Plato and Aristotle and also Kautilla of India were the well known thinkers, of population phenomena. In the Greek days, territory and population were the two essential components of a state. Plato deeply influenced by the teaching of

Socrates, thought of dividing population into three classes: the rulers, the soldiers and the producers. Here the guardians should only rule. In the thinking of Aristotle, population occupied one of most significant constituents of the state. He also thought of a considerable size of population for the formation of a state. He divided the population of the state into six classes – the administrator, the priests and the solders, the farmers. The views of population have now been changed. At present, there are multiple population factors like religion, race, caste, sex, place of birth, class differences, minorities, socially and economically backward classes, etc. It maintains statistics, census report and records of various social, political, economics and professional groups.

- **Population Studies and Education**

The discipline of education stands on four major foundations. Sociology is one of these foundations. It is for the reason that demographic studies occupy a natural position in education. Students and scholars of educational sociology, therefore, need to study population dynamics. Population dynamics occupy a central place in education. The problems of girl population, minority groups, tribal groups or physically and socially disadvantaged group are of grave concerns to teachers and educational planners and administrators. Along with these problems education has to think of educationally backward students. In order to understand the nature of population differentials education is necessary.

Mark Montgomery, an economics professor at Stony Brook University and a researcher at the Population Council says that, one of the most powerful tools in stemming population growth will be education. It also says "Education leads to lower birth rates and slows population growth". Education requires equal treatment for all pupils, along with differential treatments for different heterogeneous student population. So, the knowledge of population dynamics is required. Finally, education is an interdisciplinary subject which also studies population. Education views population dynamic as an eclectic subject.

Question :

Let Us Check Our Progress

Explain the multi-disciplinary nature of population phenomena

Indicate importance of knowledge of population phenomena in education

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 6
Population and Education

Block – 2
Population Growth

Concept and Meaning of Population Growth:

Population growth is the increase in the number of individuals in a population. Population growth can be defined as the change in number of people of an area or any region over a specific period of time. This change may be positive or negative. The change in number can be measured in two ways. 1. It can be calculated in terms of absolute numbers. 2. It can be expressed in percentage.

Global human population growth amounts to around 83 million annuallyor 1.1% per year. The global population has come to 7.616 billionin 2018. It is expected by the demographers that the total population will come to 8.6 billion by mid of the year 2030, 9.8 billion by mid of the year 2050 and 11.2 billion by the year 2100. In our world many nations have rapid population growth but have low standards of living, whereas many nations with low rates of population growth have high standards of living. It is fact, but the population still cannot be controlled in many countries of the world.

***TABLE – 1:*Population Growth in India (1911-2011)**

Census year	Population (in millions)	Percentage increase or decrease during the decade
1911	252.1	5.7
1921	251.3	(-) 0.3
1931	279.1	11.1
1941	318.7	14.2
1951	361.1	13.3
1961	439.2	21.5
1971	548.2	24.8
1981	683.3	24.7
1991	846.3	23.8
2001	1028.0	21.5
2011	1210.2	17.6

Source *:*Census Report India 2011 and previous reports

From table-1 we can observe that, according to the census report of India 2011, the population of India at present is 1,210,726,932. It is also evident from the data that the rate of population growth in India goes beyond the human control. The population rate of the country will also get doubled itself within 50 years. This becomes a problem where resources are not in abundance. The major factors that are responsible for this type of rapid growth of population are high birth rate and low death rate per thousand and high emigration rate, people coming from other countries, etc. However, migration and emigration are not so vital problems in our country because these may occurs generally during war time, political partition of a country and unforeseen natural devastation or etc. These are all casual phenomena. The most important factor in the context of population growth is the difference between the birth rate and death rate in any countries.

Now India is the second most populated country in the world with nearly a fifth of the world's population. According to the 2017 revision of the World Population Prospects, the

population stood at 1,324,171,354. The Indian population reached the billion marked in 1998. India is projected to be the world's most populous country by the year 2024, crossing the population of China. It is expected to become the first political entity in history to be home to more than 1.5 billion people by 2030, and its population is set to reach 1.7 billion by the year 2050. India has more than 50% of its population below the age of 25 and more than 65% below the age of 35. It is expected that by the year 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan. By the year 2030 India's dependency ratio should be just over 0.4.

Table – 3: ***History of Global Population Growth***

Year	**Estimated Population**
8000 BC	5 Million
Up to 1 A.D	200 Million
middle of 18th century (down of modern era)	800 Million
During 20th century	6 Billion
21st Century	7.6 Billion

Source: Historical Estimates of World Population ***- US Census Bureau***

The world's population grew very slowly until about 1750. There was a long period of stationary growth (no growth) until 1000 B.C. Table 7 indicates that, at the dawn of agriculture about 8000 B.C., the population of the world was approximately 5 million. World population was so small up to the middle of 18th century which was the down of modern era. During this time, the world's population was kept in check by high death rates, which were due to the combined effects of plagues, famines, unsanitary living conditions, and general poverty. After that the world's population grew substantially. During the 20th century, the world population has grown from 1.65 billion to 6 billion. Population in the world is currently (2018) growing at a rate of around 1.09%per year. The current average population increase is estimated at 83 million people per year. World population will therefore continue to grow in the 21st century. Now at present the world population is 7.6 Billion. World population is projected to be 9 billion in 2050.

➢ General impacts of population growth

It is difficult to measure the carrying capacity for human beings on earth. Scientists have estimated the carrying capacity at around 7.7 billion people. It is now estimated that the projected world population will be around 9.1 billion by the year 2050. The population growth has raised concerns among scientists that the planet may not be able to sustain such huge population in the long run. Increasing population means increased demand for food, water, and other resources which will be required for living in the planet. The impact of population growth can be seen by everybody in this planet. Over the last few years there has been large scale destruction of the tropical and mangrove forests mainly to make land available for agriculture and for urbanization. In order to produce enough food to meet the demand of growing population, forests have been cleared to undertake farming. Due to increased industrialization and urbanization in our country there has been great increase in the pollution of air, water and the environment of the planet. Growing population will result in the depletion of natural resources such as water, fossil fuels; deforestation and loss of ecosystems and emergence of new diseases. The effects of population growth will leads to more starvation, hunger and unhygienic living conditions in poor and developing countries like India.

➢ Theories of Population Growth:-

1. <u>Malthusian or pessimistic views on population growth -</u>

Malthusian theories or pessimistic theory on population growth was derived from the ideas of Reverend Thomas Robert Malthus, a British scholar who wrote series of essays on the principles of population. There he said that if the human population growth is left unchecked the food supply will not be sufficient to meet the human needs in the world. He was the key figure to analyze the population statistics. His formulation on population was a landmark in the history of population theories. He generalized the relationship between population factors and social change.

He introduces the idea that while human population grew exponentially, the food resources grew only arithmetically. Malthus contended that the world's population was growing more rapidly than the available food supply. He argued that the food supply increases in an arithmetic progression (1, 2, 3, 4, and so on), whereas the population expands by a geometric progression (1, 2, 4, 8, and so on).According to him, the population could increase by multiples, doubling every twenty-five years. He said the gap between the food supply and population will continue

to grow over time. Even though food supply will increase, it would be insufficient to meet the needs of expanding population. Moreover, the famine and other natural calamities cause widespread sufferings and increase the death rate, which is nature's check against population. He also believed that population will be controlled naturally by disease, famine and mortality. This was called as the pessimistic model of population growth. Malthus believed in using preventive checks such as abstinence, delayed marriage and restricting marriages in order to control population growth. Though some philosophers criticized Malthus theory because there has been an enhanced agricultural production and reduced human fertility over the past few decades. However, still now many people believe in his theory.

In brief, Malthus theory states that:

- Population is necessarily limited by the means of subsistence.
- Population invariably increases where means of subsistence increased, unless prevented by some very powerful and obvious checks.
- These checks, and the checks which repress the superior power of population and keep its effects on a level with the means of subsistence, are all resolvable into moral restraint, vice and misery. Malthus based his above arguments on man's two basic characteristics essential to the maintenance of life:- The need for food and the passion between sexes.

It was the second which led people to marry at a relatively early age and would result in such a large number of births that the population would double itself in few years if unchecked by misery and vice.

Malthus referred to two classes of checks which kept population down:-

- Positive means: He spoke of famine (hunger), disease or war, pestilence and vicious customs about women.
- Negative means: He explicitly demanded artificial means of birth control and suggested as an alternative that birth rate be decreased through preventive measures such as late marriage (postponing marriage until later age), moral restraint, and chastity (abstinence). He contended that without such restraints the world would face widespread hunger, poverty and misery.

2. Neo-Malthusianism -

These groups believe in the theories of Malthus and encourage population control programs for the present and future benefit of human beings. The Neo-Malthusians view differs somehow

from Malthus in their belief on the use of contraceptive techniques for the birth control measures. The neo-Malthusians or the pessimistic view had more concerns about the effect that population growth would have on environmental degradation. This Neo-Malthusian group strongly supported the idea of actively controlling population growth in order to prevent adverse impact on the environment. This pessimistic group are concerned about the effect overpopulation may have on resource depletion and environmental degradation. Neo-Malthusian or the pessimistic view is more about the positive checks but Malthusian said that there is balance between both positive and negative checks. Neo – Malthusian theory challenged the Malthusian theory of population. They opened that undesired population growth would not be able to cope with the availability of resources for survival of human race.

3. Technological or Optimistic views on population growth -

The optimistic model of population growth was proposed by Julian Simon who in his book, "The Ultimate Resource" (1981) argued that as resources become scarce the price goes up which in turn creates incentives for people to discover new source or find alternatives for the resource. Simon also claims in his book that the natural resources are infinite based on the justification that innovative methods can be used to make natural resources available. Increasing population growth and reduced resources make people to create innovations and inventions to produce more food and all basic needs. The optimistic view said that science and technology can overcome scarcity problems. The optimistic view also said that more people means more alternatives to find new materials and discover ways to do things.

4. Marxian Theory -

Karl Marx (1818-1893) was a German philosopher and founder of modern communism. His theory of population was christened as theory of surplus population. The Marxian theory then criticized the Malthusian theory and proposed that poverty is not major outcome of excessive population. Poverty is the offshoot of the evils resulted by capitalistic system. This theory suggested that collective system of production, and workers participation in the planning of population, would be able to absorb the excess labour force due to growth of population. The poverty system of distribution of the capitalist class gave way to inequality and poverty. The death rate and birth rate would fall when living conditions would improve.According to Marx, there can be no natural or universal law of population. He says, "An abstract law of population exists for plants and animals along, and along in so far as man has interfered with them." Again, "Every special historical mode of production has its own special law of population, historical valid, within

its limit alone." Thus his population theory is peculiar to the capitalist system of production. It is inherent in the capitalist system and not in production.

Marx did not believe that all hardships with which the people were suffering were due to man's tendency to grow in numbers faster than his production of subsistence would permit. One the other hand, he lived that man's tendency to press on the means of subsistence has due to evils of capitalism which would disappear with the emergence of communism. He related population growth with present economic system and for him both were inseparable. Marx held that poverty and unemployment were not due to increased population, but on due to capitalist system which failed to provide jobs. Surplus population was the consequence for real production and uneven distribution of wealth and for providing jobs to only few persons.

It is considered by Marx that creation of surplus population is the result of supply of labour that increases more quickly than the demand for workers. It said that, "This surplus population becomes an industrial reserve army of unemployed and semi employed hands." According to Marx these cannot be an eternal or natural law of population. The contemporary mode of production must be considered the determing factor for increase of population. Maxian theory in fact is more a theory of labour founded and is applicable more to capitalistic mode of production. In brief, this theory deals with the reduction of inequality in distribution of wealth and consequent improvement in the living conditions of the masses and there would be decline in death rate and birth rate.

Now we can conclude that overpopulation can lead to problems in the form of devastation of natural resources, environmental pollution and degradation, and loss of habitat. Therefore, urgent steps need to be taken by the government to manage world human population. The theories founded by Malthus can be still followed because the natural resources available now may not be sufficient in the future if we do not control human population growth.

- **Concept of Over population:**

The term 'overpopulation' means too great a population for a given region to support. There may be two causes: population growth exceeds the existing resource base and existing resources have been depleted. The situation of overpopulation displays the following socio-economic characteristics like high unemployment, low incomes, low standards of living, high population density, malnutrition and famine. Malthus, for the first time, identified the problems related to overpopulation. Later on, the Neo-Malthusians also viewed overpopulation as a major problem. Marxists argue that overpopulation is the result of the mal-distribution of resources.

Nowadays, some western geographers view overpopulation as the cause of pollution and the increasing migration from the countryside in the western countries of Europe and North America. Overpopulation strikes the lower strata of the society the hardest particularly in developing countries such as India, Nepal, Myanmar etc. Overpopulation may occur either at national level or at regional level.

Regional overpopulation when found in rural areas is attributed to:-

a. Rapid increase of rural population,

b. Skewed distribution of agricultural land,

c. Agricultural mechanization

d. Lack of development of non- agricultural sector,

e. Low agricultural yield

f. Lack of social development

g. Non-resilience of the agricultural sector.

➢ Concept of under population:

Under population exists when a population is too small, therefore unable to fully utilize the available resource endowments. Under population is also characterized by a situation where the available resources are capable of supporting a much larger population with no reduction in living standards. The situation is found in regions of low technical development like equatorial Congo, Amazon River basin or the rich Prairie region of North America.

Relative under population is more common than absolute under population. Indeed, absolute under population is rarely seen and may be found in completely secluded societies where, the degree of replacement of population is less than unity. Relative under population occurs due to insufficient resource development. In developed economies, rural under population is more visible, whereas in backward countries, under population is linked to high mortality rate.

➢ Concept of Optimum population:

Optimum population refers to the size of a population that produces the best results according to chosen end targets. Optimum size of population for an area was defined as "The optimum level is that size of population which yields the highest quality of life." Zelinky (1970) defines optimum population as "The due that permits the highest per capita output wise the marginal productivity

still exceeds the average productivity and whose the rate of growth of total production are the highest". It is evident, therefore that optimum population is a state in which an equilibrium maintained between the population and the resources, that fulfils the needs of fall member of a community and which varies in term of space and time.

Optimum population has been defined as that size of population enabling per capita output of the maximum orders accompanied by the highest possible standards of living under a given set of economic and technological conditions. Therefore, optimum population lies between two extremes, i.e., overpopulation and under-population.The Penguin Dictionary of Geography characterized optimum population as a situation when the number of individuals can be accommodated in an area to the maximum advantage of each individual. Thus optimum population yields highest quality of life, which means each person has access to adequate food, water, energy and air of highest quality, adequate medical care, recreational facilities and cultural outlets. In other words, optimum population permits the highest per capita output; therefore the marginal productivity exceeds the average productivity whereby the rates of growth of total production are the highest.

The criteria for computing optimum population in terms of individuals are as follows:-

I. Per capita production

II. Average standard of living.

III. Degree of employment.

IV. Longevity of life.

V. Social harmony.

VI. Family stability.

VII. A enhancement of knowledge

VIII. Growth of intellectual functions.

IX. Per capita food consumption.

X. Proportion of expenditure on food.

XI. Quality in the use goods.

XII. National development of resources; and family.

XIII. Balanced demography

- **Causes of population growth**

1. **Decline in the Death Rate:** The major cause of population growth is the difference between the overall birth rate and death rate in populations. If the number of children born each year equals the number of adults that die, then the population will stabilize. Global population growth shows that, while there are many factors that can increase the death rate for short periods of time, the ones that increase the birth rate do so over a long period of time. The discovery of agriculture by our ancestors was one factor that provided them with the ability to sustain their nutrition without hunting. This created the first imbalance between the two rates.
2. **Better Medical Facilities:** Industrial revolution and technological advancement was perhaps the biggest reason for population growth. Science was able to produce better means of producing food, which allowed families to feed more mouths. Medical science made many discoveries which defeat a whole range of diseases. Illnesses that had claimed thousands of lives till now were cured because of the invention of vaccines. Combining the increase in food supply with fewer means of mortality tipped the balance and became the starting point of overpopulation in the world.
3. **More Hands to Overcome Poverty:** For thousands of years, a very small part of the population had enough money to live in comfort. The rest faced poverty and would give birth to large families to make up for the high infant mortality rate. Families that have been through poverty, natural disasters or are simply in need of more hands to work are a major factor for overpopulation. As compared to earlier times, most of these extra children survive and consume resources that are not sufficient in nature.
4. **Technological Advancement in Fertility Treatment**: With latest technological advancement and more discoveries in medical science, it has become possible for couple who are unable to conceive to undergo fertility treatment methods and have their own babies. Today there are effective medicines which can increases the chance of conception and lead to rise in birth rate.
5. **Immigration**: Many people prefer to move to developed countries like US, UK, Canada and Australia where best facilities are available in terms of medical, education, security and employment. The end result is that those people settle over there and those places become overcrowded. Difference between the number of people who are

leaving the country and the number of people who enter narrows down which leads to more demand for food, clothes, energy and homes. This gives rise to shortage of resources. Though the overall population remains the same, it just affects the density of population making that place simply overcrowded.

6. **Lack of Family Planning**: Most developing nations have large number of people who are illiterate, live below the poverty line and have little or no knowledge about family planning. Getting their children married at an early age increase the chances of producing more kids. Those people are not conscious about population growth and lack of quality education prompts them to avoid family planning measures.

7. Lack of Education:

   Illiteracy is another important cause of overpopulation. Lack of education among people fails to understand theneed to prevent excessive growth of population. They are unable to understand the harmful effects of overpopulation.They are unaware of the ways to control population. Lack of family planning is commonly seen among illiterate people in the world. This is one of the major factors leading to overpopulation. Due to ignorance, they do not take to family planning measures, thus contributing to a rise in population.

- **Effects of population growth**

a. **Depletion of Natural Resources:** The first effect of population growth is the exhaustion of natural resources. The Earth can only produce a limited amount of water and food, which is falling short of the current needs. We can observe the environmental damage in the last fifty years just because of the growing number of people in this planet. Peoples are cutting down forests, hunting wildlife in a reckless manner, causing pollution and creating a host of problems. People who are talking about overpopulation have noticed that acts of violence and aggression outside of a war zone have increased tremendously while competing for resources.

b. **Degradation of Environment**: The overuse of coal, oil and natural gas, has started producing some serious effects on our environment. Rise in the number of vehicles and industries have badly affected the quality of air. Rise in amount of CO2 emissions leads to global warming. Melting of polar ice caps, changing climate patterns, rise in sea level are few of the consequences which we are facing due to environment pollution.

c. **Conflicts and Wars:** Overpopulation in developing countries puts a pressure on the resources. Conflicts over water are becoming a source of tension between countries, which could result in wars. It causes more diseases to spread and makes them harder to control. Starvation is a huge issue facing the world and the mortality rate for children is being charged by it. Poverty is the biggest concern due to overpopulation. All of this will only become worse if solutions are not sought out for the factors affecting our population. We can no longer prevent it, but there are ways to control the population growth.

d. **Rise in Unemployment**: When a country becomes overpopulated, it gives rise to unemployment because there are fewer jobs to support large number of people. Rise in unemployment gives rise to crime as people follow unfair means to feed their family and provide them basic requirements of life.

e. **High Cost of Living**: As difference between demand and supply continues to expand due to overpopulation, it raises the prices of various commodities including food, shelter and healthcare. This means that people have to pay more to survive and feed their families.

f. **Poor Health:** If people do not get adequate food and nutrition, then they may suffer from poor health and will affect by various diseases.

g. **Pollution and Global warming:** Global climate change is identified as one of the greatest threats to the planet. Too much population causes too much pressure on earth. There arises excessive demand for finished products leading to over-industrialization and over-utilization of resources. The industrial discharge is the chief cause for water and air pollution. Further, the poisonous gases released because of burning of fossil fuels in factories are widely responsible for Global warming.

h. **Air and water pollution:** As the population grows, more and more forests are cleared. The two most common reasons for deforestation are to make houses for increased number of people to live in, and to use wood as a fuel in the industries. As a result, the trees that help us in reducing the air pollution through the process of photosynthesis are not able to do so any more. One of the major issues that have lately been bothering environmentalists all over the world is global warming. Like glass in a greenhouse, gases like carbon monoxide admit the sun's light but tend to reflect back downward the heat

that is radiated from the ground below, trapping heat in the earth's atmosphere. This is called the greenhouse effect. Air pollution is not the only environmental damage being done by the increasing population. Nowadays water pollution is also one of the increasing problems due to the population explosion. Water is considered the essence of life. As in the case of air pollution, the increasing population calls for increasing numbers of factories. These factories lead to various kinds of pollution, including water pollution. Also, India being an agrarian country, the water pollution also comes from pesticides used for agriculture. As we can observe, the increased population size is leading to increased pollution, which in turn is leading to a more hostile environment for human beings themselves.

i. **Deforestation:** Forests are an important natural resource of India. They have moderate influence against floods and thus they protect the soil erosion. Forests also play an important role in enhancing the quality of environment by influencing the ecological balance and life support system (checking soil erosion, maintaining soil fertility, conserving water, regulating water cycles and floods, balancing carbon dioxide and oxygen content in atmosphere etc. India has a forest cover of 76.52 million square kms. of recorded forest area, while only 63.34 million square kms. can be classified as actual forest cover. In the year 1997, as compared to 1993, the total forest cover has decreased by 6710 Sq. Kms. The states, which have shown significant decline in the forest covers, are Andhra Pradesh and Madhya Pradesh. Continuing deforestation, therefore, has brought us face to face with a major ecological and socio-economic crisis.

j. **Depletion of ozone layer:** The ozone layer protects the Earth from the ultraviolet rays sent down by the sun. The Ozone layer has been gradually ruined by the effect of the CFCs. These CFCs were used as solvents, refrigerants, aerosol propellants, and to blow foam plastics. For this reason, the use of CFCs in aerosols has been banned everywhere. Other chemicals, such as bromine halocarbons, as well as nitrous oxides from fertilizers, may also attack the ozone layer. Nitrogen oxides and methane are also compounds which adversely affect the stratosphere's ozone. The concentration of CFCs has been increased as the human population has grown, and the thickness of the Ozone layer has been lesser to the extent that a hole in the layer has been formed. Scientists have found that there are other emissions derived from human activities, which have contributed to the depletion of the ozone layer. Antarctica was an early victim of

ozone destruction. A massive hole in the ozone layer right above Antarctica now threatens not only that continent, but many others that could be the victims of Antarctica's melting icecaps.

k. Land or soil degradation: The land serves as storage for water and nutrients required for plants and other living micro-macro-organisms. The demand for food, energy and other human requirements depends upon the preservation and improvement of the productivity of land. The loss of arable land has been caused by a number of factors, many or most of which are tied to human development. The primary causes are deforestation, overexploitation for fuelwood, overgrazing, agricultural activities and industrialization. On the global basis, the soil degradation is caused primarily by overgrazing (35%), agricultural activities (28%), deforestation (30%), over exploitation of land to produce fuel-wood (7%), and industrialization (4%). In order to combat land degradation, several efforts have been made at the national and regional levels to develop monitoring and data collection methodologies and to formulate appropriate policies, programs and projects. At the national level, such measures include watershed management, soil and water conservation, sand dune stabilization, reclamation of waterlogged and saline land, forest and range management and the replenishment of soil fertility in arable lands by use of green manures and cultivation of appropriate crops.

➢ **Remedial measures to control population growth**

- **Proper Education:** One of the first measures is to implement various policies reflecting social change. Educating mass people about population education helps them to understand the need to have lesser children in their family. Families that are facing a hard life and choose to have four or five children should be discouraged. Family planning and efficient birth control can help in women making their own reproductive choices. Open dialogue on abortion and voluntary sterilization should be seen when talking about overpopulation.
- **Awareness about Family Planning**: As population of this world is growing at a rapid pace, raising awareness among people regarding family planning and letting them know about serious effects of overpopulation can help to decrease population growth. The best way is give them knowledge about various safe sex techniques and contraceptives methods available to avoid any unwanted pregnancy, etc.

- **Tax Concessions**: Government of various countries might have to come with various policies related to tax exemptions to decrease overpopulation in the country. Government can waive certain part of income tax or lowering rates of income tax for those married couples who have single or two children. As we humans are more inclined towards money, this may produce some positive results in population growth of our country.
- **Knowledge of Sex Education**: Imparting sex education at elementary level should be made compulsory in schools. Most parents feel shy in discussing such things with their kids. It results that, their children going out now and look out for such information on internet or discuss it with their peers. Mostly, the information is incomplete which results in sexually active teenagers unaware of contraceptives and embarrassed to seek information about same. It is therefore important for parents and teachers to shed their old traditions and make their kids or students aware of solid sex education.

➢ **Components of Population Growth :**

Population growth or change of population can be measured both in terms of absolute numbers and in percentage. When change of population is measured in absolute number, it is determined by the subtracting population of earlier point of time from that of a later point of time. When change of population is measured in terms of percentage, it is done by dividing the absolute change of population by the population of an earlier date and multiplying it by hundred. The phenomenon of population growth has a special significance to the statisticians and population geographers. Population growth is, therefore, a very important concept for a region's demographic dynamism. The basic components of population growth are: fertility, mortality and migration.

In order to determine the population growth of a region, or a country, it is important to know the magnitude of change of fertility, mortality and migration because these factors are responsible for positive or negative growth of a population. These three factors also determine whether effective population of a country has increased or decreased. The three components of population growth are discussed below:-

(A) Fertility-

According to demographers fertility refers to the actual production of offspring. Fertility can also be measured. But it is very difficult to measure fertility. Demographers measure the fertility rate in various ways, which can be broadly broken into "period" measures and "cohort" measures. "Period" measures refer to a cross-section of the population in one year. "Cohort"

data measures the same people over a period of decades. The various measures of fertility rate are:

Crude Birth Rate,

General Fertility Rate,

Fertility Ratio,

Child-Woman Rate,

Standardized Birth Rate;

Total Fertility Rate.

(B) Mortality-

We all know that men are mortal. Then at what age people generally die? - If average life expectancy is low then rate of mortality would be high. Population growth depends to a great extent on this mortality rate. Crude death rate is the simplest measure of mortality. It refers to number of deaths in a particular year per thousand of population. It is an important parameter affecting future growth of a population. It is the percentage of infants died out of those born in a year. Again infant mortality rate is calculated for a ascertaining mortality among children before attaining one year of age. Infant mortality rate is, generally determined by the number of deaths in a year per thousands of live infant births. Mortality rates for all categories of population are greater in socio-economic underdeveloped countries. Mortal mortality rates are generally expressed in terms, if number of female deaths per thousand of live birth caused by pregnancy. So, any type of mortality decreases to number population of country. So, high mortality rate caused decrease of population, while birth rate remains unchanged in such situations. Mortality rate or death rate is a measure of the number of deaths in a particular population. It is scaled to the size of that population, per unit of time. Mortality rate is typically expressed in units of deaths per 1,000 individuals per year. Thus, for example a mortality rate of 9.5 (out of 1,000) in a population of 1,000 would mean 9.5 deaths per year in that entire population, or 0.95% out of the total. Although this rate has declined in the last 50 years, but the pattern differs widely in developed and developing countries.

(C) Migration-

According to Bogue (1959), it is "a movement of people as an instrument of culture diffusion and social integration ..... Results into more meaningful distribution of population. It has three fold impact".

1. On the area experiencing in migration
2. On the area experiencing out migration and
3. On the migrants themselves.

So, migration is not basically shift of people from one place of residence to another.Migration is the movement by people from one place to another with the intentions of settling, permanently or temporarily in a new location. The movement is often over long distances and from one country to another. Whereas internal migration is also possible. People may migrate as individuals, in family units or in large groups. A person who moves from their home to another place because of natural disaster or civil disturbance may be described as a 'refugee.

Question :

Let Us Check Our Progress

Indicate three main factors of over population.

State features of population growth in India during the last fifty years.

Conclusions

Education is a vital aspect of population change, social development and economic growth for every society, with an impact on the economic future and social well-being of all individuals. Education impacts society along many paths one which is — the interrelationships between education and population, and their resulting effects on development. World Population Monitoring, 2003 Report concludes in context of "Relationship between Education, Population and Development":

- Increased education makes an important contribution to societies' economic growth and to the economic fortunes of individuals. Evidence also suggests that for low in come countries, expansion of primary education represents the best investment- For middle-income countries, where primary education is typically already widespread, increased investment in secondary education tends to have a greater impact on economic growth.
- Illiteracy is a powerful predictor of poverty. A large body of research shows that primary education has a catalytic role in improving economic and social conditions

among the poorest segments of society, for girls, rural dwellers and minorities. Then an important conclusion is that the expansion of educational opportunities is one of the most powerful tools that Governments for promoting both income growth and equality.

- In some settings, the direct economic returns to women's education are limited because women are excluded from many types of employment. Nevertheless, studies of economic returns to education for individuals demonstrate that the returns from increasing women's schooling are, on average, even larger than the returns from increasing men's schooling.

EDC – 03
EDUCATIONAL SOCIOLOGY - 1

Block – 6
Population and Education

Unit – 3
Population Growth and Indian Policies

6.3.1:POPULATION IN INDIAN CONTEXT

The nature of ratio also varies in different states of India. The Census report 1991 resuals that sex ratio is lowest in Chandigarh. It is 793 per thousands and it is highest in Himachal Pradesh which is 996. The sex ratio in West Bengal is 917, Rajasthan 913 and Bihar. These are of identical nature in the two states.

Age : Age is the next important components of population composition. The age structure is influenced by three basic determinants which are : natality, mortality and mobility. The socio-economic condition is also responsible for ae structure, Africa, Asia and Latin America have high birth rates. So, child population is greater in these regions. Howeverlongivity of life is remarkably short in the country.

About 40% of population range between 0 to 15 years of age. According to 1991 census (India) report 36.5% population range in the age-group 0 to 14 years. They need to go to elementary schools. So, elementary school going children comprise almost, one third of total population of the country, this is the experience in India.

The United States, North Western Europe, Australia, USSR, New Zealand and Japan have low rate of fertility and child birth. These are all developed countries of the world socio-economically.

The Table 9 represents the age-distribution of world population given by U.N. publication 1983.

Table 9 : World : Age-distribution by Major Region

Region/Country	Age-Distribution in Percentage			Total Dependency Ratio
	0-14	15-64	65+	
World	35.0	58.6	5.7	70.0
More developed region	23.0	65.6	11.4	52.6
Less developed region	40.0	56.2	3.8	77.8
Africa	45.2	51.2	3.1	93.4
Latin America	39.4	56.3	4.3	77.5
North America	22.6	66.3	11.1	50.7
South Asia	40.8	55.9	3.3	78.8
East South Asia	40.7	56.0	3.3	—
Middle South Asia	40.7	56.1	3.2	—
Europe	22.3	64.7	13.2	54.6
Western Europe	20.4	65.4	14.2	—
Australia	25.6	64.8	9.3	—
USSR (Former)	24.3	65.6	10.0	52.4
India	39.2	57.6	3.2	—

The Table clearly shows that Africa. East Middle and South East Asia have greater number of fertility and birth rates. It varies from 45.2% to 40.7%. These percentage comprise the age group 0-14. It is much higher; and it exceeds more than one third of the total population of these counties. Health, education and nutrition problem may be greeted the concern of these countries. North America. Europe and its western parts including more developed countries have low birth rates. Child population in the age-group 0.14 varies from 23% to 24.4% only. This is less than one fourth of the total population. USSR (Former) and Australia have identical nature of fertility

and birth rates. However India is almost nearer to less developed countries. More than 1/3 of population range from 0.14 years. It is for this reason universalization of education faces innumerable problem. Life expectancy is greatest in Europe countries, especially, in Western Europe 14% of people survive after 65 years of age. In developed countries. North America and Australia and former USSR, the percentages of population, over 65 years of age respectively, are 11.4%, 11.1%, 9.3% and 10% respectively. This indicates that death rates a low in these countries as compared to less developed countries. During eighties, Africa, India and Middle and South East Asia could not reise their life expectancy. Death rates were greater above age-level 65+. Naturally, old people decreased, since mortality was greater at this age. Finally, more developed countries including. North America, Western Europe, Australia, Former USSR, represent a greater percentage of adults which ranges from 66.3% to 64.8% of the total population (with the age-group 15-64).

So India's position in age-distribution of population is not encouraging. However, birth rates have-been controlled to a certain extent and death rates are also at low ebb. It is for this reason, the recent age structure seems to improve to a certain extent. After 2001 the percentage of child population decreased to 3% or so; and life span is increased to 3% more; so that the both birth rates and death rates are at low ebb. Almost 7% of population are, now above the age level 65+, and child population comes down to 34% and the total population. Naturally, 59% of population are within the age range from 15-64 at present.

Literacy

The UNESCO 1957 was of opinion that the illiterates could neither read or write. While, semi-literate could read and write but made orthographic errors. Naturally, a literate can read an write and does not make orthographic errors.

The U. N. population Commission considers, "the ability to read and write a simple message with understanding in any language," can be recognized as literate. The Indian census has adopted this definition.

The obvious question is what is the relationship between literacy and populationgrowth ?

It has been experienced that literate group of population are not so much productive as that of illiterate or semi-literate population. The highest and lowest percentage of literacy, in India can be shown in a tabular form, and can be compared the growth rate.

Table 10 : Census Report of India (1991)

States	Percentage of Literacy		
	Total	**Males**	**Females**
Sales with high percentage literacy			
Kerala	90.6	94.5	86.9
Mizoram	81.2	84.1	78.1
Goa	77.0	85.5	68.1
Tamil Nadu	63.7	74.9	52.3
Himachal Pradesh	63.5	74.6	52.5
Maharashtra	63.1	74.9	50.5
States with lower percentage literacy			
Bihar	38.5	52.6	23.1
Rajasthan	38.8	55.1	20.8
Uttar Pradesh	41.7	55.4	26.0
Andhra Pradesh	45.1	56.2	33.7
Orissa	48.6	62.4	34.4
Madhya Pradesh	43.5	N.A.	N.A.

This revealed that Kerala, Mizoram, Goa, Tamil Nadu, Himachal Pradesh and Maharashtra have greater percentage of literacy, whereas Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Andhra Pradesh have lowest literacy. On examination of the report of SCERT. West Bengal (1993) it has been absenced that the six states of India namely, "Andhra Pradesh, Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh which comprise 51% of India's population account for 59% of the iliterate population of India". And all other states of India which together have greater percentage of literacy account for only 49% of total population of India. These six former states with lower literacy rates have been identified as "BIMARU"/

It is evident, therefore, that literacy rates have a direct relationship with population growth. Literate countries think about qualities of life, and also, quality of populatin : rather than

quantitative growth of population. Literacy is, therefore, considered to be an important determinant of population composition.

Religion and Economic Composition

Religion and Economic composition are also important determinants to influence population factor. NCERT (1985), realized the fact that religion extends its wings to "beliefs, superstitions, rituals, faiths, values, philosophies which are now bracket under a wide umbrella called religion. Population growth is conducive to religions virtues may be traditionally accepted by some of the religious of the world. They react to population control. Also happened that erstwhile USSR declared, 'Mother Heroine Award' to those mothers who could give birth to twelve chldren; and, in this way, it encouraged population growth. This is not religion, but ideology. However, this view has now been changed.

Finally, economic factors is an effective determinant in population factors. The type of economy, availability of employment opportunities, level of income, economic status and the size of working force are vital economic factors of population composition.

6.3.2: INDIA AND POPULATION POLICY

You may be learnt that that India covers almost 2.4% of the world's total area and it homes about 17% of the world population. Hence, population growth has long been a concern of the government, and India has a lengthy history of explicit population policy. In the 1950s, the government began, in a modest way, one of the earliest national, government-sponsored family planning efforts in the developing world. The annual population growth rate in the previous decade (1941 to 1951) had been below 1.3 percent, and government planners optimistically believed that the population would continue to grow at roughly the same rate.

The government began a massive program to lower the birth rate from forty-one per 1,000 to a target of twenty to twenty-five per 1,000 by the mid-1970s and formulated and adopted the National Population Policy in 1976. The policy makers assumed that excessive family size was part and parcel of poverty and had to be dealt with as integral to a general development strategy. Education about the population problem became part of school curriculum under the Fifth Five-Year Plan (FY 1974-78). Cases of government-enforced sterilization made many question the propriety of state-sponsored birth control measures, however.

During the 1980s, an increased number of family planning programmes were implemented through the state governments with financial assistance from the central government. In rural areas, the programs were further extended through a network of primary health centers and sub-centers. By 1991, India had more than 150,000 public health facilities through which family planning programs were offered. Four special family planning projects were implemented under the Seventh Five-Year Plan (FY 1985-89).

Despite these developments in promoting family planning, the 1991 census results showed that India continued to have one of the most rapidly growing populations in the world. Between 1981 and 1991, the annual rate of population growth was estimated at about 2 percent... In FY 1986, the number of reproductive-age couples was 132.6 million, of whom only 37.5 percent were estimated to be protected effectively by some form of contraception. A goal of the seventh plan was to achieve an effective couple protection rate of 42 percent, requiring an annual increase of 2 percent in effective use of contraceptives.

The heavy centralization of India's family planning programme often prevents due consideration from being given to regional differences. Centralization is encouraged to a large extent by reliance on central government funding. As a result, many of the goals and assumptions of national population control programmes do not correspond exactly with local attitudes toward birth control. The successful use of women's clubs as a means of involving women in community-wide family planning activities impressed the state government to the degree that it set about organizing such clubs in every village in the state. Moreover, studies on population education were emphasized vigorously for awareness development particularly among the adolescents, youths and adults. To make population dynamics under reasonable control mechanisms the Government of India formulated freshly the National Population Policy in 2000.

National Population Policy-2000

Introduction

The NPP, 2000 has stated various aspects of population control and education mechanisms and declares "The overriding objective of economic and social development is to improve the quality of lives that people lead, to enhance their well-being, and to provide them with opportunities and choices to become productive assets in society". NPP, 2000 reviews early intervention strategies as:

"In 1952, India was the first country in the world to launch a national programme, emphasizing family planning to the extent necessary for reducing birth rates "to stabilize the population at a level consistent with the requirement of national economy"1. The National Health Policy, 1983 stated that replacement levels of total fertility rate (TFR) should be achieved by the year 2000.

On 11 May, 2000 India is projected to have 1 billion (100 crore) people, i.e. 16 percent of the world's population on 2.4 percent of the globe's land area. If current trends continue, India may overtake China in 2045, to become the most populous country in the world. While global population has increased threefold during this century, from 2 billion to 6 billion, the population of India has increased nearly five times from 238 million (23 crores) to 1 billion in the same period. India's current annual increase in population of 15.5 million is large enough to neutralize efforts to conserve the resource endowment and environment.

NPP, 2000 highlights **India's Demographic Achievement as :**

Half a century after formulating the national family welfare programme, India has :

reduced crude birth rate (CBR) from 40.8 (1951) to 26.4 (1998, SRS);

halved the infant mortality rate (IMR) from 146 per 1000 live births (1951) to 72 per 1000 live births (1998, SRS);

quadrupled the couple protection rate (CPR) from 10.4 percent (1971) to 44 percent (1999);

reduced crude death rate (CDR) from 25 (1951) to 9.0 (1998, SRS);

added 25 years to life expectancy from 37 years to 62 years;

achieved nearly universal awareness of the need for and methods of family planning, and

reduced total fertility rate from 6.0 (1951) to 3.3 (1997, SRS).

Needs of a new population policy have been looked as:

"Stabilizing population is an essential requirement for promoting sustainable development with more equitable distribution. However, it is as much a function of making reproductive health care accessible and affordable for all, as of increasing the provision and outreach of primary and secondary education, extending basic amenities including sanitation, safe drinking water and

housing, besides empowering women and enhancing their employment opportunities, and providing transport and communications"

The National Population Policy, 2000 (NPP 2000) affirms the commitment of government towards voluntary and informed choice and consent of citizens while availing of reproductive health care services, and continuation of the target free approach in administering family planning services. The NPP 2000 provides a policy framework for advancing goals and prioritizing strategies during the next decade, to meet the reproductive and child health needs of the people of India, and to achieve net replacement levels (TFR) by 2010. It is based upon the need to simultaneously address issues of child survival,

maternal health, and contraception, while increasing outreach and coverage of a comprehensive package of reproductive and child heath services by government, industry and the voluntary non-government sector, working in partnership.

Objectives of PPP, 2000

The immediate objective of the NPP 2000 is to address the unmet needs for contraception, health care infrastructure, and health personnel, and to provide integrated service delivery for basic reproductive and child health care. The medium-term objective is to bring the TFR to replacement levels by 2010, through vigorous implementation of inter-sectoral operational strategies. The long-term objective is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environmental protection

In pursuance of these objectives, the following National Socio-Demographic Goals to be achieved in each case by 2010 are formulated:

GOALS

Address the unmet needs for basic reproductive and child health services, supplies and infrastructure.

Make school education up to age 14 free and compulsory, and reduce drop outs at primary and secondary school levels to below 20 percent for both boys and girls.

Reduce infant mortality rate to below 30 per 1000 live births.

Reduce maternal mortality ratio to below 100 per 100,000 live births.

Achieve universal immunization of children against all vaccine preventable diseases.

Promote delayed marriage for girls, not earlier than age 18 and preferably after 20 years of age.

Achieve 80 percent institutional deliveries and 100 percent deliveries by trained persons.

Achieve universal access to information/counseling, and services for fertility regulation and contraception with a wide basket of choices.

Achieve 100 per cent registration of births, deaths, marriage and pregnancy.

Contain the spread of Acquired Immunodeficiency Syndrome (AIDS), and promote greater integration between the management of reproductive tract infections (RTI) and sexually transmitted infections (STI) and the National AIDS Control Organisation.

Prevent and control communicable diseases.

Integrate Indian Systems of Medicine (ISM) in the provision of reproductive and child health services, and in reaching out to households.

Promote vigorously the small family norm to achieve replacement levels of TFR.

Bring about convergence in implementation of related social sector programs so that family welfare becomes a people centred programme

If the NPP 2000 is fully implemented, we anticipate a population of 1107 million (110 crores) in 2010, instead of 1162 million (116 crores) projected by the Technical Group on Population Projections:

Promotional and Motivational Measures: Adoptation for the Small Family Norm

The following promotional and motivational measures will be undertaken:

Panchayats and Zila Parishads will be rewarded and honoured for exemplary performance in universalising the small family norm, achieving reductions in infant mortality and birth rates, and promoting literacy with completion of primary schooling.

The Balika Samridhi Yojana run by the Department of Women and Child Development, to promote survival and care of the girl child, will continue. A cash incentive of Rs. 500 is awarded at the birth of the girl child of birth order 1 or 2.

Maternity Benefit Scheme run by the Department of Rural Development will continue. A cash incentive of Rs. 500 is awarded to mothers who have their first child after 19 years of age, for birth of the first or second child only.

A Family Welfare-linked Health Insurance Plan will be established. Couples below the poverty line, who undergo sterilisation with not more than two living children, would become eligible (along with children) for health insurance (for hospitalisation) not exceeds Rs. 5000, and a personal accident insurance cover for the spouse undergoing sterilisation.

Couples below the poverty line, who marry after the legal age of marriage, register the marriage, have their first child after the mother reaches the age of 21, accept the small family norm, and adopt a terminal method after the birth of the second child, will be rewarded.

A revolving fund will be set up for income-generating activities by village-level self help groups, who provide community-level health care services.

Crèches and child care centres will be opened in rural areas and urban slums. This will facilitate and promote participation of women in paid employment.

A wider, affordable choice of contraceptives will be made accessible at diverse delivery points, with counseling services to enable acceptors to exercise voluntary and informed consent.

Facilities for safe abortion will be strengthened and expanded.

Products and services will be made affordable through innovative social marketing schemes.

Local entrepreneurs at village levels will be provided soft loans and encouraged to run ambulance services to supplement the existing arrangements for referral transportation.

Increased vocational training schemes for girls, leading to self-employment will be encouraged.

Strict enforcement of Child Marriage Restraint Act, 1976.

Strict enforcement of the Pre-Natal Diagnostic Techniques Act, 1994.

Soft loans to ensure mobility of the ANMs will be increased.

The 42nd Constitutional Amendment has frozen the number of representatives in the Lok Sabha (on the basis of population) at 1971 Census levels. The freeze is currently valid until 2001, and has served as an incentive for State Governments to fearlessly pursue the agenda for population stabilization. This freeze needs to be extended until 2026.

Strategic Themes

NPP, 2000 identifies **12 strategic themes** which would be simultaneously pursued in "stand alone" or inter-sectoral programmes in order to achieve the national socio-demographic goals for 2010. These are presented below:

Decentralised Planning and Programme Implementation

Convergence of Service Delivery at Village Levels

Empowering Women for Improved Health and Nutrition

Empowering Women for Improved Health and Nutrition

Meeting the Unmet Needs for Family Welfare Services

Under-Served Population Groups

Diverse Health Care Providers

Collaboration With and Commitments from Non-Government Organisations and the Private Sector

Mainstreaming Indian Systems of Medicine and Homeopathy

Contraceptive Technology and Research on Reproductive and Child Health

Providing for the Older Population

Information, Education, and Communication

Especially, Information, Education and Communication (IEC) of family welfare messages must be clear, focused and disseminated everywhere, including the remote corners of the country, and in local dialects. This will ensure that the messages are effectively conveyed. These need to be strengthened and their outreach widened, with locally relevant, and locally comprehensible media and messages. On the model of the total literacy campaigns which have successfully

mobilised local populations, there is need to undertake a massive national campaign on population related issues, via artists, popular film stars, doctors, vaidyas, hakims, nurses, local midwives, women's organizations, and youth organizations.

Educating people including students and adults is an innovative social tool in India through the use of media and schooling is the precondition for comprehensive national development as well as international understanding for which scientific temper of mind and will to change are obviously the hidden curriculum of the National Population Policy in India.

6.4: LET US SUM UP

Population dynamics is the changes of population of a region over a period of time, in relation to various human factors such as, social groups, religious, cultural economic, language and regional differences. It is concerned with age, sex, marital status, caste, class and the like. It also includes, births nd death rates migration, immegration life expentancy etc., of different groups of people.

It is for these reasons it has acquired a multidisciplinary states. It deals with various disciplines

like – Bio-social studies, Anthropology, philosophy, economics, geography, sociology and finally, Educational studies. Obviously, it is concerned with various theories of population and the related problem and prospects relevant to there theories. The population, geography and statistics study and analyse the growth rate and fertility rates all over the recognized countries of the world. It is for this reason population policies of India are studied in relation to human resource development and resource potentialities of the country.

6.5: SUGGESTED READINGS

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6.6: ASSIGNMENTS

a. Critically discuss the growth of literacy rate of India since 1947.

b. What are the factors that favour higher fertility in India ? Discuss the causes of population growth in India.

c. Mention the objective of National Population Policy - 2000.

POST GRADUATE DEGREE PROGRAMME (CBCS)

in

E D U C A T I O N

SEMESTER-I

EDC-04

Research Methodology-1

Self-Learning Material

DIRECTORATE OF OPEN & DISTANCE LEARNING

UNIVERSITY OF KALYANI

KALYANI-741235, WEST BENGAL

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Foreword

Satisfying distance learners' needs of verifying kinds and magnitude as well as minimizing distance and to reach the unreached in Open and Distance Learning (ODL) systems has the novelty in it. Nevertheless, this novelty puts challenges to the ODL systems managers, curriculum designers, Self Learning Materials (SLMs) writers, editors, production professionals and may other personnel involved in it. A dedicated team of University of Kalyani under leadership of Hon'ble Vice-Chancellor have puts their best efforts, committed professionalism as a Team for promoting Post Graduate Programmes under distance mode under University of Kalyani. Developing quality printed SLMs for students under DODL within a limited time to cater academic requirements of the Course as per standards set by Distance Education Bureau of the University Grants Commission, New Delhi, India under Open and Distance Mode UGC Regulations, 2017 successfully completed with best efforts.

Utmost care has been taken to develop the SLMs useful to the learners and to avoid errors as far as possible. Further, suggestions from the learners-end will be gracefully admitted and to be appreciated.

During the academic productions of the SLMs, the team received continuously positive stimulations and feedback from Professor (Dr.) Sankar Kumar Ghosh, Hon'ble Vice-Chancellor, University of Kalyani, who kindly accorded directions, encouragements and suggestions, made constructive criticisms to develop it within proper requirements. We gracefully, acknowledge his inspiration and guidance.

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For a comprehensive, learners friendly, adaptable text that meets curriculum requirements of the Post Graduate Programme through distance mode.

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Director
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SEMESTER-I

EDC-04

RESEARCH METHODOLOGY-1

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EDC- 04
RESEARCH METHODOLOGY- 1

Block – 1
Educational Research

CONTENT STRUCTURE :

Introduction

Objectives

1.1.0 : Introduction to Educational Research

1.1.1 : Research - Concept & Meaning

1.1.2 : Scientific Inquiry

1.1.3 : Nature and Characteristics of Research

1.1.4 : Educational Research

2.0 : Types of Educational Research

1.2.1 : Basic, Applied and Action Research

1.2.2 : Longitudinal and Cross Sectional Research

1.2.3 : Quantitative and Qualitative Paradigms

Let Us Sum up

Suggested Reading

Assignment

Answers to 'Check Your Progress'

INTRODUCTION

Welcome to the arena of Educational Research. But before going into the Blok, first ask yourself what is Research? And think about that. In the quest for knowledge, which marks this civilization, research has become an essential part of human activity. Research is a search or investigation directed to the discovery of some fact by careful consideration or study of a subject; a course of critical or scientific enquiry. In this Block, we will discuss the different methods of acquiring knowledge like – authority,

tradition, reasoning, etc. Then we will try to understand the basic concepts of scientific inquiry, research and educational research. Then we will discuss some of the types of educational research. Research is a scientific process, so go through the Block thoroughly and critically and evaluate yourself. We hope you will enjoy this Block and it will motivate you to think in new ways.

OBJECTIVES:

By the end of this Block you will be able to :

- define and explain the meaning and nature of scientific inquiry, research and educational research ;
- identify different methods of acquiring knowledge ;
- distinguish between scientific inquiry and research ;
- describe the steps of research ;
- explain the meaning of basic, applied, longitudinal, cross-sectional, quantitative and qualitative research ;
- differentiate basic and applied, applied and action, longitudinal and cross-sectional, quantitative and qualitative research ;
- cite examples of different types of research ;
- Categorize different types of research.

Unit - 1
INTRODUCTION TO EDUCATIONAL RESEARCH

1.1.1 : RESEARCH – CONCEPT & MEANING

Research is a careful and exhaustive investigation of a phenomenon with an objective of advancing knowledge. Dictionaries describe **'Research'** as "the study of materials and sources in order to establish facts and reach new conclusion."(Oxf. Dict.)

According to Theodorson and Theodorson "it is a systematic and objective attempt to study a problem for the purpose of deriving general principles".

Robert Burns describes it as "a systematic investigation to find solution to a problem."

Research is the pursuit of truth with the help of study, observation, comparison and experiment; the search for knowledge through objective and systematic method of finding solutions to a problem (Kothari, 2006).

According to Howard & Sharpe research "is seeking through methodical processes to each toone's body of knowledge and hopefully to let of others, by the discovery of nontrivial facts and insights".

Redman & Mary have defined research as a systematized effort to gain new knowledge. Two points are clear from the above definitions of Research- it is **systematic** and the main purpose is **advancing or generating knowledge**.

Now the question arises — what are the general methods for acquiring knowledge? How does research differ from these methods? Try to understand these differences.

METHODS OF ACQUIRING KNOWLEDGE

Authority : Seeking advice from an authority was a very well accepted method for solving problems. You must gain knowledge from parents, teachers, experts, etc. Generally you accept

something as true because someone in position of authority says it is true. Relying on authorities to obtain knowledge often saves time and effort, but they have also some limitations. It is easy to overestimate the expertise of other persons. It is also assumed that they are right when they are not. Authorities may speak on such fields they know little about, they are then simply wrong. Sometimes an expert in one area may try to use his/her authority in an unrelated area. You may see in an advertisement in which a cricketer gives expert comments about a car – is it not surprising? Moreover, there are some questions, which are difficult to answer like - who is or is not an authority? Whom do you believe when different authorities disagree? Therefore, care should be taken in choosing authorities and evaluating their knowledge.

Tradition : You may also rely on tradition for gaining knowledge. Tradition isa special case of authority – the authority of the past. People unconsciously orunquestioningly accept many traditions. Tradition means accepting something as beingtrue because "it's the way things have always been". But one should not alwaysassume that everything in tradition or custom is correct and valid. Some traditionalknowledge begin as simple prejudice. Some traditional knowledge were once true but later found to be erroneous and so it is no longer true. So, knowledge from tradition should be evaluated carefully before considering them as truth.

Personal Experiences : Sometimes you accept something as true, because you personally see or experience it. Personal experience (seeing in believing) is a useful and forceful source of knowledge. But the question is - is it reliable? It has some limitations. According to Van Dalen – "A person may make errors when observing or when reporting what he has seen or done. He may – (1) omit evidence that does not agree with his opinion; (2) use measuring instruments that require many subjective estimates; (3) establish a belief on insufficient evidence; (4) fail to observe significant factors relating to a specific situation or (5) draw improper conclusions or inferences owing to personal prejudice." Therefore, you must be very careful about this knowledge.

Another means for acquiring knowledge about the world is reasoning which consists of deductive reasoning, inductive reasoning and combined inductive-deductive reasoning.

Deduction : Aristotle and his followers developed this reasoning (called **syllogism**) to verify or test the validity of a particular conclusion. In deduction one may proceed from general to specific statements or from known to unknown. It establishes a logical relationship between a **major premise**, a **minor premise** and a conclusion. An example is given below:

- ***Major Premise***: All animals are mortal
- ***Minor Premise***: Dog is an Animal
- ***Conclusion*** : Dog will die.

A major premise is a previously established truth or dogma; a minor premise is a particular case related to the major premise. But deduction is not fruitful in arriving at new conclusions. A false or incomplete major premise may lead to error. Semanticor verbal symbolism often creates some difficulties. Therefore deduction cannot be relied upon exclusively in searching for the truth.

Induction- In induction, one proceeds from specific observation to general conclusions. In deduction, you have to rely on major premises. But with the help of inductive reasoning, one can observe experiments and tabulate the facts to reach generalization. Induction helps one to reach a general conclusion by observing specific situations. Perfect Induction (examining every instance of a phenomenon) is not possible, imperfect induction does not provide a completely satisfactory knowledge for solving problems.

Hence scientists think a rational combination of deductive-inductive or inductive deductive approach for searching truth in this empirical world. Actually this implies a "back-and-forth" movement in reasoning and a conclusive means for determing truth after testing hypothesis.

There are also some other approaches to gain knowledge like – **media**, **common sense**, etc. But what do you think – are these sources reliable and objective? Perhapsnot. Is there any such method for acquiring more accurate and reliable knowledge?Somewhere in the seventeenth century, man developed a new method of acquiringknowledge – the **scientific method** or **scientific inquiry**, which may be termed asthe fourth and last means for determinating truth for extension of knowledge.

SCIENCE : A WAY OF KNOWING There are a variety of ways of knowing whether or not something is true. Science is one of those ways; scientists have established a set of rules and methodology by which truth is verified (Kuhn, 1962). The process of science generally followsa paradigm that defines the rules and describes procedures, instrumentation and methods of interpretation of data (Wilber, 1998).

1.1.2 : SCIENTIFIC INQUIRY

The discovery of the process of scientific inquiry is among the most fundamental human achievements in history. Surprisingly, modern methods of scientific inquiry were not generally accepted until the late sixteenth and early seventeenth centuries. Scientific inquiry is a term that encompasses a variety of techniques that scientists use to explore the natural world and propose explanations based on the evidence they find. According to the National Science Education Standards (National Research Council, 1996) scientific inquiry activities include making observations; posing questions; finding out what is already known; planning investigations; reviewing past knowledge in light of experimental evidence; using tools to gather, analyze and interpret data; proposing explanation; and communicating the results. Mind it, research is an inductive-deductive process.

Steps of Scientific Inquiry or Method – There are no simple recipes for doing scientific method. Here we discuss some approaches given by eminent persons :

Hortan and Hunt (1984) have pointed out the following steps in scientific method of investigation :

Define the problem – the scientific inquiry usually begins with a question or problem, which is raised while observing some phenomenon. The problem should be defined more precisely in such a way that is worth studying through scientific method.

Review of Literature – the purposes of this review include seeing what others have said about this problem; what theories have been addressed to it; what are the flaws in the existing knowledge about the problem; finding the errors of other researchers.

Formulate the hypothesis – if there is no known answer to the problem, then one or more hypotheses or explanations are proposed which can be tested or verified.

Plan the Research Design – in this step the processes to how, what and where the data is to be collected and analysed are to be outlined.

Collection of data – collection of facts and information in accordance with the research design.

Analyze the data – different methods (quantitative or qualitative) are used to analyse the collected data.

Draw conclusion – this step verifies whether the formulated hypothesis is true or false. The conclusions of the study are related to the original body of knowledge, which is modified in accordance with the new findings.

Replicate the study – any research findings is confirmed by replication. If the conclusion from a scientific method is applicable in many practical situations then it is accepted as true.

In 1910, John Dewey in ***'How we Think'*** analyzed the stages of activity involved in the act of reflective thinking. When using the scientific method, man engages himself in a thinking process called reflective thinking, which consists of —

- A felt difficulty
- Location and definition of difficulty
- Suggested solutions of the problem – hypothesis
- Deductively reasoning out the consequences of the suggested solution.
- Testing the hypothesis by action.

According to Theodorsan and Theodorsan, scientific method involves the following steps. *First*, the problem is defined. *Second*, the problem is stated in terms of a particular theoretical framework and related to relevant findings of previous study. *Third*, hypothesis or hypotheses are framed. *Fourth* the procedure is determined to test the hypotheses. *Fifth* the data are collected. *Sixth*, the data are analyzed to test the hypotheses. Finally, drawing conclusions.

Hortan and Hunt have given the following characteristics of scientific method or research:

Verifiable evidence – means other can see and check the factual observations.

Accuracy – means the truth or correctness of description.

Precision – means exactness.

Systemization – means everything should be done in an organised and

systematic way so that conclusions are reliable.

Objectivity – means free from all biases and vested interests.

Recording – everything should be recorded as quickly as possible.

Control – means controlling all variables except one and then attempting to verify what happens when that variable is varied.

Training investigators – means imparting knowledge to investigator so that she can understand the above-mentioned processes.

Now the question is how is research related to scientific inquiry? In fact, both the terms are used synonymously in educational discussions. Both terms have some common elements. ***Best and Kahn*** have discussed the differences in the following way:

Research is considered to be the *more formal, systematic and intensive process of carrying on a scientific method of analysis*. Research is a more systematic activity that is directed towards discovery and the development of an organized body of knowledge. Research may be defined as the *systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles or theories, resulting in prediction and possibly ultimate control of events.*

1.1.3 : NATURE AND CHARACTERISTICS OF RESEARCH

Let us learn this area of knowledge step by step.

Research originates with a question or problem. Look around you. The world is filled with unanswered questions, unresolved problems. Everywhere we look, we observe things that cause us to wonder, to speculate, and to ask questions. Consider the unresolved situations that evoke these questions: Why? What's the cause of that? What does it all mean? These are everyday questions. With questions like these, research begins. And by asking questions, we strike the first spark igniting a chain reaction that terminates in the research process. An inquisitive mind is the beginning of research.

Research requires a clear articulation of a goal. A clear, unambiguous statement of the problem is critical. This statement is an exercise in intellectual honesty. This is basic and is required for the success of any research undertaking. Without it, the research is on shaky ground indeed.

Research requires a specific plan of procedure. Research is not an excursion into happy expectation. It is, instead, a carefully planned attack, a search-and-discover mission explicitly planned in advance. The overall research effort must be explicitly planned and logically designed. Researchers plan their overall research design and specific research methods in a purposeful way — that is, to yield data relevant to their particular research problem.

Research usually divides the principal problem into more manageable sub problems. The whole is composed of the sum of its parts. That is a universal natural law; that is also a good precept to observe in thinking about one's principal goal in research. We break down principal problems much more frequently than we realize.The researcher usually cannot deal with the principal research problem in to. To proceed logically, one should closely inspect the principal problem because research will soon cause the appropriate and, in fact, necessary sub problems to float to the surface. By resolving them, we finally resolve the main problem. If researchers don't take the time or trouble to isolate the lesser problems within the major problem, their research projects become cumbersome and unwieldy.

Research is guided by the specific research problem, question, or hypothesis.

Having stated the problem and the attendant sub problems, each sub problem is then viewed through a ***construct*** called a hypothesis. A hypothesis is a logical supposition, a reasonable guess, and an educated conjecture. It may direct your thinking to the possible source of information that will aid in resolving the research problem through the resolution of each attendant sub problem.

Research accepts certain critical assumptions. In your research, it is important that others know what you assume with respect to your problem. For, if one is to judge the quality of your study, then the knowledge of what you assume as basic to the very existence of your study is vitally important. The assumption must be valid or else the research cannot proceed. An assumption is a condition that is taken for granted, without which the research situation would be impossible.

Research requires the collection and interpretation of data in attempting to resolve the problem that initiated the research. Having now isolated the problem,divided it into appropriate sub problems, posited reasonable questions or hypotheses,and recognized the assumptions that are basic to the entire effort, the next step is tocollect whatever data seem appropriate and to organize them in meaningful ways so that they can be interpreted.

Research is, by its nature, cyclical; or more exactly, helical. The research process follows a cycle and begins simply. It follows logical, developmental steps.

Best and Kahn (1999) have described the following *characteristics* of research:

1. Research is directed toward the solution of a problem.

2. Research emphasizes the development of generalization, principles, or theories that will be helpful in predicting future occurrences.
3. Research is based upon observable experiences or empirical evidence.
4. Research demands accurate observation and description.
5. Research involves gathering new data from primary or first-hand sources or using existing data for a new purpose.
6. Research is more often characterized by carefully designed procedures that apply rigorous analysis.
7. Research requires expertise.
8. Research strives to be objective and logical, applying every possible test to validate the procedures employed, the data collected and the conclusion reached.
9. Research involves the quest for answers to unsolved problems.
10. Research is characterized by patient and unhurried activity.
11. Research is carefully recorded and reported.

WHAT IS NOT RESEARCH

Research is not mere information gathering
Research is not mere transportation of facts from one location to another
Research is not merely rummaging for information
Research is not a catchword used to get attention

12. Research sometimes requires courage and intellectual honesty.
13. Research, especially in education, is not value-neutral.

Characteristics of a good research:

While analyzing the discussions of eminent educationalists and social scientists, we can draw the following characteristics of a good research.

- 1. Research is directed towards the solution of a problem
- 2. Research is a continuous enquiry in search of knowledge

- 3. Research emphasis the development of generalization, principles, theories
- 4. Research is based upon observable experiences and empirical evidences
- 5. Research rejects revelation and dogmas as methods of establishing knowledge
- 6. Research employs in depth review of related literature
- 7. Research depends on valid and reliable data gathering procedure
- 8. Research demands accurate observations and descriptions
- 9. Research applies systematic and scientific procedure for the study
- 10. Research involves gathering of new data from first hand sources (primary) or existing
- data (secondary sources) for a new purposes
- 11. Research is based on carefully designed procedure with rigorous analysis
- 12. Research requires expertise
- 13. Research is a objective, logical process and eliminate personal bias
- 14. Research involve the quest for answer to unsolved problems
- 15. Possibility for Replication
- 16. Research is characterized by patient and unhurried activity
- 17. Research is carefully recorded and reported
- 18. Research sometimes required courage
- 19. Quantitative Research involves hypotheses testing using suitable statistical techniques
- 20. Qualitative Research involve objective thick description on thin data

Let us check our progress I

1. The main purpose of research is _____ .
2. When someone proceeds from specific to general principles thens/he is reasoning _____ .
3. Hypothesis means _____ .
4. According to the most of the writers, the first step of scientificinquiry is _____.

1.1.4 : EDUCATIONAL RESEARCH

We have had a lot of discussion about research, its steps and characteristics. From the above discussion – can you define educational research? Stop, think and progress. Educational research is an application of scientific method to the study of educational problems. It is also a systematic investigation to gain a better understanding of the educational process. Therefore the steps of educational Research must be the same as mentioned in steps of scientific method. Let us look at some definitions of educational research.

Definition of Educational Research

'Educational research is often carried out in naturalistic settings that may carry threats to the validity of the study such as loss of subjects, selection bias, historical events or maturation' (Bordage and Dawson, 2003)

Travers : Educational research is that activity which is directed towards development of a science of behaviour in educational situation. The ultimate aim of such a science is to provide knowledge that will permit the educator to achieve his goals by the most effective methods.

Lazarsfeld and Sieber : By educational research it is meant here the whole of the efforts carried out by public or private bodies in order to improve educational methods and educational activities in general, whether involving scientific research at a high level or more modest experiments concerning the school system and educational methods.

Educational research concerns itself with both theoretical and policy and practice issues. It tries to understand these practical concerns, explain them and recommend best ways of dealing with them to maximize benefits of education. Nwana (2005), attempted to define the categories into which educational research can fall. He came up with the following categories:

1. Psychological; e.g. learning theories, factors that affect learning, remembering and forgetting, motivation, maturation, growth and development etc.
2. Philosophical e.g. worthiness of education, educational aims, moral judgements, methods of reasoning, meaning, nature and sources of knowledge etc.
3. Evaluation e.g. continuous assessment, test instruments, examinations, item analysis, students' report cards, curriculum evaluation etc.
4. Curriculum content e.g. the choice of school subjects, factors affecting choice of curriculum content, curriculum organization, curriculum implementation etc.

5. Methodological e.g. methods of teaching, teacher effectiveness, instructional resources, teaching practice, micro-teaching etc.
6. Administrative e.g. school financing, discipline, school records, classroom management, leadership styles, recruitment and employment of staff etc.
7. Sociological e.g. school-community relations, teacher-pupil relations, interpersonal relations within the school, classroom behaviour of students etc.
8. Historical e.g. history of institutions, programmes, places or persons of educational interest.

According to the Report of the **First International Conference on Educational Research**: Research is literally speaking a kind of human behaviour, an activity in which people engage. In education, teachers, administrators, scholars, or others engage in educational research, when they systematically assemble information about schools, school children, the social matrix in which a schoolsystem is determined, the characteristics of the learner or the interaction between the school and the pupils.

From the above definitions, you must agree that educational research involves an application of the main principles of scientific research to the solution of different educational problems. Educational research, however, cannot always be viewed as strictly scientific. Because of the nature of problem it attempts to solve, educational research acquires some special features as stated below :

- A sound philosophy of education must form the basis of evaluating any principles and activities of educational research. Due to the social nature of education, most of the problems are complex and philosophical nature.
- Educational research demands imagination and insight as well as scientific attitude of mind.
- An educational problem is generally related with several disciplines like – psychology, philosophy, sociology, anthropology etc. Therefore, educational research demands an inter-disciplinary approach.
- Many educational research deal with historical, philosophical or comparative data and involve subjective interpretation and deduction.
- Educational research cannot achieve the degree of precision as in the physical sciences.

- Most educational research do not require very costly material.
- Educational research is not only meant for specialist. Any teacher with common sense, intelligence and insight can undertake this type of research, but in the beginning, such persons need some guidance and training from an expert.
- Most of the results in educational research are not too precise due to the difficulty of controlling of variables.
- Educational research always aims explicitly at human well-being, hence it is never value-free.
- Educational research may admit varying paradigms of world view about the reality, hence it may be either of quantitative, qualitative or mixed type.

CLASSIFICATION OF SCIENTIFIC KNOWLEDGE

Knowledge, especially scientific knowledge, can be classified into six categories:

1. **Facts** : an idea or action that can be verified. Example: population of India in the latest census.
2. **Concepts** : rules that allow for categorization of events, places, ideas, etc.Example: a DESK is a piece of furniture (also a concept) designed with a flat top for writing.
3. **Principles** : relationship(s) between/among facts and/or concepts.Example: Maxims of teaching
4. **Hypotheses** : educated guess about relationships (principles). Example:natural intelligence is a better predictor of eco-friendly behaviour than other intelligence.
5. **Theories** : set of facts, concepts, and principles that allow description and explanation. Example: Piaget's theory of cognitive development. and
6. **Laws** : firmly established, thoroughly tested, principle or theory. Example: a fixed interval schedule for delivering reinforcement produces a Scalloping effect on behaviour.

Purpose of Educational Research :

The Educational research has enormous purposes. Some important purposes are presented as following.

- To identify truth regarding Enrolment, retention, dropout, quality of Education and so forth
- To build new knowledge regarding the methodology, pedagogy or other core subject areas
- Adding of existing stock of knowledge related to educational field
- To solve a problem related to classroom, institution, administrative level, policy level
- Invention of new teaching methods, curriculum transaction strategies, effective grouping
- technique and so forth
- Realizing the exact problem of educational sector
- Assess the Effect of New methodology of teaching
- Identify and assess the ICT enabled classroom and teaching
- To understand the teachers knowledge on latest evaluation techniques
- To identify the hindrances to achieve universalization of education

Characteristics of Educational Research:

1. Educational research is directed towards the solution of a problem in the field of education. It may attempt to answer a question or to determine the relation between two or more variables.
2. It emphasizes the development of generalizations, principles or theories that will be helpful in predicting future occurrences.
3. Educational research, usually goes beyond the specific objects, groups or situations investigated and infers characteristics of a target population from the sample observed.
4. Educational research involves getting new data from primary or first hand sources or using existing data for a new purpose.
5. Educational research accepts only what can be verified by observation. Certain interesting questions do not tend themselves to research procedures.
6. Although research activity may at times be somewhat random and unsystematic, it is more often characterized by carefully designed procedures, always applying rigorous

analysis. Although trial and error are often involved, research is rarely a blind, shotgun investigation trying something to see what happens.

7. Research strives to be objective and logical, applying every possible test to validate the procedures employed, the data collected and the conclusions reached. The researcher attempts to eliminate personal bias.
8. Research requires expertise. The researcher knows what is already known about the problem and how others have investigated.
9. Educational research involves the quest for answers to unsolved problems. Pushing back the frontiers of ignorance is its goal and originality is frequently the quality of a good research project.
10. Educational research is based on insight and imagination. It needs the service of man who looks beyond the present.
11. Educational research requires interdisciplinary approach. It is related to the study of complex relations about facts.
12. Educational research is not so exact a research as physical science. In the latter we can control the events but in educational research it is not possible.

Unit - 2:
TYPES OF EDUCATIONAL RESEARCH

1.2.1:BASIC, APPLIED AND ACTION RESEARCH

In general, research can be classified as basic research or applied research. Some researchers adopt a more detached, scientific and academic orientation; others are more activist, pragmatic and reform oriented. This difference in orientation resolves around who consumes the findings and who uses them.

Simply, some use research to advance knowledge, whereas, others use it to solve specific problems. Basic research is for advancing fundamental knowledge and applied research is directed towards specific practical use.

Basic / Fundamental / Pure / Academic Research : Basic research advances fundamental knowledge and often leads to knowledge for knowledge's sake. This type of research has no immediate or planned application, may later result in further research of an applied nature. It is the source of most new scientific ideas and ways of thinking and its primary evidence is the scientific community. According to Travers – "Basic research is designed to add to anorganized body of scientific knowledge and does not necessarily produce results of immediate practical value." It is primarily concerned with the formulation of theories or generalization to increase the volume of existing knowledge.

Although pure research may find some practical application in future, it is conducted basically for its own sake without considering the application. This type of research is generally carried or in a laboratory setting or other sterile environment and sometimes with animals. One such example is the development of "**Theory of Operant Conditioning**" by Skinner.

Applied Research : As education is applied in nature, most researches in the field of education is applied in nature. Applied research involves the application of theories or principles developed through basic research to the solution of practical problems. Here the established theories or principles are operationalized in the actual field. The primary audiences of applied

research findings are practioners like teachers, counselors, decision makers etc. According to Travers – "Applied research is undertaken to solve an immediate practical problem and the goal of adding to adding to scientific knowledge is secondary." Applied research, too can build new knowledge. Nonetheless, applied research is essential for nourishing the expansion of knowledge. However, its methodology is not as rigorous as that of basic research. Application of Skinner's theory for the development of **programmed learning** material is an example of applied research in the field of education.

Action Research : A very significant trend in educational research has been the involvement of practioners of education in research work like – teachers, administrators and others. This approach is called action research. It is a significant variant of applied research, which differs form its other variants with respect to the researcher's involvement in the action process in order to improve them. Here are some definitions given by experts to explain the meaning of Action Research:

Educational action research is an enquiry which is carried out in order to understand, to evaluate and then to change, in order to improve same educational practice (Bassey, 1998)

Action research is a flexible spiral process which allows action (change, improvement) and research (understanding, knowledge) to be advised at the same tense. (Dick, 2002)

Action research is the research a person conducts in order to enable him to achieve his purposes more effectively. A teacher conducts action research to improve his own teaching. A school administrator conducts action research to improve his administrative behaviour. (Corey)

"Action research is a small-scale intervention in the functioning of the real world and a close examination of the effects of such intervention" — (Cohen and Manion, 1985).

After receiving different definition, it can be said that a action research:

- has a practical, problem solving emphasis.
- is carried out by individual professions and educators.
- aim to improve educational process.
- is undertaken to understand, evaluate and change the process.
- involves a cyclic process.

Here an action research acts as a practioner in which the researcher undertakes to solve imminent problem and takes quick decisions for the improvement of existing practices. In this context Lehmann and Mehrensoriented research, but with the stipulation that the researcher is the same person as the practioners who will make and live with the decision. “Action researcher is focused on immediate application, not on the development of theory or on general application. Action research is primarily conducted on the immediately available small sample to solve the immediate problem of the same group. According to Corey – the process by which practioners, attempts to study their problems scientifically in order to guide, correct, evaluate their decision and action is called action research.

The simplest approach of action research can be viewed in term of following diagrammatic representation :

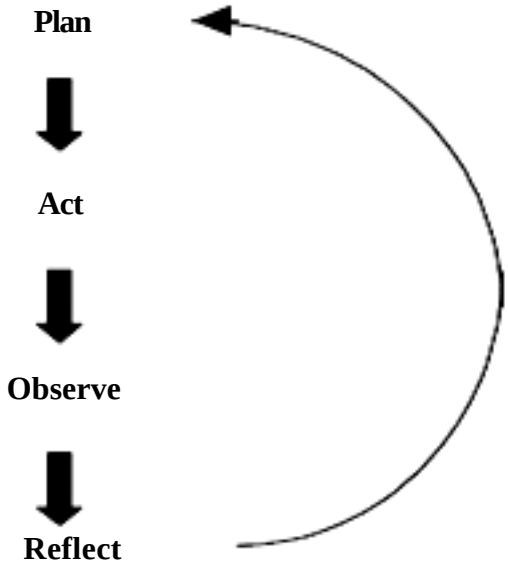


Fig. 2.1 : *Simple Action Research Model*

Here, the researcher first considers the particular focus of educational problem and then plans to implement some activities to solve the problem. Then he implements a series of activities as considered. Next he observes the outcome. Then he evaluates the outcomes reflecting what has happened and then plans further if necessary. So, if we consider the extended action research, the diagram is as follow :

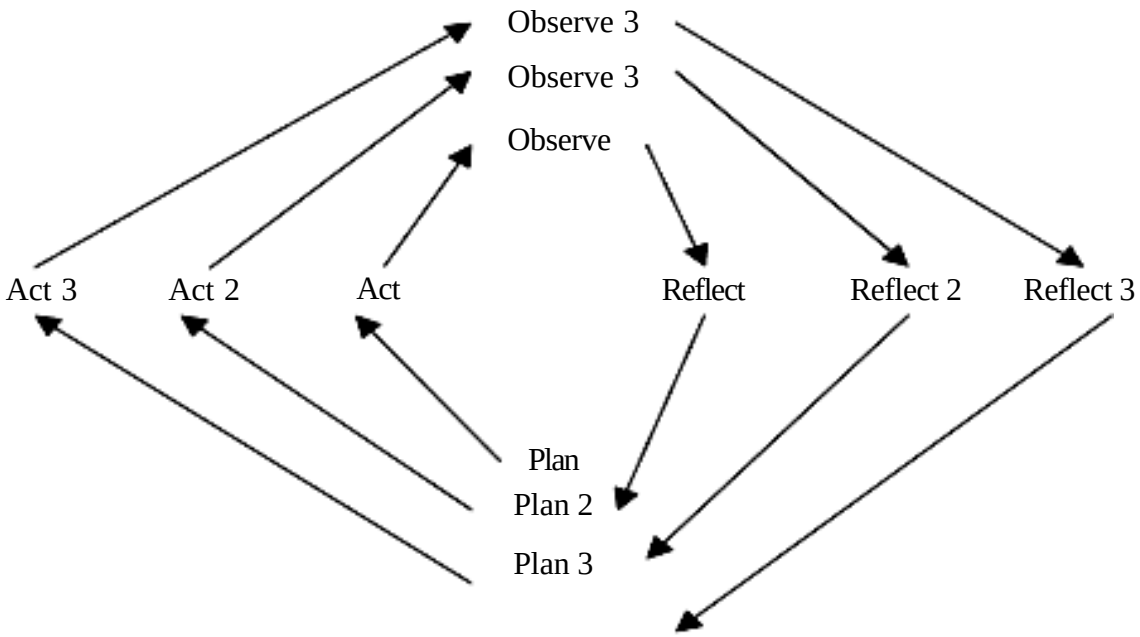


Fig. 2.2 : Extended Model of Action Research

Do not think that there is any conflict between basic or applied research. There is no rigid separation. The difference is only in emphasis and not in method or spirit. Researchers in the two areas cooperate and maintain friendly relations. Anyone can move from on wing to another at different stages of research work. The most important feature of action research is that its outcomes are put into immediate action.

The purposes of action research in educational practice generally fall into five categories : a means for remedying problems diagnosed ; a means for continuous teacher development, a means for injecting additional knowledge and skills in teaching curriculum development or evaluation strategies, a means for improving communication between practising teachers as regular researchers and a means for local theory generation.

1.2.2 : LONGITUDINAL AND CROSS SECTIONAL RESEARCH

Another dimension of research is the treatment of time. Research can be classified into two groups – a single point in time (cross-sectional research) and multiple time points (longitudinal research).

Longitudinal Research :

It consists in making repeated observations or measurements of the same group over a period of time. It is a kind of extended **case study**.

This approach examines the Block/ Blocks more than one time. It is usually more complex and costly than cross-sectional research but it is also more powerful. Suppose, a researcher wants to study the changes of cognitive development of children from infancy to adulthood, then he may test and measure the changes of the same group from infancy to adulthood. This is longitudinal in nature. Here the sample is very very small but the measurement are large on numbers.

In spite of many advantages, it has some limitations. The data are usually obtained from a small number of subjects. Hence if sampling is poor, the results are biased. Sometimes it is very difficult to keep track with the sample, especially when the sample selected from a mobile community. Moreover, the same instruments cannot be used for a long time. But the main advantage of this approach is that it can nullify the different intervening variables.

Cross-sectional research :

In cross-sectional research, researcher observes at one point in time. It consists in a series of parallel case studies and includes more subjects. For example a researcher can measure at one time the cognitive development pattern of different stages of development from infancy to adulthood for studying the changes of cognitive development. This approach involves of taking random samples from successive grade or stage. This approach is usually simple and least costly. Here the different age or grade groups are studied and compared simultaneously. But in the approach researcher cannot remove the related variables, which may affect the result. Here sample size is large but the number of measurements are smaller.

Sometimes longitudianal and cross-sectional researches are called developmental or growth studies when the researcher's main purpose is to study changes over time or due to natural maturation of human subjects.

Let us check our progress II

1. Educational research is an application of scientific method tothe study of _____ .
2. Research activities of Binnet& Simon is basically_____ research.
3. Longitudinal research consists in making repeated observation of the same _____ .

1.2.3 : QUANTITATIVE AND QUALITATIVE PARADIGM

The quantitative approach involves the collection of numerical data in order to explain, predict and/or control phenomena of interest, data analysis is mainly statistical. This research employs quantitative measurements. This approach uses structured questions where the response options have been predetermined and a large number of respondents are involved. The earlier presentation given in this Block basically pertains to quantitative research method. It may be denied as :

"Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results and discussion." (Creswell, 2008). Some examples of this type of research approach involve research strategies like Correlational studies, Survey research, Causal-comparative studies, ex-post-facto-studies, quasi-experimental studies, experiential studies, etc. You will get ample scope to understand some of these research strategies in other Blocks of EDC – 4 of your course.

Qualitative research is an umbrella term. "It is a way of knowing that assumes that the researcher gathers, organizes and interprets information (usually in words or pictures) with his or her eyes and ears as a filter. It is a way of doing that often involves in-depth interviews and/or observations of human natural and social settings. It can be contrasted with quantitative research, which relies heavily on hypothesis testing, cause and effect, and statistical analyses." — (Lichtman, 2006).

Further, Creswell, (2007) puts : **"Qualitative research** is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging quations and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final writting report has a flexible structure."

Qualitative methodology and quantitative methodology differ in many aspects though they are not mutually exclusive. The differences between the two approaches are located in the overall

Theoretical	Qualitative	Quantitative
Nature of Reality	Multiple realities. Reality is constructed by the observer.	Single reality. In a single well-designed study, a reasoable approximation of reality can be observed
Objectivity Subjectivity Dichotomy	Subjectivity based on role of researcher is expected. Objectivity is inconsistent with the idea of a constructed reality.	Objectivity is critical a scientific approach to acquiring knowledge.
Role of Researcher	Researcher is central to any study. Interpretations are based on researcher's experience background.	Researcher tries to remain outside of the system, keeping biases to a minimum.
Generalizabity, Cause and Effect	Not interested in cause and effect or generalizing, but want people to apply to own situations.	Goal to apply in other situations.
Ways of knowing	Multiple ways of knowing. We can learn about something in many ways.	Best way of knowing is through the process of science.
Purpose	Understand and interpret social interactions	Test hypotheses. Look at cause and effect. Prediction.
Group Studied	Tends to be smaller, non-random. Researchers amy be involved in lives of those studied.	Tends to be larger, randomly selected. Anonymity important.
Variables	Study of the whole rather than specific variables.	A few variables studied.
Type of Data Collected	Emphasis on words, Increasing interest in visual data.	Emphasis on numbers.
Type of Data Analysis	Coding and themes. Some use computers.	Statistical analysis. Computers.
Writing Style	Less formal, more personal.	Scientific and impersonal.

form, focus, and emphasis of study. Let us now see to what extent qualitative and quantitative research do differ.

Comparison : Qualitative vs. Quantitative Research (Lichman, 2006)

Some **examples** of qualitative research strategies may be cited as : Ethnography, Grounded theory, Case Studies, Phenomenal research, Narrative research.

However, a third kind of research is mixed method research. It has features of both quantitative and qualitative research. "Mixed **methods research** is an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, use of qualitative and quantitative approaches, and the mixing of both approaches in a study." (Creswell & Plano Clark 2007). This is relatively new research method with differing mixing up of strategies. One popular example is Traingulation.

Finally, it is instructive to you that which of these three research approaches are good or bad can not be concluded in a straightforward way. Employing a particular research approach in educational studies basically depends upon many linked considerations, nature of research problem, and the type of world view assumed by the researcher. This world view is popularly known as **paradigm** of research methodology which is underpinned by ontology, epistemology and axiology.

Let us check our progress III

1. Explain in your own words – Qualitative and Quantitativeresearch in education.
2. Compare between qualitative and quantitative research.

LET US SUM UP

There are some methods of acquiring knowledge- authority, tradition, personal experiences, deduction, induction, media etc. But they are not so reliable and objective. For gaining or advancing objective and reliable knowledge, you have to rely on scientific inquiry or method.

Scientific inquiry is a systematic process. The general steps of scientific inquiry are - defining the problem, reviewing the literature, framing hypothesis, collecting data, analyzing data and drawing conclusions. There is some relationship between scientific inquiry and research. According to Best and Kahn - research is more systematic process to discover or develop an organized body of knowledge. There are some definite characteristics of research, which are explained in this Block.

Educational research is the application of scientific method to solve the educational problems or to advance knowledge regarding educational process. It has also some specific characteristics.

Educational researches are of various types. The primary focus of basic research is knowledge advancement, but the main focus of applied research isto solve a practical problem. Action research is a variant of applied research. When same sample is observed repeatedly then it is called longitudinal research. But when the sample is observed only one time by taking sample from different successive stages then it is called cross-sectioned research. The other types of researches are – quantitative and qualitative research. Former type uses quantitative data for drawing conclusions, but later uses qualitative data.

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ASSIGNMENTS

1. What sources of knowledge are alternatives to research? Why is research usually better than these alternatives?
2. What do you mean by scientific inquiry? Describe the general steps of scientific inquiry. Explain the relationship between scientific inquiry and research.
3. Explain the characteristics of research. Define educational research. Discuss the special features of educational research.
4. Explain the meaning of basic, applied and action research with suitable examples. Discuss the differences of these researches.
5. What is action research? What are the characteristics of action research? Explain the model of action research.
6. Differentiate longitudinal research from cross-sectional research with suitable examples and mention the merits and demerits of each type of research.
7. Explain the meaning of 'quantitative and qualitative approach' of educational research. Compare between qualitative and quantitative research.
8. Suggest at least one name of research topic of each type of educational research.

ANSWERS TO 'CHECK YOUR PROGRESS'

Check Your Progress I

1. advancing or generating knowledge.

2. inductivily
3. tentative/ suggested solution of a problem
4. definition of problem.

Check Your Progress II

1. educational problem
2. applied
3. group/ sample

Block-2
SCIENTIFIC INVESTIGATION

CONTENT STRUCTURE :

Introduction

Objective

1.0 : **Scientific Investigation & Research Problems**

2.1.1 : Steps of Scientific Investigation

2.1.2 : Problems

2.1.3 : Identifying a Research worthy problems

2.1.4 : Analysis of the problem

2.0 : Review of related studies

2.2.1 : Meaning of review

2.2.2 : Purpose of review

3.0 : Understanding constructs and variables

2.3.1 : Variables

2.3.2 : Types of Variables

2.3.3 : Constructs and variables

4.0 : Research hypothesis

2.4.1 : Meaning of testable hypothesis

2.4.2 : Need for hypothesis

2.4.3 : Importance of Hypothesis

2.4.4 : Criteria of a good re search worthy hypothesis

2.4.5 : Types of hypothesis

2.4.6 : Mechanisms of Testing Hypothesis

2.4.7 : Formulation of hypotheses

5.0 : Research Designs

2.5.1: Concept and meaning of Research Design.

2.5.2: Functions of Research Design.

2.5.3: Types of Research Design.

Let Us Sum Up

References

Assignments

INTRODUCTION

This Block is going to give us some basic ideas as well as understanding of some operational mechanisms for doing research in Education. In the earlier Block we have learnt — what is research and some related concepts which in sum, inform us that research is a systematic, logical and objective endeavour for solving felt difficulty which come to us as a problem. In practical sense a research strives to either explore, explain or establish relationships between/among two/ more variables. All these thinking activities are possible with the smart application of elaborate logical operations, at least of three kinds-inductive, deductive and use of intelligent hunch or guess which used in combination helps man solve encountered problem. This Block will give you a systematic knowledge about all these assertions.

OBJECTIVES

After reading this block the learners will be able to

- mention the general steps of a scientific investigation;
- understand the meaning of a research worthy problem;
- identify and analyse research problems;

- explain the meaning and purpose of review of related studies;
- understand the constructs and variables;
- emphasise the need for and state the types of testable research hypothesis;
- state the mechanisms of testing hypothesis; and
- understand the meaning and importance of research designs.

Unit – 1
SCIENTIFIC INVESTIGATION & RESEARCH PROBLEMS

2.1.1: STEPS OF SCIENTIFIC INVESTIGATION

Recently the print and electronic media were busy in reporting the experimental enactment of a great cosmic event — The Big Bang. The scientists all over the globe expect that this will throw light on the mystery of genesis and will either confirm or reject their logical but tentative conclusion about the cause of genesis of the universe. What do we notice in this great scientific investigation involving thousands of scientists and technologists ?

Firstly, it began with a question — how was the universe created ?

Secondly, it is firmly based on a theory, the general theory of relativity.

Thirdly, it is a well planned research investigation aiming to reach its goal step by step.

Fourthly, the investigators want evidence in favour or against a tentative conclusion that the universe was created by Big Bang.

Fifthly and lastly, the scientists know before hand, what do they mean by Big Bang and all other terminology they are using to conduct the experiment.

In a nut shell, we understand that any scientific investigation is a systematic function involving several steps which are to be decided before the research is actually launched. Subsequent part of this Block will present briefly how to plan an educational research with the firm conviction that educational researches are no less systematic than other scientific investigations.

2.1.2 : PROBLEMS

Any research begins with a problem — still earlier with a question. If answer to the question is well known or obvious, it is not a problem. If the answer is unknown for the time being but the probability of finding out the answer is very high, it may be a problem. There is a reference

to time and space regarding this issue. Answer to a question may be unknown to the researcher, but known to most of the

other people or it may be unknown to a few people in a small part of the country but known to many others in other countries, still it is not a problem. It is a question but not a research question. Before germs were discovered nobody had the answer to a question why milk gets sour or a thousands of people die of Small Pox every year. Therefore, it was a problem for a prolonged period of time all over the world. Therefore, we need to understand what is a problem.

WHAT IS A PROBLEM ?

The question in the subtitle better be asked as what is a research problem. Normally problem is a barrier to knowledge which is a motivator in nature. When one overcomes the barrier, he is able to know and his motivation to know that particular event ceases tentatively until there is a new goal set for further knowledge. A researcher finds a problem for research which means that he has a goal and achieving that goal is not straight forward, it has many barrier or obstacles. The researcher only knows how to overcome the obstacles and reach the goal. He, step by step proceeds to scale the mountains in between his existing knowledge and the destination. When he is successful, he acquires new knowledge or modifies his existing knowledge.

Any question or problem is not a research question or research problem. A research problem has several characteristics.

- A problem originates from the bed of existing knowledge system. This means that a research problem does not arise out of blue. Any inconsistency, controversy, incoherence, gap in knowledge, unanswered questions, or real life or natural phenomena may be a source of research problem.
- A research problem should be of such a nature that it can be expressed in the form of a very small, precise but simple statement.
- A research problem must not include large number of issues, so that it becomes self contradictory.
- A research problem must be logical and be stated using appropriate scientific terminology.
- The problem should be research worthy. Meaning of research worthiness of a problem needs a little elaboration, which will be taken up later.

2.1.3 : IDENTIFICATION OF RESEARCH PROBLEMS

It has already been mentioned that a research problem is selected or identified from the existing knowledge. Therefore, it is expected that the intending researcher have a thorough knowledge of the specialised area of her researcher. The simple principles of identifying a research problem are as follow

?**From known to unknown** — What is unknown can be identified only when one knows what is known. This means that the researcher must know at first, what is already known. By 'what is known' it is not meant the personal knowledge or ignorance. Suppose, you think that 'to find out the causes of dropping out of school children' is a good research problem because the causes are unknown to you. Also, it is a real life problem. But with a little effort you could know that experts have almost no doubt about the causes of dropping out. But if you think that despite so many causes of dropping out have been identified, there may be many more causes because, logically, where none of the known causes exist, still dropping out occurs significantly— you can specify the probable causes and redefine your problem.

Thus while exploring the known events when you stumble upon an unknown, you get your research problem.

- **From easy to difficult** — Easiness and difficulty are the closest kinds of known and unknown. When we know something, it is easy, unknown is difficult. When you did not know to operate a computer, it was difficult. When you learn, it becomes easy. Research problems often originate from simple issues but in the long-run it aims to ease out some think difficult.
- **From concrete to abstract** — Research problems are sometimes identified from the known facts, concrete episodes or the like but gradually, as the series of research generate new knowledge, these are embodied into laws, principles or theories. The experiments of Allan Paivio on imagery (meaning that the mental pictures produced by concrete and abstract words, concepts, etc.) proved that we store in our memory concrete words more than abstract words, which ultimately led to the Dual Coding theory of memory. The research problem which aims to contribute in theorization is ideal.
- **From simple to complex** — Research problems usually are relational statements meaning that directly or indirectly, they intend to explore relationships. Therefore, the

research problem begins with simple statement expecting relationship among a set of factors, events, etc. But ultimately it aims to understand the complex pattern of organization among many such events. Therefore, it is initially concerned with a part of the whole problem but ultimately tries to integrate into a whole. From that sense, a research problem approaches from *part to whole*.

- **From general to specific** — The research problems are identified step by step. Then researcher studies in general the specific area of discipline from where she is likely to identify the problem. Gradually she narrows down her focus from specialised area to a topic, from a topic to a specific problem. Therefore, the research problem approaches from general to specific.

Apart from these principles, research problems are identified following the procedures given below :

1. Extensive studies to maximise the basic knowledge in the area of research.
2. Extensive search for the variety of research reports to understand the nature of research in the concerned area.
3. Critical evaluation of the problems, methods, and findings in these research reports.
4. Pointing out the theoretical inconsistencies, methodological weaknesses, controversies and contradictions, gap in knowledge and logical fallacies, if any.
5. Selection of a tentative problem and writing the problem in a number of alternative ways.
6. Repeated editing and finalisation of the problem.

But these are just a set of general steps. There may be wide variation in these steps. A Problem must be stated and the problem statement involves some variables and it tends to find out the relations between/among two or more variables. Then the analysis of the problem may be summarized with the help of the following sequences :

1. Accumulate the facts that might be related to the nature of the problem.
2. Set observation to see whether the facts are relevant to the problem at hand.
3. Trace relationships between facts that might reveal the key to the difficulty felt.
4. Propose various explanations for the cause of the difficulty.

5. Ascertain through observation and analysis whether they are relevant to the problem.
6. Trace relationship between explanations that might give an insight into the problem solution.
7. Trace relationship between facts and explanations.
8. Formulate the problem statement by connecting empirically verifiable facts and explanations.
9. Question assumptions underlying the analysis of the problem.

Criteria of a Problem Statement

A constructed problem statement should be research-worthy which may be qualified by the following determinations. The Problem (Statement) :—

1. must be relevant to the felt difficulty,
2. must specify relations between or among variables either continuous/discrete or qualitative/ quantitative,
3. must have defined boundary as well as given conditions,
4. after its solution must be significant either theoretically or practically,
5. should be feasible to solve within the limits of available resources — time, money, manpower, etc.
6. must be solvable — (a) must qualify the objects of scientific inquiry, (b) it is solvable if, and only if, it is possible to advance a testable hypothesis (proposition) as a tentative solution of it, or to advance research questions, (c) a solvable problem is one for which a hypothesis that is testable by the truth criterion can be stated.

Then it appears that the problem statement needs some transformation for making testable or for empirical verification under the purview of theories of testability advanced by the scientific inquiry supported by logic.

An example :

Step 1 The researcher is interested in the area of psychomotor development of children. She collects references, prepares bibliography, explores other sources and studies extensively in the area of psychomotor development.

Step 2 She explores the research reports from the books reviews, psychological abstracts, relevant journals and narrows down her focus on the development of writing skills during pre-school years.

Step 3 She explores further and identifies that there is scanty research report on the development of writing skills during pre-school age in the case of bilingual children - and also on handedness.

Step 4 She initially identifies her research problem as, to study the effect of handedness on writing skill of the bilingual pre-school children (handedness means dominance of either right or left hand)

Step 5 Considers the theoretical issues concerning hemispheric lateralization of brain and makes the problem final after carefully weighing its research worthiness.

2.1.4 : ANALYSIS OF THE RESEARCH PROBLEM

Analysis of the problem selected in a manner described into the previous sub Block is necessary for several reasons. This will be gradually explained in the subsequent parts of this Block. Briefly, the purpose of analysis is to examine research worthiness of the problem and its refinement in every respect on the following counts.

- Whether the problem is precise enough.
- Does it reflect any personal bias of the researcher ?
- Is it a repetition of a problem researched earlier ?
- What kind of concepts/variables are involved ?
- Is it feasible ?
- Is the researcher competent enough and/or eligible to undertake the research ?
- Is there any methodological and ethical constraint ?

There may be some other issues of similar nature but initial consideration of these is not enough. The reason may well be evident when we understand the meaning of research worthy problem.

MEANING OF RESEARCH WORTHY PROBLEM

Obviously, the above title 'is the statement about a question is the problem worthy of research ?' But how do we ascertain worthiness of the problem ? Let us examine.

■ **Originality** — Whether the research problem is original as a whole or at least, partly. A problem, which is simply a repetition of one already done else where is not original. It is expected that any research will contribute, whatever little it may be, to the advancement of knowledge. However, repetition is also accepted when the researcher wants to verify the conclusions drawn in the previous work because, she identifies weakness in methodology, inference or in any other matter. Again, two researchers can work on the same problem simultaneously in a competitive spirit with or without mutual cooperation but once the results are published, it becomes the property of one who completes the research first.

■ **Precision** — Whether the concepts or constructs are well defined and specific relations have been assumed among them. 'To study the problems of adolescence' is not a research worthy problem, because both the terms 'problem' and 'adolescence' are unspecific. Similarly, 'to see the reasons of absentism in primary schools' is not a precise statement and therefore, not a research worthy problem.

■ **Feasibility** — If a student of education undertakes a research involving 'the neurological basis of memory, it is not feasible because she is not competent to undertake neurological research, even though we know that memory is being studied neurologically. Feasibility is also judged sometimes from practical perspective. For example, when the problem is otherwise research worthy but data collection is very impracticable or difficult, it will not be feasible. Test anxiety at the time questioning in the classroom is an important area of research. But test anxiety, though well defined can only be measured either retrospectively or as a trait. It cannot be measured at the time of questioning. However, if the researcher can evolve a reliable method of assessment, if may be feasible. Therefore, there is no absolute criteria of feasibility. A research problem which is not feasible, is not research worthy.

■ **Ethical issues** — An unethical problem is not research worthy. A research problem which is likely to hurt the sentiment of concerned people, a moral, or cause physical or mental harm to any individual is unethical. Violation of human rights, encroachment into one's privacy without consent, data collection by deception and impersonation are unethical. Therefore, a research problem should take care of ethical issues to maintain its research worthiness. However, the questions are relative are depends upon how the researcher handles them.

■ **Researchability**— Some of the factors of researchability have been already included in the above points. Further, researchability refers to whether appropriate hypothesis can be framed, tools for data collection are available or can be developed, adequate sampling is possible and so on. Suppose, a research problem involves a sample group from rural girls in commerce stream. Apparently it is researchable but rural girls studying in commerce stream are so thin in number that sampling may be difficult.

■ **Implications** — A research problem is potentially continuous, that is, it generates scope of further studies. Some of the research problems are pertaining to practical usefulness, other are fundamental in nature. Seligman's research on learned helplessness was of great practical use, Skinner's research was a fundamental one. But in either case, their problems of research had significant implications. But it is research problem is without any real implication, either usefulness or academic, it is not research worthy. Many research problems taken up by the research scholars satisfy only some personal needs without having any consequent implication. Such problems are unworthy, their labour is rather wasted.

Let Us Check Our Progress

1. Indicate criteria of a research worthy problem.
2. State two main criteria of a good problem statement.
3. Formulate and write down two problem statements.

Unit - 2:
REVIEW OF RELATED STUDIES

REVIEW OF RELATED STUDIES

It is already mentioned that research involves a lot of searching at the initial stage as well as at the concluding stage. The task of searching before finalisation of the problem is given a general name review of literature or review of related studies or the like. But by the word 'review' we mean something more than mere collection of research reports.

2.2.1 MEANING OF REVIEW

Etymologically, the word review means to look into something again. Dictionary meaning refers to re-examine or critical evaluation. Review in research parlance is a combination of all these meanings. In order to review related studies the researcher needs to follow a series of steps.

- At the first phase it is necessary to collect titles from various sources which appear to be relevant. Books on the specific area, articles in edited books, research papers from journals, abstracts from internet, etc. provide the source of information. A provisional bibliography is prepared for future references.
- An initial screening follows to eliminate those appear not much relevant.
- The researcher goes through the selected books, articles, journals and takes necessary note on

(1) the problem,

(2) theoretical foundation,

(3) sample,

(4) tools used,

(5) mode of data analysis and

(6) conclusions.

- Then these are examined to find what bearing these have upon the study in question, whether there is any methodological weakness, if the interpretations are adequate and if the results of different studies show any contradiction. The researcher may identify if there is any gap of knowledge or if further works are implied in the conclusions.
- The reviewed research studies are classified and a summary of review is prepared with necessary comments on the researcher's part. Thus, the meaning of review of related studies, is best manifested through the steps as in above.

According to Galvan (2005), review of related studies is "a process of finding the sources of relevant material for particular topic or subject."

According to Lawerence&McEvoy (2008), literature means "it is an evidence based review of relevant reference material."

According to David, Paul & Justin (2011), "a first step in the research process is the review of related studies, which helps to shape your research question. A review of related studies requires the author to identify, critically analyze and synthesize a set of useful articles and books on a particular topic. Often associated as a section within a dissertation, a review of related studies is characterized by the emphasis on sources, which are organized, summarized and synthesized with the goal of providing a new interpretation of old material or a trace of the intellectual progression of the field.

Importance of a Good Review of Related studies:

A review of related studies may consist of simple a summary of key sources, but **it usually has an organizational pattern and combines both summary and synthesis, often within specific conceptual categories**. A summary is a recap of the important information of the source, but a synthesis is a re-organization, or a reshuffling, of that information in a way that informs how you are planning to investigate a research problem. The analytical features of a review of related studies might:

- give a new interpretation of old material or combine new with old interpretations,
- trace the intellectual progression of the field, including major debates,

- depending on the situation, evaluate the sources and advise the reader on the most pertinent or relevant, or
- usually in the conclusion of a review of related studies, identify where gaps exist in how a problem has been researched to date.

Objectives of the review of related studies:

The research work of knowledge and science is associated with each other in one or other way. Sometimes it happens that when one research work has been completed it would be a mother of invention for other researcher. So the deep study and assessment of preceding research is an essential matter for any research work. The main objectives of the researcher are mentioned as under for his present research work.

- Researcher can know the special finding from the related literature of his/her research topic.
- The study of review of related studies is drawn the researcher towards the meaningful correction of his/her research work.
- Researcher can develop his/her own beliefs and thoughts through the study of related literature regarding his/her topic.
- Researcher would be aware with the fact that, what are the different steps taken for the problem and what are the steps and efforts to be taken and what was the result.
- It can save the time and energy with giving authentication of the information which was retrieved with such genuine effort.
- Researcher can know the sources through which the prior research work was done. Researcher can find the perfect information that from which method of gathering information which type of information Researcher can get from the resources of finding facts like questionnaire, personal interview, observation etc.
- From the study of prior research work or review of related studies Researcher got such useful thoughts, methods, definitions and ideas for our present research.
- Researcher can find that which method and ideas would be fruitful for the present research
- Researcher can know the errors and special facts of the related literature

- Researcher can find new method of theory of work which was founded earlier by someone which may be useful to our research and can help to do our work in proper way.

Sources of Review of related studies:

Thesis and dissertations: these can be useful sources of information. However there are disadvantages: 1) they can be difficult to obtain since they are not publisher, but are generally only available from the library shelf or through interlibrary loan; 2) the student who carried out the research may not be an experienced researcher and therefore you might have to treat their findings with more caution than published research.

Books:

books tend to be less up-to-date as it takes longer for a book to be publisher than for a journal article. Text books are unlikely to be useful for including in your review of related studies as they are intended for teaching, not for research, but they do offer a good starting point from which to find more detailed sources.

Journal articles:

these are good especially for up-to-date information. Bear in mind, though, that it can take up to two years to publish articles. They are frequently used in review of related studiess because they offer a relatively concise, upto-date format for research, and because all reputable journals are refereed (i.e. editors publish only the most relevant and reliable research).

Conference proceedings:

these can be useful in providing the latest research, or research that has not been publisher. They are also helpful in providing information on which people are currently involved in which research areas, and so can be helpful in tracking down other work by the same researchers.

Internet:

the fastest-growing source of information is on the Internet. It is impossible to characterize the information available but here are some hints about using electronic sources:

1) bear in mind that anyone can post information on the Internet so the quality may not be reliable,

2) the information you find may be intended for a general audience and so not be suitable for inclusion in your review of related studies (information for a general audience is usually less detailed) and

3) more and more refereed electronic journals (e-journals) are appearing on the Internet - if they are refereed it means that there is an editorial board that evaluates the work before publishing it in their e-journal, so the quality should be more reliable (depending on the reputation of the journal).

Government/corporate reports:

Many government departments and corporations commission or carry out research. Their published findings can provide a useful source of information, depending on your field of study.

CD-ROMS:

At the moment, few CR-ROMs provide the kind of specialized, detailed information about academic research that you need for your own research since most are intended for a general audience. However, more and more bibliographies are being put onto CD-ROM for use in academic libraries, so they can be a very valuable tool in searching for the information you need.

Magazines:

Magazines intended for a general audience (e.g. Time) are unlikely to be useful in providing the sort of information you need. Specialized magazines may be more useful (for example business magazines for management students) but usually magazines are not useful for your research except as a starting point by providing news or general information about new discoveries, policies, etc. that you can further research in more specialized sources.

Types of Review of Related Studies:

As Kennedy (2007) notes, it is important to think of knowledge in a given field as consisting of three layers. First, there are the primary studies that researchers conduct and publish. Second are the reviews of those studies that summarize and offer new interpretations built from and often extending beyond the original studies. Third, there are the perceptions, conclusions, opinion, and interpretations that are shared informally that become part of the lore of field. In composing a review of related studies, it is important to note that it is often this third layer of knowledge that is cited as “true” even though it often has only a loose relationship to the primary studies and secondary review of related studies.

Given this, while review of related studiess are designed to provide an overview and synthesis of pertinent sources you have explored, there are several approaches to how they can be done, depending upon the type of analysis underpinning your study. Listed below are definitions of types of review of related studies:

Argumentative Review

This form examines literature selectively in order to support or refute an argument, deeply imbedded assumption, or philosophical problem already established in the literature. The purpose is to develop a body of literature that establishes a contrarian viewpoint. Given the value-laden nature of some social science research [e.g., educational reform; immigration control], argumentative approaches to analyzing the literature can be a legitimate and important form of discourse. However, note that they can also introduce problems of bias when they are used to to make summary claims of the sort found in systematic reviews.

Integrative Review

Considered a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated. The body of literature includes all studies that address related or identical hypotheses. A well-done integrative review meets the same standards as primary research in regard to clarity, rigor, and replication.

Historical Review

Few things rest in isolation from historical precedent. Historical reviews are focused on examining research throughout a period of time, often starting with the first time an issue, concept, theory, phenomena emerged in the literature, then tracing its evolution within the scholarship of a discipline. The purpose is to place research in a historical context to show familiarity with state-of-the-art developments and to identify the likely directions for future research.

Methodological Review

A review does not always focus on **what** someone said [content], but **how** they said it [method of analysis]. This approach provides a framework of understanding at different levels (i.e. those of theory, substantive fields, research approaches and data collection and analysis techniques), enables researchers to draw on a wide variety of knowledge ranging from the conceptual level to practical documents for use in fieldwork in the areas of ontological and epistemological consideration, quantitative and qualitative integration, sampling, interviewing, data

collection and data analysis, and helps highlight many ethical issues which we should be aware of and consider as we go through our study.

Systematic Review

This form consists of an overview of existing evidence pertinent to a clearly formulated research question, which uses pre-specified and standardized methods to identify and critically appraise relevant research, and to collect, report, and analyse data from the studies that are included in the review. Typically it focuses on a very specific empirical question, often posed in a cause-and-effect form, such as "To what extent does A contribute to B?"

Theoretical Review

The purpose of this form is to concretely examine the corpus of theory that has accumulated in regard to an issue, concept, theory, phenomena. The theoretical review of related studies help establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop new hypotheses to be tested. Often this form is used to help establish a lack of appropriate theories or reveal that current theories are inadequate for explaining new or emerging research problems. The unit of analysis can focus on a theoretical concept or a whole theory or framework.

2.2.2 : PURPOSE OF REVIEW

Obviously, this refers to the question, why do we at all take so much pain for review of literature. Is it only an academic exercise, or it has any practical utility ?

Academic purposes of the review are by this time quite obvious to the readers but the other side of usefulness is by no means negligible. The following issues may be highlighted.

- After thorough review of literature the researcher gets convinced about the need of his / her research.
- She / he can understand whether the selected problem is researchable.
- She / he can get necessary help about the planning of her research — his / her design, sample, tools, analysis etc.
- She / he can gather logical or empirical support for his / her points of view.

- The bibliography prepared initially may well be incorporated into his / her own bibliography.
- At the end of research, she / he can compare her own conclusions with those of others.
- The researcher can ascertain the merit of his / her own research in comparison to similar other studies and the originality of her work, if any.

Therefore, review of research reports is a function which begins before a research project commences but continues up to the end which makes it an integral part of any research study.

Writing Review of related studies:

When writing your review, keep in mind these issues.

Use Evidence:

A review of related studies in this sense is just like any other academic research paper. Your interpretation of the available sources must be backed up with evidence to show that what you are saying is valid.

Be Selective:

Select only the most important points in each source to highlight in the review. The type of information you choose to mention should relate directly to the research problem, whether it is thematic, methodological, or chronological.

Use Quotes Sparingly:

Some short quotes are okay if you want to emphasize a point, or if what the author said just cannot be rewritten in your own words. Sometimes you may need to quote certain terms that were coined by the author, not common knowledge, or taken directly from the study. Do not use extensive quotes as a substitute your own summary and interpretation of the literature.

Summarize and Synthesize:

Remember to summarize and synthesize your sources within each paragraph as well as throughout the review. Recapitulate important features of a research study, but then synthesize it by rephrasing the study's significance and relating it to their own work.

Keep Your Own Voice:

While the review of related studies presents others' ideas, your voice (the writer's) should remain front and center. For example, weave references to other sources into what you are

writing but maintain your own voice by starting and ending the paragraph with your own ideas and wording.

Use Caution When Paraphrasing:

When paraphrasing a source that is not your own, be sure to represent the author's information or opinions accurately and in your own words. Even when paraphrasing an author's work, you still must provide a citation to that work.

Advantages of Review of Literature:

- It helps the researcher look for possible theories, concepts or principles to support his investigation.
- It is essential in formulating a sound research title, hypotheses, assumptions, etc.
- It enlightens the researcher as to the direction of the study.
- It proves that the study is researchable and possesses novelty.
- It helps to identify the statistical instrument to be used in the study.
- It serves as a guide to writing the findings, conclusions and recommendations .

Let Us Check Our Progress

1. Give two reasons for usefulness of review of related literature.

2. What precautions would you adopt while reviewing relatedstudies ?

Unit – 3:

UNDERSTANDING- CONSTRUCTS AND VARIABLES

2.3.1 : VARIABLES

A variable, as the name implies, is something that varies. This is the simplest way of defining a variable.In other words, variables are anything can effect or change the results of a study. Every study has variables as these are needed in order to understand differences.

However, a behavioural scientist attempts to define a variable more precisely and specifically.

- Kerlinger (1986) defined variable 'a property that taken as different values'.
- According to D'Amato (1970) variables may be defined as those attributes of objects, events, things and beings, which can be measured.

According to Postman and Egan (1949) a variable is a characteristic or attribute that can take on a number of values, for example, number of items that an individual solves on a particular test, the speed with which we respond to a signal, IQ, sex, level of anxiety, and different degree of illumination are the examples of variables that are commonly employed in psychological research.

2.3.2 : TYPES OF VERIABLES:

The descriptions of different types of variables are given below:

Independent and Dependent Variables

An *independent variable* or stimulus variable is that factor manipulated or selected by the experimenter in his attempt to ascertain its relationship to an observed phenomenon.Dependent upon the mode of manipulation, some experts have tried to divide the independent variable into 'Type E' independent variable and 'Type S'independent variable (D'Amato, 1970). Type E independent variable is one of which is directly or experimentally manipulated by the experimental

and type S independent variable is one which is manipulated through the process of selection only.

A dependent variable is the factor that appears, disappears, or varies as the experimenter introduces, removes or varies the independent variable. (Townsend,1953). The dependent variable is a measure of the behaviour of the subject. The dependent variable is the response that the person or animal makes. This response is generally measured using at least one of several different dimensions (Alberto & Troutman 2006).

The relationship between independent and dependent variables is that of dependence. One variable depends upon the other. Suppose you find a relationship between meaningfulness of the learning material and speed of learning. Speed of learning then depends upon meaningfulness; the greater the meaningfulness, the faster the learning. The speedof learning is, therefore, called dependent variable; meaningfulness is independent variable.

Extraneous and Confounded Variables

All other variables besides the independent variable and dependent variable are known as extraneous variables. *Extraneous variables* may directly affect the dependent variable or may combine with the independent variable to produce an affect. Therefore, extraneous variables must be controlled so that the experimenter can determine whether the dependent variable changes in relation to variation in the independent variable. Several others factors operating in a real life situation may affect changes in the dependent variable. These factors, not measured in the study, may increase or decrease the magnitude or strength of the relationship between independent and dependent variables.

Extraneous variables are relevant in nature, and in experimental studies, they belong to three major types i.e., organismic variables, situational variables and sequential variables.

The subject related variables include age, sex, intelligence, personality etc. are *organismic variables.* The *situational variables*include environmental variables operating in the experimental setting (e.g. noise, temperature, humidity) and variables related to the experimental task. The *sequence related variables* deal with sequence effects. They arise when participants in experiments are required to be tested in several conditions.

Confounding variables is one that varies with the independent variable. While doing a study if we are not careful then two variables may get combined so that the effect of one cannot be

separated from the effect of other. This is known as confounding. For instance, if you conducted a study of the effect of television viewing on perception of violence and the experimental group contained only adolescents, whereas the control group only adults, the age of participants would be confounded with the independent variable under study. Confounding makes the conclusions of the study doubtful.

Active and Attribute Variables:

Any variable that is manipulated is called *active variables*. Examples of active variables are reward, punishment, methods of teaching, creating anxiety through instructions and so on.

Attribute variable is that variable which is not manipulated but measured by the experimenter. Variables that are human characteristics like intelligence, Aptitudes, sex, socio economic status, education, field dependence and need for achievement are the example of attributes variables. The word 'attribute' is more accurate enough when used within animated objects or references. Organisations, institutions, groups, population and geographical areas have attributes.

Quantitative and Categorical Variables

Quantitative variables is one that varies in amount whereas categorical variables varies in kind. Speed of response, intensity of sound, level of Illumination, intelligence etc. are the example of quantitative variables and gender, race, religion are the example of categorical variables.

Precise and accurate measurement are possible with the quantitative variables because they can be easily ordered in terms of increasing and decreasing magnitude categorical variables can be of three types:, dichotomous and polytomous.

1. **Constant** : When a variable can have only one value or category, for example taxi, tree and water, it is known as a constant variables.
2. **Dichotomous** : When a variable can have only two categories as in yes/no, good/bad and rich/poor, it is known as dichotomous variables.
3. **Polytomous**: When variables can be divided into more than two categories, for example: religion (Christian, Muslim, Hindu); political parties (Labor, Liberal, Democrat); and attitudes (strongly favorable, favorable, uncertain, unfavorable, strongly unfavorable), it s called a polytomous variable.

Continuous Variables and Discrete Variables

Quantitative variables are further divided into two categories, namely,

(1) Continuous variables and

(2) Discrete variables.

A distinction between continuous and discrete variables is especially useful in planning of research and analysis of data. A *continuous variable* is one which is capable of being measured in any arbitrary degree of fineness or exactness. Age, height, intelligence, reaction time, etc., are some of the examples of a continuous variable. The age of the person can be measured in years, month and days. Thus, all such variables which can be measured in the smallest degree of fineness are called continuous variable.

The *discrete variables* are those variables which are not capable of being measured in any arbitrary degree of fineness or exactness because the variables contain a clear gap. For example, the number of members in a family, no. of females in particular group, no of books in library and so on constitutes the examples of a discrete variable.

2.3.3 : CONSTRUCTS AND VARIABLES

When you are asked to solve a problem and you solve the problem, people say that you are intelligent. Similarly, a large variety of functions are believed to be the manifestation of intelligence. We all agree that mankind has intelligence, we do not know where, in which form it exists. When a set of behaviour is assigned with a common attribute or character, it is called a construct. As distinct from construct is entity which has a real existence. Thus, intelligence, personality etc. are constructs but a neurotransmitter is an entity. In psychology and education we deal more with constructs than an entity.

This implies that defining a construct is not universal or in other words, a construct is defined variously because the functions which are assigned with the construct may differ from person to person. Any student of psychology and education knows that there are many definitions and theories of intelligence and personality. To a researcher, this is a serious problem.

Any research problem involves some concepts or constructs which are to be manipulated like an entity. Therefore, one needs to understand the nature of the construct being operated and whether the construct really shows variation from person to person or within the same person from time to time. We believe that intelligence varies from person to person because the tasks which are assigned with intellectual ability vary in difficulty, complexity etc. and all people cannot perform all the tasks. Therefore, in research parlauce we accept intelligence as a variable. A major objective of scientific inquiry is find the nature of relation between two or more variables. Without understanding the constructs and variables, no research problem can be formulated and executed.

One common way of understanding the variables is to define it operationally. An operational definition is different from a conceptual definition is a sense that it specifies those characteristics of the object to be defined which one can manipulate operationally. An example of operational definition of intelligence is that suggested by Stoddard (1943) in his book *The Appraisal of* Intelligence. In his definition he specifies seven characteristics of intellectual operations, namely,

(i) difficulty,

(ii) complexity,

(iii) abstractness,

(iv) economy,

(v) adaptiveness to goal,

(vi) social value and

(vii) emergence of originals.

Thus, if we accept his operational definition, we know sure that intelligent people can undertake more difficult, complex and abstract task than less intelligent people and they can perform these tasks in minimum time with less effort (economy). A construct is often represented by its conceptual definition but when we need to manipulate it as a variable, a conceptual definition is essential.

The researcher, while formulating the research problem shows his / her first and foremost interest in defining and understanding the constructs, their nature in terms of operational definition as well as theories in the appropriate cases. If the nature of intelligence, for example, is explained according to two factor theory, the researcher will prefer to use an intelligence test that measures

G. But if the theoretical basis is that of Vernon, the researcher will prefer to use a test that measures both verbal and numerical abilities.

It is important to analyses and understand variables not only from the perspective of measurement but also for understanding the probable nature of relationship with other variable, tentatively and theoretically. This is the primary step towards classification of variables into dependent and independent types and then for framing the hypotheses.

Let Us Check Our Progress

1. Explain relationship of construct and variable.
2. What do you mean by operational definition of a construct ?
3. State need for operationalision of a construct.

Unit – 4
RESEARCH HYPOTHESIS

RESEARCH HYPOTHESIS

A research without hypothesis is blind search of a needle in the hay stack. Hypothesis is a brief statement that exactly mentions the relationship between two or more variables that the researcher expects and plans to examine. In our real life also we frame hypothesis in terms of the cause of some episode. For example, when we say ‘he did not come because he is most likely ill’. If, on enquiry afterwards, it is found that he was really ill, the above assumption is accepted and the cause of absence of the person concerned is established.

But a research hypothesis is not simply a guess-work like that in the above statement. It has several characteristics.

- The variables in a research hypothesis may be discrete, continuous or categorised but in any case it is a well-defined concept.
    - The assumed relationship in the hypothesis is based on logical analysisof the constructs and variables.
- Hypothesis specifies the nature of relationship between the variables which may be both positive and negative.
- Hypothesis must be testable. In the methodology of research, hypothesis occupies a key role and therefore, once the problem of research is formulated, the researcher needs to go through the details of hypothesis framing usually presented in a separate chapter.

2.4.1 : MEANING OF TESTABLE HYPOTHESIS

Meaning of testable hypothesis is whether the hypothesis can be examinedby appropriate method either to accept it as true or to reject it as false. At the time of formulating a research problem, the question of testability of hypotheses must be kept in view.

- When the concepts involved into the hypothesis is not defined operationally, it may not be testable. As for example, a researcher likes to frame the following hypothesis : Adolescent girls face more problem than boys. In this hypothesis she actually wants to examine the relation between gender (boys & girls) and problem (during adolescence). Gender is well defined as a variable but 'problem' is so vague a word that it cannot be defined as a single variable and therefore, the hypothesis cannot be tested.
- Even if the variables are defined, a hypothesis may not be testable. If the researcher has no clear idea about the nature of relationship that may exist between two variables, the concerned hypothesis cannot be tested.

Example : Attitude towards co-education is partly related to the level of education one possesses.

In this hypothesis, attitude towards co-education is well defined and measurable. Level of education can be ascertained and it is a variable because it increases systematically. But who are the persons involved and what does it mean by partly ? Therefore, unless the hypothesis is very specific in assuming a relationship, it is not testable.

- To many variables in one hypothesis showing varieties of relationship makes it untestable.

Example : MLL of the neoliterates depends on age education and experience of their parents and teachers.

Parental attributes are uncorrelated with teachers' attributes. Again age, education and experience may have some interrelationship within themselves, obviously, different for parents and teachers. In this situation it is not possible to test the hypothesis.

In sum, hypothesis, when written in an unambiguous statement form assuming a simple relationship which can be verified on the basis of a set of data using appropriate methods and the inference drawn either in favour or against the hypothesis when generalizable, it is called a testable hypothesis.

2.4.2 : NEED FOR HYPOTHESIS

Why does a researcher need an hypothesis ? The word has two parts — 'Hypo' which means less than and 'thesis' which means 'what has been proved to true'. Thus hypothesis is the

prior stage of the final decision about the relationship or structure of the variables under study. A thesis can be proved by empirical evidence or by logical arguments or by both. In fact, for scientific research empirical evidence, that is, the facts, data, information etc. forms the primary basis of drawing a conclusion. But empirical evidence shave their own limitations. For example, you can prove by actual measurement of one hundred triangles that in each case sum of the three angles is equal to two right angles. But there are still hundreds of triangles left out of your measurement. Therefore, empirical evidences may help you to draw a tentative conclusions inductively which is proved exhaustively when you advance a deductive proof making a the inductive conclusion a theorem.

Hypothesis in a research provides us with the probable thesis or the deductive theory that may be proved to be true or false. Unless we have any such probable truth to guide us, in fact we don't have any goal and research becomes a blind searching. A hypothesis speaks us about what to measure or which type of data are needed, who are the persons involved or wherefrom we may get the relevant data,what kind of data we may get and by which method, and what should we do withthe obtained data. Therefore, it is obvious that a good hypothesis steers the whole research in the right direction and to the ultimate goal, the truth.

Many researchers struggle with framing hypothesis because, they have clear notion of the goal they want to attain. On the other hand the merit of a research problem can be best judged by how far it is translated into testable hypothesis. Another important point about research hypothesis is that it is the mirror of the research design the researcher has worked out. Therefore, hypothesis is the lifetime of any research endeavour. Thus, a hypothesis,

- provides the basis of empirical evidences ;
- reflects the research design ;
- helps to draw inductive conclusions ;
- provides the basis of deductive arguments ; and
- ultimately culminates into a theory, law, or the truth.

2.4.3 : IMPORTANCE OF HYPOTHESIS

Hypothesis is recognized as the indispensable research tools as it helps build a bridge between the problem and the site map of empirical evidence that facilitates solution of the

problem sometimes it is said tobe a compass in the hands of an investigator and provides him/ her directions to the solution of the problem very specifically. It is the theory in evolution. Its importance may be enumerated as given below :

1. **Pinpointing of Problems by Hypothesis :** Chisel outing a hypothesis requires a through intellectual scanning of facts and explanations relevant to the felt difficulty. By this analysis the problem at hand becomes more and more visible and comprehensible to a researcher. The process of formulating hypothesis, deducing its consequences and defining the terms operationally clarifies the issues involved as well as enmeshed in the enquiry and helps crystallize the problem for investigation.
2. **Using Hypothesis to Determine the Relevancy of Facts :** A hypothesis directs a researcher's all efforts in the most effective and economic manner without making unwanted and costly trial and errors, or running into blind alley. It guides an investigator what facts to be collected or how many facts are to be explored to test its deduced consequences.
3. **Research Design indicated by Hypothesis :** A well constructed hypothesis suggests what research design or mode of attack will meet its specific demands, what methods to be applied, tools to be needed, sample to be drawn and in which technique.
4. **Explanations Presented by Hypothesis :** A research study goes beyond the empirical data amassed by the investigator and intends to unveil the underlying patterns or structures that account for the occurrences of phenomena under the purview of the study at hand. Hypothesis by subjecting to the theory of testability goes further the hierarchy of knowledge structure for becoming a theory with ample power for explaining many more unknown phenomena.
5. **Further Research Stimulated by Hypothesis :** A hypothesis not only explains a given phenomena but also may serve as an intellectual lever by which the investigator may move further for explaining more inclusive facts taking stock of the status of relationship between variables.

2.4.4 : CRITERIA OF A GOOD RSEARCH WORTHY HYPOTHESIS

Our experience leads us to ponder over some criteria, though not so rigid, that should be taken into account while judging worth of a hypothesis. The criteria may be listed down as :

The hypothesis :

1. ...must be testable. The hypothesis that is presently testable is superior to the hypothesis that is potentially testable.
2. ...should be in general harmony with other hypothesis in the field of the concerned research.
3. ...should be parsimonious. If two hypotheses are advanced to answer a given problem; the more parsimonious one should be preferred.
4. ...should answer (i.e., be relevant to) the problem.
5. ...should have logical simplicity.
6. ...should be expressed in a quantified form, or susceptible to convenient quantification.
7. ...should have a large number of consequences, should be general in scope... The hypothesis that yields a large number of deductions (consequences) explains more facts or will make more predictions about events that are yet unstudied or un-established.

2.4.5 : TYPES OF HYPOTHESIS

There are many ways of classifying the hypothesis which will be duly considered in the Block separately written exclusively for hypothesis. Here, in the perspective of describing the general steps of scientific research, two types of hypothesis will be mentioned only because, these are essential initially to conceive and plan research.

In the case of experimental research or better to say, in experimental design of research and also in the factorial and group (both randomized and otherwise), the hypotheses are written in the form of a negative statement. This is called a 'Null Hypothesis'. A typical null hypothesis include such phrases as, 'there is no relationship', 'does not differ', does not vary', etc. In other cases when the relationship between two variables is more directed, it is written in the opposite statement like, 'A is not more than B' when the researcher actually thinks A > B. Null hypothesis is mandatory for the statistical techniques based on probability theory.

On the other hand, when the variables are continuous and not dichotomized by any means, distribution of each set of measures is, at-least, theoretically, normal, the researcher may be more in favour of a co-relational design, because, variation or difference is now replaced by co-

variation. In the case of co-relational design, thehypothesis is written as *alternative* form. An alternative hypothesis is writtenin the positive manner assuming that the relationship exists between two ormore variables.'X is positively co-related with Y' is the typical languagewhere x and y are the names of two variables.

It is to be noted that in the situation where there are two or more treatment groups homogeneous within group but heterogeneous between groups, null hypothesis is most suitable. In this case of a single group undergoing two or more treatments, a co-relational design and hence alternative hypothesis is most suitable.

2.4.6 : MECHANISMS OF TESTING HYPOTHESIS

Mechanisms of testing hypothesis are answers to the question, how to test the hypothesis. Testing hypothesis in scientific research needs selection of suitable tools for data collection or measuring devices that will give necessary quantitative or qualitative data. Then the researcher applies the tools upon the sample drawn for data collection. Sample is a small representative segment of the larger population group for whom the hypothesis if accepted will be generalized, i.e., the hypothesised relationship between the variables will be accepted as true for the population. Collection of data is followed by testing of hypothesis.

The **testing of a hypothesis** is a complicated but systematic procedure. It is generally a three-part procedure and an investigator must (1) deduce its consequences; (2) select or develop tests and situations that will determinethrough observation or experimentation whether the deduced consequences actually occur; and (3) carry out these tests thereby collecting and recording facts (data) that will either support or not support the hypothesis.

1. Deducing the Consequences

Some hypotheses may be directly tested but many hypotheses are tested indirectly and needs deduction of their consequences. If an investigator guesses that Method A is superior to Method B in teaching Geometry. She/ he may advance deductions like these : Keeping other conditions constant (/similar/equivalent) if students who are taught Geometry under Method A will learn more in comparison to the students who hve been taught under methodB.

Then, students taught under method A have greater mean score of geometry than that of the students taught under Method B. The investigator can directly test whether the first group's mean

score is greater than that of the second group. Moreover, it implies that the researcher must create two dissimilar teaching-learning situations for testing the hypothesis.

2. Selecting the Test Procedures

This is a very crucial step. In continuation to the above example, a researcher has many tasks to perform – selecting the subjects, controlling other variables, selecting the content to be transacted, defining the attributes concerning each of the two methods, developing tests, carrying out the experimentation, applying the test, collecting and organizing data, finding out group means etc. For accomplishing all, the investigator will make through search and study of related literature and studies for his/her research.

3. Confirming the Hypothesis

On the basis of factual evidence obtained (as were expected consequences after deduction) from the test, the investigator draws conclusion — an inductive inference — about whether the hypothesis is confirmed or not confirmed. It is an important point to note that the success of an investigation lies not only on the problem hypothesis, deduced consequences or observable predictions, tests, evidence and conclusion reached but also on the cogency of the logic with which these elements are connected.

Therefore, the following criteria should meet :

(i) the hypothesis must give a logical explanation with regard to the specific problem at hand,

(ii) the deduced consequences must be logically implied by the hypothesis that is being tested,

(iii) the test situations must adequately represent the essential factors expressed in the consequences,

(iv) the conclusions drawn must be based on the factual evidence collected in the empirical tests, and

(v) the whole episode must be guarded against all kinds of errors that might jeopardize the entire intellectual maneuver.

In order to deepen our understanding of this story we should be acquainted with the **Testing the Null hypothesis.** This is rather a more technical story. We may recall that we may test and conduct testability of a proposition (hypothesis) with the application of the probability theory of

testability only. And for this purpose, we need to transform the alternative hypothesis into a null hypothesis which is only testable in real sense. Hence we are now presenting a brief note on testing the null hypothesis.

This procedure is more objective and may be presented as :—

1. Construct the alternative hypothesis (Hl),
2. State the null hypothesis (Ho)
3. Choose a statistical test (with associated statistical model) for tesingHo
4. Specify a significance level (?) and the sample size (N),
5. Find (or assume) the sampling distribution of the statistical test under Ho
6. On the basis of (2), (3) and (4) above define the region of rejection.
7. Compare the value of the statistical test, using the data obtained from the sample(N). If the value is in the region of rejection, the decision is to reject Ho; if that value is outside the region of rejection, the decision is that Hocannot be rejected at that chosen level of significance.

Let us remember that null hypothesis (some call it statistical hypothesis) is a hypothesis of no-difference; it is usually formulated for the express purpose of being rejected; if it is rejected, the alternative hypothesis may be accepted; and when we want to make a decision about difference, we test Hoagainst Hl (alternative hypothesis).

Mechanisms of testing hypothesis depend upon the research design the researcher has preferred to. This is one of the most delicate parts of research procedure which needs a thorough separate and elaborate treatment. Briefly, at this stage the following account will help you to have preliminary idea about the mechanisms.

Variety of inferential statistical methods for univariate, bivariate and multi-variatedesigns are readily available for testing hypothesis. Again, the sampling parameter is another determining factor. We have a separate set of methods for distribution free small sample groups, commonly known as nonparametric methods. When sample is large enough to assume a normal distribution of the measured attributes over the population, the techniques of hypothesis testing are based on the properties of a normal distribution. Single sample research designs also have different methods of hypothesis testing. But in every case the sole basis of inference is the probability of

occurrence of certain phenomena in the perspective of sampling distribution or the sample in question. By way of example, some of the methods may be found in the following table.

Table showing examples of methods of hypothesis testing.

No. of variables	No. of Groups	Sample	Design	Method
1. (Univariate One	One	small	Single group	Binomial test
2. One	Two	large	Experimental	t-test
3. One	Many	large/small	Factorial	one-way ANOVA
4. Two (Bivariate)	One	large	Co-relational	Significance of the coefficient of co-relation
5. Two	One	small	Co-relational	spearman Rank-co-relation
6. Many (Multivariate)	Two or more	Large	Factorical	ANOVA, MANOVA etc
7. Many	One	Large	Co-relational	Regression, Multiple Co-relation etc.
8. One	Two (Non equal)	Small	Experimental	Median test
9. One	Single	Single	Replicative	Probability theory
10. Three or More (One of two extraneous)	One	Large	Co-relational	Partial Co-relation

2.4.7 : FORMULATION OF HYPOTHESES

Hypothesis is formulated and expressed in a statement or proposition that can be empirically tested within the purview of the research design. Therefore, formulation of a hypothesis must be relevant, that is it is potentially powerful to generate solution to the problem. Putting in other

words, hypothesis is required to meet criteria for judging a testable hypothesis. Moreover, the task of formulation of a hypothesis must bear the stamp of versatility of intellect of the researcher. The statement of hypothesis must explicitly state expected relationships between/ among variables.

Statement of hypotheses of variours kinds of being exemplified now.

Thre are various forms of hypotheses.

Directional and Non-directional Forms

Directional Hypothesis states a definite direction of proposed relationship to be tested : less than, greater than, positive correlation, negative correlation, etc.

Examples

1. There is significant *positive correlation* between the measures of students' involvement in studies and scholastic achievement of eleventh grade girls. [note that, here only positive correlation is being attempted, not simply correlation which may be either positive and negative in direction]
2. Instructional effectiveness of the strategy A is significantly superior to that of the strategy V in teaching geography at seventh grade. [note that here it is clearly stated that the instructional effectiveness of A is superior to that of V] *Non-directional Hypothesis* states no definite direction of proposed relationship to be tested : usually uses– difference, correlation, etc.

Examples

3. There is significant *correlation* between the measures of students' involvement in studies and scholastic achievement of eleventh grade girls. [Here only correlation is being attempted, it might be either positive or negative in direction].
4. The effect of two strategies, namely A and V, for presenting Advance Organizer in teaching geography to the seventh grade students will differ significantly [Here only difference is being tested].

Declarative and Null Forms

Examples

Declarative form –

A positive relation/effect/association are expressed in the statement of the hypothesis. All the above four hypotheses are clased as declarative form.

Null-form/null hypotheses

The statements of null hypothesis express no relationship, difference or effects between or among variables which have been selected by the researcher and intellectually guessed that their relationships exist to hold.

5. There is no significant *positive correlation* between the measures of students' involvement in studies and scholastic achievement of eleventh grade girls. [here only positive correlation is being attempted, not simply correlation which may be either positive and negative in direction, the statement is directive].
6. Instructional effectiveness of strategy A is not significantly superior to that of strategy V in teaching geography at seventh grade. [the statement is directive and null]
7. There is no significant difference in the measures of effectiveness of strategies A and V in teaching geography at seventh grade. [the statement is non-directive and also null] Or Putting in a mathematical form – In teaching geography at seventh grade, difference between measures of effectiveness of strategies A and V is zero].

The story does not end here. Null hypotheses are not merely hypotheses of no differences or no relationships, they are called statistical hypotheses; they are formulated to test the possibilities of relationships and to reject for accepting the declarative (substantive/alternatives) hypotheses. For example, — There is no mean difference between mean performance of two groups – which implies that if there any observed difference between mean performance of the said two groups, it is due only to chance or it is an accident only.

Let Us Check Our Progress

1. What do you mean by 'hypothesis?
2. "Hypothesis gives direction to research work". — Explain with suitableexample.
3. Formulate one declarative null hypothesis.
4. Formulate one non-directional alternative hypothesis.

Unit - 5:
RESEARCH DESIGN

2.5.1 : CONCEPT AND MEANING OF RESEARCH DESIGNS

So far, in the previous two sections, you have repeatedly come across the term Design of Research. It will not be unwise to give a preliminary idea about research design. Selecting appropriate research design is vital to the success of a research. The steps of scientific research include specification of its design at a much earlier stage. In fact, once the problem is formulated, variables have been selected for the study, the researcher first thinks of the sampling pattern and then chalks out the research design because by that time perhaps you are convinced that framing and testing the hypothesis depends upon the research design.

Research Design is most simply means a blue-print of a research to be carried out for solution of a research worthy problem at hand. It is a plan, strategy as well as the structure of the research. The plan is the overal scheme or programme of the research. It includes an outline of what the researcher will do from, selecting and identifying the problem, writing the hypotheses and their operational implications to the final analysis, drawing conclusions and reporting the total activities performed. The structure of the research is more specific. It is the outlines, the scheme, the paradigm or model of the operation of variables to be studied. The model building indicates the structure. Strategy implies the methods and procedures to be used to gather record and analyze the data. In other words, strategy refers to how the research objectives will be attained and how the problem encountered in the research will be tackled. In fine we may say that a research design is the plan, structure and strategy which implies the methods and procedures to be used to gather record and analyze the data. In other words, strategy refers to how the research objectives will be attained and how the problem encountered in the research will be tackled. In fine we may say that a research design is the plan, structure and strategy of investigation in order to obtain answers to research questions in most economic, reliable and valid manner.

Research design sets up the framework for ‘adequate’ tests of the relations among variables. Research design tells us what observation to be made, how to make and how to analyze the

variable relationships conceived by the researcher. It gives us directions to all of the research activities to be performed by the investigator.

2.5.2 : FUNCTION OF RESEARCH DESIGN

In general a research design has three important **functions** which are :–

1. It provides blue-print for the research. This has been mentioned earlier.
2. It limits (dictates) the boundary/scope of the research activity. For this research design spells out the variables involved, their measurement techniques, sample and sampling design, assumptions made, delimitations specified, etc.
3. It enables investigation to anticipate potential problems. It estimates before hand the problems may come and how to secure intermediate solutions/alternatives in relation to men, materials, site, literature, analysis design etc.

Research design in the context of experimental research suggests two main functions of a research design which are :

(a) to provide answer to research questions, and

(b) to control variance in this case it is said “the main technical functionsof research design is to control variance “More clearly the statistical principle behind this control mechanism is : Maximize systematic variance, control extraneous systematic variance, and minimize error variance.

The **General Phases of Research Design** may be described by the following process — states :

1. Specifying the problem to be investigated.
2. Framing research design.
3. Planning a sample
4. Planning instrumentation
5. Collecting and recording data
6. Analyzing the data and Preparing the report.

Sometimes research design consist of a bunch of designs – review of related studiesdesign, sampling design, instrumentation design, experimental design (in case of experimental study) analysis design, etc. all constituting the research design.

Advantages of research design may be stated as :–

1. Research design is a road-map for the investigator.
2. It is the compass of the research tasks for guiding activities.
3. It protects wastage of resources.
4. It helps give answers to research question in most reliable and valid way.
5. It controls variances-errors and extraneous.

2.5.3 : TYPES OF RESEARCH DESIGN

Designs for different types of Research vary. But the basic design principles are same in all, types of research. But there are variations in designing research of different types. The variations come from the variations of approaches followed in different types of research. For example, in descriptive survey, historical studies, experimentations, action research, etc. we find a lot of variation in the nature of data, instrumentation, control devises, sampling techniques, etc. Some hints along this direction are given now.

It is said that a research without design is a boat sailing without oars. Meanings of the term design include, shape, pattern, working programme etc. In research, it is considered to be the blueprint of procedure that the researcher would follow step by step to execute her research programme. Depending upon the objectives of research, types and number of variables, there may be a variety of research designs a brief description of which is given below. Details of these designs is required to be treated separately in a full Block.

Descriptive Research Design (Survey Research) —

This design implies in its name that the primary objective of research is to describe the state of the affair by collecting large quantity of information (data). Usually this design is focussed on one or few research variables but extended over larger geographical area. Survey research may be of two types, namely, Normative Survey and Time Series Survey. When a researcher aims to study the effect of nondetention policy on retention in the primary schools, she needs to survey

the number of students who completed the primary education and the number of dropouts over a considerable period of time, a part of which during non-detention period and a part earlier than that. This is an example of time series survey. On the other hand if one wants to take stock of the functional literates at present in West Bengal, the researcher needs a norm to differentiate the functional literates and other. This is normative survey but there is no hard and fast line of demarcation between the two.

Experimental Design — The main features of experimental designs are control of variables and randomization of sample. In true experimental design all the variables are controlled except an experimental variable which is changed systematically to observe its effect on a dependent variable. In education and psychology, it assumes various types.

1. *Matching group design* — When two or more groups of people are soselected that each group is equivalent or matched in respect to allother variables except the experimental variable. Here, each groupgets different treatments.
2. *Control group experimental group design* — Same as above, but one group (control group) is not given any special treatment while the experimental group is subjected to the desired special treatment.
3. *Randomized group design* — In this case large number of element in a sample are randomly assigned to separate groups to get automatically matching groups.

Co-relation Research Design — Purpose of this type of research design is to explore the underlying construct of a single variable (e.g., factor analysis of intelligence), to understand the complex interrelationship among a set of variables (e.g., using interco-relation matrix and then multiple co-relation) and to predict the probable score of a dependent variable in terms of the scores in independent variables (e.g., regression coefficients and equation).

Single Subject Research Design — When there is only one person in the sample available due to some reason or other for conducting research, the related design is single subject design (N=1). It is of three types, namely,

(1) Replicative treatment design,

(2) Baseline design and

(3) Multiple baseline design.

Quasi-experimental Research Design — In social and behavioural sciences, it is difficult to control all possible variables for a perfect experimental research. Particularly in the case of

human behaviour the variables are interwoven in such a complex pattern that one can hardly isolate one from the other. Under such circumstances quasi-experimental designs are most suitable. There are different types of quasi-experimental designs.

(1) *Pre-test Post-test design* — In this case the sample group is one and the same. Before a desired treatment, (say, a new teaching method), the researcher applies a test to examine the conditions before treatment and a post-test after treatment to determine the improvement, if there is any.

(2) *Ex-post-facto Design* — This is a general approach of research in which the question of controlling the variables is shelved till the data are collected and given the due consideration at the time of data analysis.

(3) *Factorial design* — When one or more of the variables are either naturally (e.g. male and female) or artificially (e.g., high achiever and low achiever) categorised into two or more segments, and atleast one of the variables is continuous, the most useful design is factorial research design. Advantage of this research design is that the relationship between the continuous (dependent) variable with all the categorized (independent) variables can be explained in all possible combinations.

In summary, the steps of scientific inquiry are as follows :

- Research question.
- Research problem.
- Constructs and variables.
- Hypothesis.
- Population and Sample.
- Collection of data.
- Hypothesis testing.
- Decision-making.

In research design is the blue print of all the above.

Let Us Check Our Progress

1. Write down two needs for a research design.
2. Explain the control mechanism of a research design ?

LET US SUM UP

In this Block we have learnt several basic ideas, concepts and processes related to research in education. By way of summerization these are about varius aspects of the 'problem' and locations or sources of problem in academic research in the broad name of 'related studies' which are thought of repository of numerous researches made earlier by numerous researchers with the application of scientific methods of investigation. We have been enriched by the information and knowledge that such body of knowlege may give a future researcher multifarious clues and sharpened experiences if he/she wishes to undertake a research study. Thus he/she may be intelligent enough to identify and select a problem of his/her choice and interest.

Secondly, this Block has given us a thorough understanding about hypotheses and its importance in research study. Hypothesis is taken as the compass of the researcher to give him/her directions and roadmap of research study. It is actually a statement indicating potential relationship between variables and is definitely testable for determining its truth value which is binary in nature – either true or false. Finally, the Blockhas given us a workable understanding of research design, the blue-print for the research study to be undertaken.

SUGGESTED READINGS

1. Best, J. W. and Kahn, J. V. (1989). Research in Education. New Delhi : Prentice Hall.
2. Dwivedi, R. S. (1997). Research Methods on Behavioural Sciences. New Delhi : Macmillan India.
3. Kirk, R. E. (1982). Experimental Design : Procedures for the Behavioural Sciences. Belmont : Brooks Cole.
4. McGuigan, F. J. (1990). Experimental Psychology : Methods of Research. New Delhi : Prentice Hall.
5. McMillan, J. H. and Schumacher, S. (1989). Research in Education : A conceptual introduction. New York : Harper Collins.

ASSIGNMENTS

1. What is a research problem ? How can you formulate a research problem ? Explain with examples the characteristics of a research worthy problem.
2. Why does a researcher need to review research relevant literature ? How is review done ?
3. What is the importance of analysing the constructs ? Choose a problem suitable for educational research and define operationally the variables involved. Also write one hypothesis which is testable.
4. Discuss the types and importance of hypothesis in research. Briefly point out the techniques of hypothesis testing.
5. What do you mean by research design ? What role does it play in scientific inquiry ? Briefly write about the major research designs with your own example for each.

Block-3

STRATEGIES OF EDUCATIONAL RESEARCH: HISTORICAL, DESCRIPTIVE AND EXPERIMENTAL

CONTENT STRUCTURE

Introduction

Objectives

Approaches to Educational Research

1.0 : Historical Research

3.1.1 : Concept of historical Research

3.1.2 : Sources of Historical Material

.3.1.3 : Historical Criticism

2.0 : Descriptive Research

3.2.1 : Nature of Descriptive Research

3.2.2 : Significance of Descriptive Research

3.2.3 : Types of Descriptive Research

3.2.4 : Steps in Descriptive Research

3.0 : Experimental Research

3.3.1 : Concept of Experimental Research

3.3.2 : Significance of Experimental Research

3.3.3 : Steps in Experimental Research

3.3.4 : Experimental Designs

3.3.5 : Threats to Internal Validity of Experiments

3.3.6 : Threats to External Validity of Experiments

3.3.7 : Types of Experimental Design

Let Us Sum Up

Suggested Readings

Assignments

INTRODUCTION

This is the Block -3 of EDC 4 of your course. In the earlier two Block you have learnt some fundamental concepts and methodological inputs about systematic research in education. In this Block we shall understand approaches to educational research which deals with specifically how of educational research. Because the fieldof education is vast and rather complicated different strategies of research vary widely. Therefore, we shall learn those approaches and strategies separately. First we shall learn **Historical approach**to educational research : past— oriented research. Then we shall understand **Descriptive approach** to educational research : present oriented research; and finally, we shall understand critically **experimental approach** to educational research and designs : future— oriented research. In sum, we shall get our own insights for carrying out our own research activities.

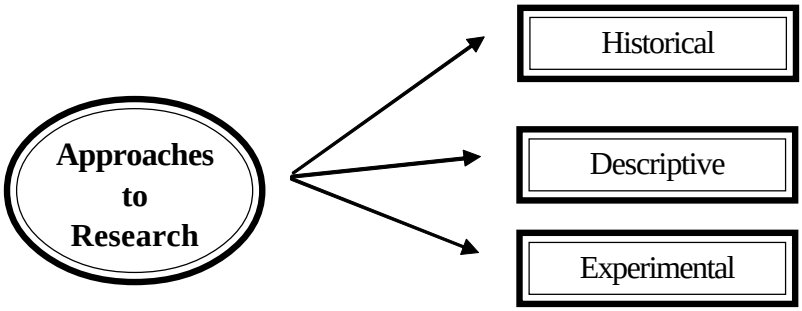
OBJECTIVES

you will be able to :

- Understand critically Historical approach to educational research and how to conduct such research strategies for solution of problems in education;
- Undersatand critically descriptive approach to educational research and how to conduct such research strategies for solution of problems in education;
- Develop your own ideas about experimental approach to educational research and how to conduct such research strategies for solution of problems in education;
- Get acquaintance with designs of educational experiments and how to use them for conducting experiments in education.

APPROACHES TO EDUCATIONAL RESEARCH

Research approach refers to the general strategy followed in gathering and analyzing the data necessary for answering the question at hand. It is the plan of attack for the problem under investigation. Before we pursue further let us review three main approaches to research :



Historical: Historical approach involves a procedure supplementary to observation, a process by which the historian seeks-to test the truthfulness of the reports of observations made by others. Its major purpose is to tell "what was." When research is conducted on the basis of historical data, the researcher is said to have followed historical approach. Historians, philosophers, social psychiatrists, literary men, as well as social scientists, use the historical approach as an aid in visualizing society as a dynamic organism, and its structures and functions as steadily growing and undergoing change and transformation. Social scientists, in particular are concerned with social change as all groups, institutions and personalities undergo changes to a lesser orgreater degree.

Descriptive: Descriptive approach describes and interprets what is. It is concerned with conditions or relationships that exist; practices that prevail; beliefs, point of view, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are development. Its major purpose is to tell "what is". It seeks to describe a field or a problem by using questionnaires and opinionnaires. The approach is mostly directed towards identifying the various characteristics of the research problem and to create observations conducive to further research. This type of research is becoming very popular these days and is extensively followed by researchers to explore new areas of investigation. Mostly empirical problems are investigated by this approach. While using this approach, usually researcher gains insights into other aspects of the problem which otherwise may not be within the scope of his research proforma.

Experimental. This approach is a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables. Its major purpose is to determine "what may be." It is based on scientific methods in so far as casual relations are studied under controlled conditions. Its applications in social sciences help to explain the variations in an explained variable through the changes or manipulations made in the explanatory variable. Normally changes occurring in independent variable are held to explain the changes that take place in the dependent variable which is supposed to depend on the explanatory character of the independent variable.

To sum up, we may say that the historical research is past-oriented studies, the descriptive research is present-oriented studies and the experimental research is future-oriented studies. Secondly, we may note that the above three-fold classification of approaches to researches in the field of educational research is not exhaustive. Many experts also classify educational researchers in other different ways. We are following here a popular classification scheme only.

Unit - 1

HISTORICAL RESEARCH

3.1.1 : CONCEPT OF HISTORICAL RESEARCH

Human society is an eternally dynamic structure. Its various aspects are constantly under change. History is a record of these changing processes. This is why in social sciences the historical study of social processes is so revealing and important. According to Hans Garth, "Every model of social structure implies a model of socio-historical change; history consists of change which social structures undergo." In the historic study of social structure, the casual relation between its various aspects becomes known. The current structure, culture, folkways and social mores and organization of any social group are resultants of its past forces, that is, its history and evolution. The historical knowledge about these processes enables us to anticipate their future structure. No social change takes place in the void; it is a result of past forces and will give rise to future forces. Accordingly, in order to understand efficiently any social group or institution it has to be studied in its historical perspective.

An obvious question is raised to what extent historical research is actually a research. Cohen has given us some reasons and considered it as a kind ofresearch like any other type of research approaches in education.

The arguments are : first some students of education are interested in making critical study of historical foundations of education; second the review of related literature and studies are an essential part of problem identification and interpretation of findings; education had interdisciplinary nature and it bears some agenda for normative and interpretive approaches to research and it attempts to discern the truth.

Mouly argues that though historical research cannot meet some tests of the scientific method as used in physical sciences, does not make direct observations, manipulate variables, it qualifies as a scientific endeavour for discovering truth.

Historical research has been defined as the **systematic and objective location, evaluation and synthesis of evidence in order to establish facts and draw conclusions about the past events**.

The definition involves certain activities — localization of evidence systematically and objectively implying with the support of some infallible techniques (reliable and valid), organization and integration of those evidence and making judgement about the value and relevance of those evidence; with the purpose of finding out the facts in those evidence and finally drawing conclusions about the past events.

It is often said an act of reconstruction of the past in a spirit of inquiry designed to achieve a faithful representation of a previous age. Reconstruction implies a holistic perspective in that method of inquiry that attempts to 'encompass and then explain the whole realm of man's past. Ultimately the historical research is concerned with a broad view of the conditions which bring them about.

Historical research is not a happazard approach. The acts of historical research involves —

1. Identification and limitations of a problem or an area of study.
2. Formulation of research questions or hypotheses;
3. The collection, organization verification, validation analysis and selection of data.
4. Testing the hypotheses of answering the research question;
5. Writing research report.

3.1.2 : SOURCES OF HISTORICAL MATERIAL

Historical research collects data — historical evidence — form difficult sources.

Sources of Data

Historical data are usually classified into two main categories :

1. Primary sources are eyewitness accounts. They are reported by an actual observer or participant in an event.
2. Secondary sources are accounts of an event that were not actually witnessed by the reporter. The reporter may have talked with an actual observer or read an account by

an observer, but his or her testimony is not that of an actual participant or observer. Secondary sources may sometimes be used, but because of the distortion in passing on information, the historian uses them only when primary data are not available.

Primary Sources of Data

Documents : Documents are the records kept and written by actual participants in, or witnesses of, an event. These sources are produced for the purpose of transmitting information to be used in the future. Documents classified as primary sources are constitutions, charters, laws, court decisions, official minutes or records, autobiographies, letters, diaries, genealogies, census information, contracts, deeds, wills, permits, licenses, affidavits, depositions, declarations, proclamations, certificates, lists, handbills, bills, receipts,newspaper and magazine accounts, advertisements, maps, diagrams, books,pamphlets, catalogs, films, pictures, paintings, inscriptions, recordings, transcriptions, and research reports, — all relevant to the 'problem' to be solved in a particular historical study.

Various Historical Sources to Which the Historian Himself has Access- A social scientist may make direct use of the documents, manuscripts etc., when their social content has been analyzed by the historians and their relevance and significance has not been determined in the cultural history of the period about which the said documents are. These documents may also be used by the social scientist when he has to directly verify certain events and their role and significance has not been conclusively determined by the cultural historian. They may also be used to provide missing links in the cultural history, and if there is doubt and controversy about some points in a given social situation, direct reference to documents is of utmost value. A researcher may not be in a position to settle the controversy about some particular point, but direct evidence of documents can definitely improve our knowledge and appreciation of the controversial point.

Remains or Relics : Remains or relics are objects associated with a person, group, or period. Fossils, skeletons, tools, weapons, food, utensils, clothing, buildings, furniture, pictures, paintings, coins, and art objects are examples of those relics and remains that were not deliberately intended for use in transmitting information or as records. However, these sot may provide clear evidence about the past. The contents of an burial place, for instance, may reveal a great deal of information about the way of life of a people—their food, clothing, tools, weapons, religious beliefs, means of livelihood, and customs. Similarly, the cord of an institution for the mentally ill or mentally retarded can reveal a great deal of information about the way the

clients were treated, including quality of food, the opportBlocky for work and recreational activities, whether abuses regularly occurred.

Materials of Cultural History and Analytical History- The social scientist by himself cannot easily take a decision in this matter and lacking in specialized knowledge of history, as he is likely to be, his choice is liable to be doubtful if not completely misleading. Therefore, free and frank consultations with the specialist in this matter is an eminently suitable course.

Oral Testimony : Oral testimony is the spoken account of a witness of participant in, an event. This evidence is obtained in a personal interview and may be recorded or transcribed as the witness relates his or experiences.

Official Records and Other Documentary Materials : Included in this category are records and reports of legislative bodies and state departments of public instruction, city superintendents, principals, presidents, dead department heads, educational committees, minutes of school boards, boards of trustees, surveys, charters, deeds, wills, professional and periodicals, school newspapers, annuals, bulletins, catalogs, course of study, curriculum guides, athletic game records, programs (for graduation, dramatic, musical, and athletic events), licenses, certificates, text:, examinations, report cards, pictures, drawings, maps, letters, diaries, autobiographies, teacher and pupil personnel files, samples of student work and recordings.

Personal Sources of Authentic Observers and Witnesses : In educational research the primary source of collecting the historical data is the report of competent observers and eyes witnesses, the persons who have seen the happenings. If we wish to know the recent history of commBlocky, its beliefs and traditions, we can gain a lot of information by interviewing the elderly and respected members of the commBlockyin question.

Secondary Sources of Data

Secondary sources are the reports of a person who relates the testimony of an actual witness of, or participant in, an event. The writer of the secondary source was not on the scene of the event, but merely reports what the person who *was* there said or wrote. Secondary sources of data are usually of limited worth for research purposes because of the errors that may result when information is passed on from one person to another. Most history textbooks and encyclopaedias are examples of secondary sources, for they are often several times removed from the original, first-hand account of events.

Some types of material may be secondary sources for some purposes and primary sources for another and, of course depend upon the nature of the problem and discretion and wisdom and the social scientist doing that survey.

Limitations of Historical Research

The problem involved in the process of historical research make it a somewhat difficult task. A major difficulty is delimiting the problem so that a satisfactory analysis is possible. Too often, beginners state a problem much too broadly; the experienced historian realizes that historical research must involve a penetrating analysis of a limited problem rather than a superficial examination of a broad area. Since historians may not have lived during the time they are studying and may be removed from the events they investigate, they must often depend upon inference and logical analysis, using the recorded experience of others rather than direct observation. To ensure that their information is as trustworthy as possible, they must rely on primary, or first hand, accounts. Finding appropriate primary sources of data requires imagination, hard work, and resourcefulness.

Researchers must also keep in mind the context in which the events being studied occurred and were recorded. It is necessary to keep the biases and beliefs of those who recorded the events in mind, as well as the social and political climate in which they wrote. The eminent historians agree in one point that there is no unanimity or agreement in history. Different narrators give varying accounts of the same set of events, but when it comes to explaining these the explanations may be so diverse as to be contradictory. The historian feels compelled by the necessity of being intelligible to omit vast amount of detail and include only his conclusions or summary of these. Accordingly, all history is interpretation and this means every history has a point of view governing its narrations and descriptions. The social facts and processes as a totality must be incorporated and accounted for.

3.1.3 : HISTORICAL CRITICISM

Past events cannot be repeated at will. Because the historian must getmuch of the data from the reports of those who witnessed or participated in these events, the data must be carefully analyzed to sift the true from the false, irrelevant, or misleading. Trustworthy, usable data in historical research are known as historical evidence. That body of validated information can be accepted as a trustworthy and proper basis for the testing and interpretation of a hypothesis.

Historical evidence is derived from historical data by the process of criticism, which is of two types: external and internal.

External Criticism

External criticism establishes the authenticity or genuineness of data. Is the relic or document a true one rather than a forgery ? Various tests of genuineness may be employed.

Establishing the age or authorship of documents may require intricate tests of signature, handwriting, script, type, spelling, language usage, documentation, knowledge available at the time, and consistency with what is known. It may involve physical and chemical tests of ink, paint, paper, cloth, stone, metals, or wood.

Internal Criticism

After the authenticity of historical documents or relics has been established, there is still the problem of evaluating their accuracy or worth. Although they may be genuine, do they reveal a true picture? What of the writers or creators? Were they competent, honest, unbiased, and actually acquainted with the facts, or were they too antagonistic or too sympathetic to give a true picture? How long after the event did they make a record of their testimony, and were they able to remember accurately what happened? Were they in agreement with other competent witnesses?

These questions are often difficult to answer, but the historian must be sure that the data are authentic and accurate. Only then may he or she introduce them as historical evidence, worthy of serious consideration.

Some Critical Features of Historical Research

Choice of problems in historical research can sometimes be a daunting business for the potential researcher. Historical research must be penetrating analysis of a limited problem, rather than a superficial examination of a broad area. Four basic questions should be asked in identifying a topic :

1. Where do the events take place ?
2. Who are the persons involved ?
3. When do the events occur ?
4. What kinds of human activity are involved ?

The question : **does historical require the formulation of hypothesis or hypothesis ?** The answer may be either yes of no. But Borg, an expert ineducational research emphatically states : "without hypotheses, historicalresearches often become little more than aimless gathering of facts. In searching the materials that make up the sources of historical research data, unless the student's attention is aimed at information relation to specific questions or concerned with specific hypotheses, he has little chance of extracting a body of data from the available documents that can be synthesized to privide new knowledge or new understanding of the topic studies." However, some others observe that a historical research instead of hypothesis, one may use research questions for getting the track of the research enterprise.

Another critical feature concerns with bias in historical research. Researchers generally recognize three sources of bias : those arising from the subject being interviewed, those arising from the researcher him/her self, and those arising from the subject-researching interaction.

There are some problems in writing report of historical research too. These have been enumerated by Best as :

1. Problem too broadly stated.
2. Tendency to use easy — to find secondary sources of data rather than sufficient primary sources which are harder to locate byt usually more trustworthy.
3. Inadequate historical criticism of data, due to failure to establish authenticity of sources and trustworthiness of data.
4. Poor logical analysis resulting from oversimplification, over generalization, and failure to interpret terms used failure to distinguish between significant facts from that are irrelevant of unimportant.
5. Expression of personal bias, and
6. Poor reporting in a style that is dull andcolorless of logically loosely tied.

Let Us Check Our Progress

1. Explain importance of historical research in educational studies.
2. Give a suitable meaning of external criticism of historical data sources.
3. Write down sources of erros in historical research in education.

Unit - 2
DESCRIPTIVE RESEARCH

3.2.1 : NATURE OF DESCRIPTIVE RESEARCH

Descriptive research studies are designed to obtained pertinent and precise information concerning the current status of phenomena and, whenever possible, to draw valid general conclusions from the facts discovered. They are restricted not only to fact finding but may often result in the formulation of important principles of knowledge and solution of significant problems concerning local, state, national and international issues. Descriptive studies are more than just a collection of data; they involve measurement, classification; analysis, comparison, and interpretation. They collect and provide three types of information : (1) of what exists with respect to variables or conditions in a situation; (2) of what we want by identifying standards or norms with which to compare the present conditions or what experts consider to be desirable, and (3) of how to achieve goals by exploring possible ways and means on the basis of the experience of others or the opinions of experts.

The activities of descriptive studies researchers are not different from those of the other researchers. In descriptive study, the researcher proceed through following steps such as follows: (1) identify and define their problem; (2) state their objectives and hypotheses; (3) list the assumptions upon which their hypotheses; and procedures are based; (4) choose appropriate subjects and source materials; (5) select or construct tools for collecting data; (6) specify categories of data that are relevant for the purpose of study, and capable of bringing out significant similarities, differences, or relationships; (7) describe, analyze, and interpret their data in clear and precise terms; and (8) draw significant and meaningful conclusions. At times, descriptive researcher is not directed towards hypothesis testing.

Descriptive studies investigate phenomena in their natural setting. Their purpose is both immediate and long range. They constitute a primitive type of research and do not aspire to develop an organized body of scientific laws. Such studies, however, provide information useful

to the solution of local problems and at times provide data to form the basis of research of a morefundamental nature.

Descriptive research differs from other types of research in purpose and scope. A clear-cut distinction can be drawn between descriptive studies and historical studies on the basis of time. The latter deals with the past and the former with the present. The limitations of descriptive investigations, however, are very similar to those of the historical enquiry in that cause and effect relationships are difficult to establish, and the time at which study is conducted is a critical factor in the interpretation of the data. The method of descriptive research, in contrast to an experiment, is relatively less scientifically sophisticated. Here the researcher does not manipulate the variables or arrange for events to happen. In fact, the events that are observed and described by him would have happened even though there had been no observation. Descriptive studies involve events that have already taken place and are related to a present condition.

Descriptive studies vary greatly in complexity. At one extreme, they constitute nothing more than frequency count of events to the study of local problems without any significant research purpose. At the other extreme, they attempt to ascertain significant interrelationships among phenomena.

3.2.2 : SIGNIFICANCE OF DESCRIPTIVE RESEARCH

The descriptive research method has undoubtedly been the most popular and the most widely used research method in education. It helps explaineducational phenomena in terms of the conditions or relationships that exist, opinions that are held by the students, teachers, parents and experts, processes that are going on; effects that are evident, or trends that are developing. Because of the apparent ease and directness of this method, a researcher can gather information in terms of individual's opinion about some issue, some behaviours by a questionnaire or a test.

The descriptive investigations are of immense value in solving problems about children, school organization, supervision and administration, curriculum, teaching methods and evaluation. There are a number of questions that arise concerning these aspects of education, and solutions to several problems.

The problems in education directly involve people and the situations precipitating these problems are constantly in a state of change. To keep abreast of changes, descriptive studies conducted at different intervals with representative groups of people will be immensely helpful.

The descriptive type of research is useful in the development of data gathering instruments and tools like checklists, schedules, attitude scales score, questionnaires and rating scales. It also provides the background ideas and data from which many more refined or controlled studies of casual relations are made.

3.2.3 : TYPES OF DESCRIPTIVE RESEARCH

Descriptive studies have been classified variously by various writers. Some have classified them on the basis of the purposes they achieve; some on the basis of the geographical areas they cover; and some on the basis of the techniques they employ. These classifications mostly range from the survey,

which describes the status quo of educational variables, to the correlational study, which investigates the relationships between variables. For the sake of convenience descriptive studies may be classified in the following three categories :

A. Survey studies,

B. Interrelationship studies,

C. Developmental studies

Although this classification is arbitrary, yet it seems to have merit from an operational, as well as from an organizational point of view and will be used as the basis of the present discussion. Some investigations fall exclusively within one of these categories, but others have characteristics of more than one.

A. Survey Studies

Survey studies are conducted to collect detailed descriptions of existing phenomena with the intent of employing data to justify current conditions and practices or to make more intelligent plans for improving them. Their objective is not only to analyze, interpret, and report the status of an institution, group, or area in order to guide practice in the immediate future, but also to determine the adequacy of status by comparing it with established standards. Some surveys are

confined to gather all three types of information: (1) data concerning existing status, (2) comparison of existing status with the established status and standards, and (3) means of improving the existing status; while others are limited to one or two of these types.

Survey studies may take different forms depending upon the scope, nature and purpose of the problem under investigation. They may be broad or narrow in scope. Some surveys encompass several countries, states or regions; or may be limited to one country, region, state, district, tehsil, city, school system, or some other Block. Survey data may be collected from every Block of a populationor from a representative sample. The information gathered may be concerning a large number of related factors or may be confined to a few selected items.

Survey studies describe and specify the properties of educational phenomena. They include: (1) School surveys, (2) Job analysis, (3) content analysis (4) Public opinion surveys, and (5) Social surveys.

According to Sapford, a survey is a detailed and quantified description of a population — a precise map or a precise measurement of potential. Survey involve the systematic collection of data from the target data sources, whether this be interview, questionnnaire, rating scale or observation methods so at the very heart of survey lies the importance of standardization. Precise samples are selected by employing suitable sampling design, and attempts are to standardize and eliminate errors from survey data gathering tools or techniques. Census is a grand survey of demographic data for a country. However, survey implies a mass data if not covering all available elements in the target population

From the point of view of methodology of research survey implies a process executed and controlled by the survey makers or investigator. It is generally conceived of a six-stage process.

Stage I : Survey design and preliminary planning. This stage embraces the specification of the central reserach questions that a survey needs to address. These involves hypotheses, time frame, geographical location, sample and sampling design, instrumentation, budget, etc.

Stage II : Pretesting. This is a stage of a pilot study before carrying out the survey proper so that the investigator gets further insights which may help him/her in conducting survey work in more econimic and efficient way.

Stage III : Final Survey Design and Planning. This is the stage of final planning of the survey to be conducted.

Stage IV. Data Collection. In this stage all technical considerations relating to selection of the tools of techniques to be employed for data collection in the most planned and systematic manner.

Stage V : Data Coding. At the coding stage, a number is assigned to the responses to each survey questiong, and these are then entered into a data record that includes all the responses from one respondent. Each respondent is then given a unique identity number. Before data analysis can begin the data have to cleaned — checked for obvious errors.

Stage VI : Data Analysis and Interpretation. This is the final stage. It involves analysis of the coded data as per design of the survey study so that it can answer the research questions of test the hypotheses generated. Finally, the investigator draws collusion and relates the present findings with the entire body of knowledge.

Sources of Errors in Survey Studies

Sources of errors in survey studies are many. The broad kind of error is sampling error. It indicates the deviation of the sampled value from the population value. Another kind of error is data collection error. It may consist of the unreliability or inappropriateness of the data gathering tools or techniques

used. Secondly, some respondents may not provide the entire needed information due to some reasons or just ignoring some items of the tool used or even some may not comply with the investigator's request for becoming a volunteer to supply data. Even some other biases may come in the collected

data. For conducting a good survey an investigator must attempt to reduce all sorts of errors.

Let Us Check Our Progress

1. Write a good definition of survey research study.
2. State at least three characteristics of survey research.
3. Why does a survey study belong to the descriptive approaches toresearch ? — Explain

B. Interrelation Studies

Interrelation studies bear a special significance in descriptive approach to educational research. Here the investigator not only gather data from variussources for describing existing

status among variables but more specifically strives to analyze relationships that exist among different variables though he/ she does not excercise any manipulation as does so in the experimental studies. In this type of research the sample may be either large one or even sometimes a single typical case can serve the purpose. These studies may be classified as :

(1) Correlation and prediction,

(2) Causal comparative,

(3) Cross-cultural and

(4) Case study.

1. Correlation and Prediction Studies

The main focus of the correlation studies is to determine correlation between or among two or more variables. This likes to examine the extent to which variation in one variable (say achievement in mathematics) is associated with variations in another variable (say attitude to mathematics). Sometimes variation in one variable (achievement in algebra) is estimated with the variations in more than one variable at a time (say, attitude to mathematic, numerical ability, reasoning ability, general intelligence). The magnitude of relationship is determined through the use of coefficient of correlation. Therefore, the concerned hypothesis expresses relationship between variables. The employed correlation techniques may be simple product moment correlation, partial correlation, multiple correlations, or any other techniques depending upon the nature of hypotheses to be tested.

The correlation study is relatively easy to design and conduct. It involves collection of two or more sets of data on a sample and computation of the relevant coefficient of correlation between or among them under some given assumptions of measurement. Next, relevant test of significance is made for determining the fate of the hypothesis.

We generally think of linear relationship between variables to stand. But this is not universal in social science research. At some occasions curvilinear relationship exist and at that case some curvilinear correlation solution should be performed.

Some expert think that some point to be kept in mind while interpretingthe obtained coefficient of correlatiion — a coefficient of correlation is a ratio/ fraction without any Block, it is directive in nature (either positive or negative [multiple R is always positive]; its strength depends upon the associated degrees of freedom. Some times coefficient of correlation may be

basic statistics for further advanced examination of relationship in factor analysis or multivariate analysis.

Another side of correlation studies may be prediction after computation of regression analysis. In educational situation a class of correlation studies is called correlates of academic achievement in which the total variance of academic achievement is explained with the help of some other variables [predictors, (independent varibles)]. For this regreesion equation is set. Let us suppose that we like to estimate the relative contibution of the effects of general intelligence, attitude to mathematics, study habits, learning style andarrtibution to success on the achievement in mathematics. Here the obvioussolution is to set a multiple regression equation, noting down independent regressin coefficients and multiple R.

Guilford, a noted psychometrician, suggests that there are four types of prediction of : (1) attributes from other attributes (prediction of academic success from knowledge of gender, caste, religion); (2) attributes from measurements, such as predicting occupational choice from known scores on tests of general intelligence, vocational aptitude, etc; (3) measurements from attributes, e.g., predicting probable test scores from a knowledge of socioeconomic status, gender, locale, etc, and (4) measurements from measurements for example predicting academic achievement from general intelligence, divergent production ability, family income, etc.

2. Causal — comparative Studies

Sometimes descriptive research approah likes to explain ‘why’ of thephenomena. That is why they occur. It also attempts to compare the likenessand differences among phenomena to find out the factors or circumstances seemto accompany or contribute to the occurrence of certain events, conditions or practice. That is, this research study objcets to find out or to give explanationcause-effect relationship indirectly, which is actually main menu of experimentalstudies. Because of the complexity and nature of social phenomena, an educatorcannot always select, control and manipulate the factors necessary to studycause-effect relations. For example an educator can not manipulate homeenvironment, though some home — relevant variables, may cause inattentionat class room. In this case for remedial measures a teacher — researcher hasto inject special treatment to overcome their inattention after isolating thespecific home conditions and has to think of causal — comparative study. The

Causal — comparative study is based on John Stuart Mill’s method of discovering causal relationships. This method states : “*If two or more instancesof the phenomenon under*

investigation have only one circumstances incommon, the circumstances in which alone all the instances agree, is the cause (or effect) of the given phenimena". A common example may help you to understand this method. Suppose five students went on a picnic and only three of them became ill when all of them return back. These three students went to a doctor for treatment. the doctor attempts to find out the causes of their illness. Upon inquiry the doctor observed the data that these three students ate curds. This doctor then formulates his hypothesis that the causes of their illness is taking up curds as this food items are common for the three students.

Next the doctor likes to confirm his hypothesis. He employes Mills Joint Method of Agreement and differences which states that *"If two or moreinstances in which the phenomenon occurs have only one circumstance incommon, while two or more instances in which it does not occur have nothing in common save the absence of that circumstances; the circumstances in which alone the two sets of instance differ, is the effect, or cause, or necessary part of the cause, of the phenomenon"*. To make use of this method the doctor findsthat all the ill students took curds along with other food items. He also inquiresthat the remaining two students took all the food items excepts curds.

Causal-comparative studies are useful when researcher cannot manipulate the independent variables or ensure control of other relevant variables though he/she wishes to find out the cause of some happening. Or when it is too costly or even not possible to manipulate or control variables.

The most serious limitation of a causal-comparative study is lack of control. Secondly, the study cannot produce precise and reliable knowledge that can be gained through rigorous experimental studies. However, causalcomparative studies are very helpful in educational research as in the educational filed many variables can never be controlled or manipulated realistically.

3. Cross—culture and Compatative Studies

Cross-culture and comparative studies are special kind of descriptive research approach which include samples from more than one cultures, nations, countries; collect relevant primary and secondary data about educational phenomena, and compare them and interpret them for getting generalized trends, practices, etc. These studies attemps to find out the dynamic relartionshipof cultural social, econimic, political, legal, etc factors of education asevidenced in modern Comparative Education.

The main players of cross-cultural and comparative studies are UNESCO, UNDP, World Bank, WHO, etc and othercenters of development studies scattered over all parts of the world. Even within a single nation regional variations in educational phenomena are also studied. These studies are costly and require generally team work. Such studies also suffer from other limitations like lack of reliability, presence of bias, hidden inclinations of the funding agencies, language problems, problems in standarization of tools of measurements, etc.

4. Case Studies

The case study research refers to intensive investigation of a social Blockthat may involves a student like delinquents, drop outs, teenage gang or a clique in a classroom group. In-depth, not superficial examination is the main feature of case study. Case study research generally follows descriptive research approach. It has resemblance with a survey. But it also differs from a survey in many ways. In survey studies mass sampling is involved but in case study a micro-sampling is employed. A survey study attempts to relate data generally in sperficial manner but in the case study the information seeking motive goes at the bottom of the collected data for isolating factors causing the typicality observed in the case. Therefore, more observational and clinical skills are needed on the part of the researcher in case study research.

Though case study is generally thought of descriptive study, they have sometimes been conducted for purpose of hypotheses testing and takes the form of experimental research.

Yin defines the case study as “an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident” Case studies, then explore subjcets and issues where relationships may be ambiguous or uncertain. But, in contrast to methods such as descriptive survey, case studies are also trying to attribute causal relationships and are not just describing a situation. The problem here, as with all case studies, is that the contextual variables (timing, global, cultures, historical, etc) are so numerous that a purely experimental approach revealing causal associations would simply be unfeasible.

The steps of case study may be discussed as below.

1. To determine the present status of the individual or the social Blockunder investigation through direct observation or measurement. Here the investigator goes far beyond causal observation. Additionally he/she uses numerous standardized tools of measurements covering different dimensions and dynamics of the cases.

2. To determine the most probable antecedents of the case and to formulate a fruitful hypothesis or a set of hypotheses or research questions through the knowledge of similar cases.
3. To deduce the consequences of the hypotheses, the investigator makes further critical thinking how to operationalized the conditions or variables that would be feasible to observe or measure.
4. To determine the situation for verification of hypotheses and to verify the hypotheses. In this stage he/she checks for presence or absence of the antecedents supposed to apply to the situation under investigation. Here the investigator makes uses of the present status and the history of the case. A multi-method approach may serve the purpose the best.
5. To make further verification of the diagnosis. Some remedial measures are suggested.
6. To make follow-up.

In brief the case study procedures may be described as :—

- Develop a theoretical stance
- Select cases
- Design and pilot research tools, protocols and field procedures
- Conduct case study
- Draw cross-case conclusions
- Write the case study report.

Advantages of case studies

Some of the advantages may be cited as :

1. The case study attempts to understand an individual or a Block in depth.
2. It may provide opportBlocky for a investigator to develop insight into basic aspects of human behaviours
3. It gives realistic solutions to many educational problems.

Limitations of case studies

1. Subjectivity may enter into the conclusions if the researcher is not expert one and intellectually honest one. Van Dalen suggests that facts of a case study research must be reported precisely and objectively and judgements must be free from faulty perception, deliberate deception, a poor memory, unconscious biases or hidden motives of any kind to deny the fact of the case.
2. It works in-depth but lacks breadth. Some suggest that a survey study is complementary to indicate nomothetic insight of the facts of the cases.
3. It is impossible to either confirm or refute through empirical study the findings and results of a particular case study. Replication of case studies may be suggestive.

Let Us Check Our Progress

1. Write down the common features of types of educational researchmethods classified under Interrelation Studies.
2. Distinguish between survey study and case study research.
3. Mention the main focus of causal comparative studies.
4. Give two importance of cross-cultural studies in education.

C. Developmental studies

The main focus of the developmental studies in education is to describe and examine the changes in educational phenomena in context either of the individuals or a practice or an institution over time. Time is here a variable. Thus, developmental studies are concerned not only with the existing status and interrelationships of phenomena but also with changes that take place as a function of time. In these studies the investigators describe variables in the course of their development over a period of time — months or years. Two main classifications may be cited of developmental studies in education. These are : (1) Growth studies and (2)Trend studies.

1. Growth Studies :

These study origins from the developmental psychology that studies human growth and development and the outcomes have been applied in learning, teaching, curriculum development, etc in education. The growth studies are concerned with describing general variation in behavior

and growth from age to age, but the trend is toward extending studies to include hypotheses concerning variations in development of different subpopulations, such as boys, girls and in different environments, such as institutionalized and non-institutionalized settings. These are rather more complex analysis of change to increase our ability to predict and control behaviour.

Human development is usually studied by two contrasting methods — *the longitudinal and the cross-sectional techniques*. In both these techniques a seriesof planned and systematic observations are made. In the longitudinal studies,the growth states of the same subjects (children) are observed and measuredat different ages; say at sixth months, 1st year, 2nd year, 3rd year, 4th years, 5^{th}year, and 6th year, 7th year, and so on. Here the same group is measured over ahost of variables in different period of time. On the other hand whenconducting a cross-sectional study, rather than repeatedly measuring the same children, an invesigator makes one set of measurements of different children from each age level, such as 7th, 8th, 9th, 10th, etc. he/she then calculates the average for the variables for each of the selected age groups and plot these average to show the general growth patterns of each variable for children (subjects) from 7th to 10th, for instance.

Cross-sectional studies usually include more subjects as sample but describe fewer growth factors than exploratory longitudinal studies. These studies are used normally from determining the norms of some selected growth patterns. Hence, it is called nomothetic.

Longitudinal growth studies are confirmatory study that tests a specific hypothesis deduced from an explicit theory. The exploratory longitudinal study provides a fruitful source of hypotheses rather than a sensitive method of confirmation. In exploratory study an investigator usually collects data concerning a number of growth variables, notes relationships among them, and suggests hypotheses that can be tested. An internationally recognized longitudinal study is the Barkley Growth Study was based on correlations of maternal and child behavior overtime, with mental abilities.

Longitudinal method is the most satisfactory way of studying human development but the cross-sectional method is less expensive and less time — consuming. A prolonged exploratory longitudinal study is an excellent method of generating testable hypotheses, but it can become unwieldy and non-productive in the hands of an inexperienced researcher. In cross-sectional study, data that will provide rough, general assessment of developmental patterns can be gathered and analyzed in a relatively short time.

Sampling problem may occur in the use of cross-sectional method. In a longitudinal study, the investigator can compare each observation of a child with an earlier and later observation of the same child.

In cross-sectional method the researcher cannot remove all the variables other than age in which groups differ, but he/she can select age-differing groups that are as alike as possible in respect of gender, intelligence, or any variable that may significantly affect the growth factor being studied.

Longitudinal studies also have sampling problems. The data in these studies are obtained from a limited number of subjects and hence they do not experience the corrective influence of many samples. These studies also can not remove or isolate history and other maturational variables from the main outcomes of the research. It may also suffer from mortality or drop out problems. Further, the researcher can not make improvements in the techniques as the study advances over time.

2. Trend Studies :

Trend studies are used to obtain data, describe the changes witnessed over time in some significant variables and analyze social, economic, or political or socio-political-educational data to identify trends (usually in mathematical sense — an equation or model) and to predict what is likely to take place in the future. Some educational organizations conduct such studies in order to plan effectively and to predict future system. During the exercise of the Kothari Commission, the experts conducted trend studies and predicted the future strength of our educational system to build up. Trend studies are the techniques for the planners.

Trend studies are undertaken through documentary analysis or surveys at repeated intervals of time. The experts of economics of education generally prefer this model and give us valuable predictive information for future controlof change may be taken up.

Let Us Check Our Progress

1. What do you mean by developmental studies in education.

2. Distinguish between longitudinal and cross-sectional studies.

Content Analysis

Besides the survey, interrelation and developmental studies, content analysis is another kind of descriptive research approach. The main issue is a precise description of communication. The communication may be either written or oral. Content analysis is also referred to as documentary analysis. It is an analytic tools. Content analysis can be undertaken in several areas like Curriculum Evaluation, Textbooks, Teaching-Learning Materials or Programmes, Comprehension levels of Pupils, etc. The outcomes of such analysis may be helpful in making valuable educational decisions.

3.2.4 : STEPS IN DESCRIPTIVE RESEARCH

The process of descriptive research differs from other forms of research. Since such studies, describe and interpret what conditions or relationships exist at present, the researcher may adopt the following steps:

Selection of the Problem

A researcher may be concerned with conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are going on, effects that are being felt or trends that are developing, and may select the problem accordingly from the area or field in which he is interested.

Statement and Definition of the Problem and Formulation of Hypotheses, if any

The researcher must state the problem clearly as it is done in case of other types of research. The statement must identify the variables involved in the study. It should specify clearly whether the study is merely seeking to determine the presents status of these variables or whether it will also explore relationships between the variables. Finally, hypotheses would be formulated for the solutions of the problem.

Identification of Data

After stating and defining the problem, the next step for the researcher is to list the data to be collected for the study. He has to specify whether the data are of qualitative or a quantitative nature and whether the data will be collected in the form of counts, test scores, responses to questionnaires, interviews, and so on.

Selection or Development of Data gathering Tools

The nature of the data to be collected helps the researcher to select the appropriate tools for the study. If the readymade tools are not available, the researcher has to develop his own tools. Questionnaires, interviews, psychological tests, rating scales, schedules and attitude scales are the most frequently used tools for descriptive research. If the researcher uses readymade tools, he should satisfy himself about their reliability, validity, and suitability for sample chosen for the study. If the researcher develops his own tools, he should try them out with a small group in order to evaluate them and make modifications if necessary. The tools must be reliable, valid, useful and relevant to the problem at hand.

Selection of the Sample

The researcher must select the sample about which he wishes to seek information using appropriate sampling techniques. The sample selected should adequately represent the population.

Collection of Data

The researcher should specify the practical schedule for gathering the datafrom the sample selected for the study with the help of appropriate tools.

Analysis and Interpretation of Data

The data collected is quantified in the form of counts, test scores, responses to questionnaires, etc. These are analyzed and interpreted with the help of appropriate parametric or non-parametric statistical tests.

Writing of the Research Report

It is the last stage in the descriptive research as in any other form of research. The researcher should exercise should exercise extreme caution in generating conclusions and reporting them with all the limitations of the study.

Let Us Check Our Progress

1. Write down two important features of descriptive study.

2. How can you improve quality of a survey research ?

3. Distinguish between survey study and historical research study ineducation.

Unit - 3
EXPERIMENTAL RESEARCH

3.3.1 : CONCEPT OF EXPERIMENTAL RESEARCH

The educational researcher may wish to know what effect may be observed when certain conditions are imposed on subjects. For example, the researcher may want to know the effect on academic achievement of some disciplinary measures taken in schools. To investigate this, the experimenter may impose different degrees of disciplinary measures and study the subsequent improvements in academic achievement. In other words, the researcher deliberately manipulates and controls the conditions and observes the effect it has on certain aspects of the subject. Experimental research. imposes differences between groups to ascertain their differences. Experimental research in education most closely resembles scientific research and provides the most sophisticated method of hypothesis testing.

Operational notations of Experimental Research

Depicting designs- Operationally, experimental research consists (at its simplest) of manipulating a variable, called the independent variable and observing its. effect on another variable, called the dependent variable. In depicting the design of experimental research, usually adaptations from Campbell and Stanley's [Campbell, D.T. and Stanley, J.C.] symbols are used.

Operations establishing causality in Experimental Research

Experimental research, like Ex-post facto research, establishes causality. The difference being, in experimental research the independent variable is actually manipulated to observe its effect on the dependent variable. Thus the problem of establishing cause and effect, encountered in correlational research is overcome. However, in experimental research, the time order and the purity of observations have to be established. Thus, experimental research involves three operations: demonstrating co-variation, establishing the time order sequence and maintaining non-spuriousness, i.e., maintaining the validity of the experiment.

Research design for experimental research has four components: **comparison, manipulation, control and generalization**. Generalization, is the ultimate goal of scientific research.

Comparison demonstrates that two variables are associated in some manner. If two samples of students are taken and one sample. is exposed to a certain treatment while the other is not, then the effect of the treatment is ascertained by comparing observations on the two samples. This comparison establishes the co-variation of the treatment with certain characteristics of the samples.

Manipulation indicates the extent of the treatment to be administered on the sample. The total withdrawal of treatment or its variations on the sample form the basis of comparison. Manipulation establishes the time-order.

Control in an experimental design establishes non-spuriousness and thus the validity of the experiment. By controlling, the researcher rules out other rival explanations of the observations so that the treatment or intervention is established as the independent variable that causes the dependent variable to change. This is called the *internal validity* of the experiment.

Generalizability is the extent to which the findings can be applied to larger populations or different settings. It is called *external validity.* It depends on the representative ness of the samples in the study. External validity without sufficient internal validity will lead to unreliable results.

3.3.2 : SIGNIFICANCE OF EXPERIMENTAL RESEARCH

The experimental research is not considered a precise method of research in the field of education because of the complex nature of the human beings and problems of controlling the extraneous variables. However, in spite of all such difficulties, experimentation has been put to various uses in solving educational problems. Campbell and Stanley (1963) are of the opinion that:

The experiment is the only way of verifying educational improvements, and the way of establishing a cumulative tradition in which improvements can be introduced without the danger of a faddish discard of old wisdom in favour of inferior novelties.

Experimental research is used to determine and evaluate the adequacy and effectiveness of the educational and instructional objectives through the measurement of their outcomes. After

evaluating the efficacy of objectives, the suggestions are made for the formulation, execution and modification of educational programmes and classroom practices. The classroom teacher uses experimentation to evaluate the effectiveness of certain learning experiences, planned and organized, to achieve some desired objectives. Effectiveness of teaching methods and innovations in the evaluation techniques is also ascertained through experimental research.

3.3.3 : STEPS IN EXPERIMENTAL RESEARCH

The steps of the experimental method are not different from those of a scientific method. For the sake of clarification, the major steps may be described as under :

Surveying the Literature Relating to the Problem

For a worthwhile research based on experimentation, the researcher like in any other type of research, needs to acquire up-to-date information relating to his problem.

Selecting and Defining the Problem

Experimental research starts with the selection of the problem which is amenable to experimentation. It needs a rigorous logical analysis and definition of the problem in precise terms. The variables to be studied should be defined in operational terms clearly and unambiguously. It helps the researcher to convert the problem precisely into a hypothesis that can be verified or refuted by the experimental data.

Stating of Hypotheses

The stating of problem hypotheses is one of the distinguishing characteristics of the experimental method. Hypotheses are the heart of experimental research. They suggest that an antecedent condition or phenomenon (independent variable) is related to the occurrence of another condition, phenomenon, event, or effect (dependent variable). To test a hypothesis, the researcher attempts to control all the conditions except the independent variable which he manipulates. Then he observes the effect on the dependent variable presumably because of the exposure to the independent variable. The researcher, therefore, should not only be concerned primarily with experimental plans and statistical procedures, but should give sufficient attention to the formulation of hypotheses. The experimental plans and statistical procedures merely help him in the testing of hypotheses and contribute little in the development of theories or advancement

of knowledge. The hypotheses developed or derived from existing theories, however, contribute to the development of new theories and knowledge.

Constructing the Experimental Plan

Experimental plan refers to the conceptual framework within which the experiment is conducted. According to Van Dalen it represents all elements, conditions of phenomena, and relations of consequences so as to:

I. Identify all non-experimental variables that might contaminate the experiment and determine how to control them;

II. Select a research design;

III. Select a sample of subjects to represent a given population, assign subjects to groups, and assign experimental treatments to groups;

IV. Select or construct and validate instruments to measure the outcomes of the experiment;

V. Outline procedures for collecting data

VI. State the null hypothesis.

The identification of non-experimental or extraneous variables and the procedures for controlling them have already been discussed earlier in this chapter. In order to select a suitable research design for conducting the experiment and assign subjects to different experimental treatments to measure the outcomes of experiment, the researcher must be well acquainted with different types of experimental designs.

3.3.4 : EXPERIMENTAL DESIGNS

An experimental design is to the researcher what a blueprint is to an architect. It provides the researcher an opportBlocky for the comparisons required by the hypotheses of the experiment and enables him to make a meaningful interpretation of the results of the study with the help of statistical analysis of the data. There are three important criteria which the researcher must keep in mind while selecting an experimental design for conducting his experiment.

Appropriateness

The first and the most important criterion is that the design should be appropriate for testing the hypotheses of the study. If the design is not appropriate, the results of the study will not be

worthy of serious consideration. The important criterion of a well designed experiment is not complexity or simplicity but appropriateness. The researcher, therefore, should select the design that will do the job it is supposed to do and is able to arrange objectively the experimental conditions to meet the requirements of his study.

Adequacy of Control

The second criterion is that the design must provide 'adequate control' so that the effects of the independent variable on the dependent variable can be measured. The adequate control of extraneous variables helps the researcher to get dependable answers to the questions raised by the hypotheses of the study. 'Randomization' is the only best method of controlling all possible extraneous variables.

If it is not possible to select subjects at random, then try to assign subjects to groups randomly. If neither of these is feasible, then at least an attempt should be made to assign experimental treatments to the groups at random.

The design with adequate control suggests what observations are to be made by the researcher, how to make them, what statistical tests are feasible, how to analyse the obtained experimental data, and what results may be drawn from the statistical analysis.

Validity

The third criterion that the researcher must give attention to is the 'validity' of the design. It is essential for the purpose of testing the particular hypothesis of the study. Campbell and Stanley (1963) have suggested that there are two general types of validity: internal and external. We are discussing these in the next sections.

3.3.5 : THREATS TO INTERNAL VALIDITY OF EXPERIMENTS

One of the major objectives of the researcher in experimentation is to determine whether the variables that have been identified actually have a systematic effect on the dependent variable and whether the observed results were not affected by the extraneous or situational variables. The extent to which this aim is attained is a measure of internal validity of experiment. This validity is basically a problem of control. The extraneous variables that affect the control of a design contribute to its internal validity.

Campbell and Stanley (1963) have pointed out that there are eight extraneous variables which affect significantly the internal validity of a Research design. They are of the opinion that these variables must be controlled or else they might lead to alternative interpretations of the results of the experimental study. These are popularly known as Threats to Internal Validity of experiment.

(i) History : The researcher should try to control the specific events, other than the experimental treatment, that may occur between the first and the second measurements of the subjects to affect the dependent variable.

(ii) Maturation : The time period that elapses during the experimentation may produce certain changes in the subjects. For example, the subjects may perform differently on the dependent variable on different occasions as a result of biological or psychological processes like fatigue, age, interest or motivation. Therefore, the effects on the dependent variable as a result of the change in subjects due to passage of time could mistakenly be attributed to the experimental variable.

(iii) Pre-testing : The exposure of the subjects to the pre-test may serve as the learning experience and therefore it may affect their post-test performance.

(iv) Measuring instruments : Different measuring instruments, scorers, ratters, interviewers or the observers used at the pre-and post-testing stages may also account for the observed differences in the scores or measures of the dependent variable.

(v) Statistical regression : The groups chosen on the basis of extreme scores may cause statistical regression effect. It refers to the tendency for extreme scores' to regress or move towards the common mean on subsequent measures. Such a tendency may operate to produce an effect

(vi) Differential selection of subjects : The groups may differ significantly on some important variables related to the dependent variable even before the application of the experimental treatment. For example, if the subjects in the experimental group in an experiment of retention are more intelligent than the subjects in the control group, the former may perform better on the dependent variable (retention measure) even if this group did not receive an experimental treatment.

(vii) Experimental mortality : The differential loss of subjects from the comparison groups may affect the findings of the study. If, for examples, some subjects in the experimental group

who receive the lowest scores on the pre-test drop out after taking the test, this group will show higher mean on the post-test than the control group, not because of the experimental treatment but because the low scoring subjects are not present.

(viii) Interaction of selection and maturation, selection and history, etc.- When the two comparison groups have the same scores on the pre-test, some other differences due to interaction between the variables such as intelligence, motivation, interest, age, etc., rather than experimental variable may cause one of the groups to get higher post-test scores. Such interaction occur when subjects are selected into groups on the basis of factors extraneous to the purpose of the experiment.

External validity The second important objective of the researcher is to determine whether the systematic relationships that have been identified, isolated and measured can be generalized outside the experimental setting. The extent to which this objective is attained is a measure of the external validity of the experiment. This validity is concerned with the generalizability or representativeness of the experimental findings, that is, to what subject populations, settings, experimental variables and measurement variables can the results of the experiment be generalized.

Bracht and Glass (1968) have classified external validity into two types: (i) population validity and (ii) ecological validity.

3.3.6 : THREATS TO EXTERNAL VALIDITY OF EXPERIMENTS

In laboratory research, the researcher has the virtue of permitting to carefully avoid threats to internal validity. However , the artificial nature of such a setting greatly reduces the generalizability of the findings from such research. Since educational researches ar primarily concerned with the practical uses of their findings, frequently conduct their studies in real classroom situations. While these real life settings present opportBlockies for greater generalizations, they d'not automatically result in externally valid research. Campbell and Stanley (1966) also discussed the factors that may lead to reduce generalize ability of research to other settings, persons, variables ,measurement instruments.

Interference of prior treatment- In some types of experiments the effect of one treatment may carry over to subsequent treatment. In an educational experiment ,learning produced by the first treatment is not completely erased and its influence may accrue to the advantage of the second treatment.

The artificiality of the experimental setting- In an effort to control extraneous variables and researcher imposes careful controls which may introduce sterile or artificial atmosphere that is not at all like the real life situation about which generalizations are deserved. The reacting effect of the experimental process in a constant threat.

Interaction effect of testing- The use of a protest at the beginning of a study my sensitized individuals by making them more aware of concealed purposes of the researcher and may serve as a stimulus to change. This is a different potential problem then that of testing discussed earlier as a threat to internal validity.

Interaction of selection on treatment-Researcher are rarely, if ever, able to randomly select sample from the wide population of interest or randomly assigned to groups; consequently, generalizations from samples to population is hazardous. Sample used in most classroom experiments are usually composed of impact groups, not randomly selected individuals. They are based upon an accepted invitation to participate.

The extent of treatment verification- Due to the potential threat of experimenter bias, most researcher have research assistance or other who are not directly involved in the formulation of the research hypothesis, deliver the treatment. This leads to a potential threat to external validity.

Let Us Check Our Progress

1. What do you mean by threats to experimental design ?

2. Distinguish between internal validity and external validity incontext of experimental research.

3.3.7 : TYPES OF EXPERIMENTAL DESIGNS

Experimental design is the plan, structure and strategies of an experiment to be conducted. It is the blue-print of the experimental. This is formulated by the researcher before he/she go on to conduct an experiment. It is technically called a control mechanism of the experiments. It follows max-minconprinciple.

There are various types of experimental designs. They vary in complexity and adequacy. The selection of a particular design depends upon such factors as the nature and purpose of the experiment, the type of the variables to be manipulated, the nature of the data, the facilities or

the conditions for carrying out the experiment, and the competence of the experimenter. Although the designs can be combined into various ways, they are broadly classified as under:

1. Pre-experimental designs
2. True experimental designs
3. Factorial designs
4. Quasi-experimental designs
5. Time-series designs

The designs resemble one another from the point of view of purpose and their adherence to the principles of experimentation. They differ in the degree of accuracy with which they attack the problem or meet the essential criteria of control, manipulation, observation, and replication. No design solves all the problems. The nature of the problem determines which type of design is most appropriate and applicable and how the design should be used to meet the requirements of the experiment.

1. Pre-experimental Designs

Pre-experimental designs provide little or no control of extraneous or situation variables. They are, however, still being used in the study of educational problems.

There are two types of pre-experimental designs.

Design 1: One Group Pre-test Post-test Design

When an experimenter uses this design, he measures dependent variable, before the independent variable *X* is applied or withdrawn and then takes its measurement again afterwards. The difference in the measurements of dependent variable, if any, is computed and is, taken as the amount of change as a result of the application or withdrawing of independent or treatment variable.

Illustration

Suppose a teacher wants to evaluate the effectiveness of programmed instruction in teaching general science to sixth grade students. At the beginning of the session he administers a criterion test to a selected group of sixth grade students that seems to be the good measure of the achievement of the objectives in general science for sixth grade and gets the measure T1. Then the group is administered the programmed text on general science, and at the end of the session

the teacher administers the criterion test a second time to get the measure *T2*. The means of T1 and *T2* are compared to ascertain what difference, if any, the exposure to *X* (teaching through programmed instruction) has made.

An appropriate statistical technique will be used to ascertain whether the difference is statistically significant.

Pre-test	Independent variable	Post-test
T_1	X	T_2
Mean of the criterion test	Teaching through programmed instruction	Mean of the criterion test

Limitations

Since the design involves only one group and one teacher, it seems to control intersubject differences and extraneous variables. The control, however,is superficial and does not check the threats to internal validity because of the following reasons:

1. This design does not use any control group and, therefore, the experimenter cannot assume that the difference between the pretestmean T1 and the post-test mean T2 was brought about by the experimental treatment or by some extraneous variables.
2. History and maturation are two major extraneous variables that are not controlled in this design. History refers to the specific events that can occur between the pre-test and the post-test other than the exposure of subjects to the experimental treatment.
3. This design does not provide any procedure for evaluating the effect of post-test itself. There is practice effect when the subjects take a test a second time or even take a parallel form of the test. That is, subjects perform better at the post-test stage even without any teaching.
4. There is a problem of reactivity in the design due to a reaction between the subject and pre-test measure. It is this reaction rather than the treatment variable that produces the change in the post-test measures.

Design 2 : Two Groups, Static Design

To overcome the limitations of Design 1, ‘two groups, static design’ utilizes two groups, only one of which is exposed to the experimental treatment. The other group which is not exposed

to any experimental treatment acts as the control group and this permits the comparison that is required by a scientific investigation. The experimenter assumes the two groups to be equivalent in all relevant aspects at the start of the experimentation.

Illustration

Suppose a teacher wants to evaluate the effectiveness of a new method of teaching in mathematics to X grade students. He will frame two equivalent groups of 30 each from the same class of 30 students. One group will be taught by the new method and the other one by the conventional method. At the end of the experiment, an achievement test in mathematics is administered to both the groups and a comparison is made of the achievement of students of the two-groups. The means of the post-test T2 will be computed. An appropriate statistical test will be applied to ascertain whether the observed difference is statistically significant.

PARADIGM FOR DESIGN 2: Two Groups Static Design

Group	Independent Variable	Post-test
Experimental	Teaching through new method	T_2
Control	Teaching through conventional method	T_2

Limitations

Since neither randomization nor matching is used to assign subjects to the experimental and control groups, the experimenter cannot assume that the groups are equivalent with respect to relevant extraneous variables before they are exposed to the experimental treatment. This design, therefore, is also considered to be lacking in the necessary control.

2. True Experimental Designs

True experimental designs are mostly used for experimental research in education because they seek to control the main effects of history, maturation, testing, measuring instruments, statistical regression selection, and mortality.

True experimental designs can be classified into four types.

Design 3 : Two Groups, Randomized Subjects, Post-test-only Design This design is one of the simplest and powerful experimental designs. The available subjects are assigned to two groups through randomization which controls for all possible relevant extraneous variables. No pre-test is used and the random assignment of subjects assures that any initial differences between

the groups are attributable only to chance. The two random samples from designed population are obtained in two ways: (1) The subjects may be drawn individually at random and assigned alternatively to the groups; or (2) two different random samples may be selected first and the groups are assigned randomly to the experimental or control condition by the flip of a coin. Only the experimental group is exposed to the experimental treatment. At the end of the experiment, subjects of both the groups are measured on the dependent variable T2 The means of the two groups are compared with the help of appropriate statistical test of significance.

Illustration

Suppose an experimenter wants to ascertain whether a new teaching method will increase reading speed of third grade students. He prepares a list of all the elementary schools of a particular city and assign numbers to all the third grade students. With the help of random number table he may draw a desired sample of 100 students These two random samples of 50 subjects each may be selected from the selected sample in two way : the researcher may select subjects individually at random and assign them alternately to the groups, or he may first draw two random samples and then assign groups to the experimental or control condition by tossing a coin.

After assigning the subjects to two groups, the experimental group is taught through the new method, and the control group through the conventional method, for a period of time. In all other respects, the researcher will treat the groups alike. After the desired period of time, the subjects of both the groups will be administered a reading test. The mean scores of the two groups are compared to determine the effectiveness of new teaching method by using an appropriate statistical test. If the obtained means of the groups are significantly different, the experimenter can be reasonably confident that the use of new teaching method was responsible for the observed difference.

PARADIGM FOR THE DESIGN 3:

Two Groups, Randomized Subjects, Post-test-Only Design

Randomly assigned group	Independent Variable	Post Test
	X	
Experiment	Teaching through new method	T_2
Control	Teaching through conventional method	T_2

Advantages

1. The main advantage of this design is randomization, which assures statistical equivalence of the groups prior to the introduction of the experimental treatment.
2. Since no pre-test is used, this design controls for the main effects of history, maturation, and pre-testing. Moreover, there can be no interaction effects of pre-test and independent or .experimental variable. Hence, this design is especially recommended for the experiments in which pre-test sensitization is likely to occur.
3. This design is useful in the experimental studies, especially at kindergarten or primary stages, in which a pre-test is either not available or not appropriate.
4. If necessary, this design can be extended to include more than two groups.

Limitations

In spite of all the advantages mentioned above, this design suffers from the following limitations:

1. The use of this design seriously restricts the external validity of the experiment. The experiment can partially overcome this limitation by replicating the experiment with different groups.
2. There are some situations in which it is not possible for the experimenter to select subjects at random from the population of interest.

Design 4 : Two Groups, Randomized Matched Subjects, Post-test-Only Design

This design instead of using random assignment of subjects to experimental and control groups, uses a technique of matching. The variables selected for matching must have a significant correlation with the dependent variable and can be measured conveniently. The pre-test scores on the dependent variable or the criterion, if available, can be used very effectively for the matching procedure.

Illustration

Suppose an experimenter is interested in studying the effect of interim tests on the achievement of seventh grade students in general science. He randomly selects 100 students, from the population of seventh grade students studying in the high schools of some city. Intelligence and previous knowledge of general science will be the relevant matching variables that

have a significant correlation with the achievement in general science (dependent variable). The experimenter will select the pairs of students from the desired population in such a way that the scores on pre-test (achievement in general science) and intelligence test of the students of each pair are as close together as possible. Then one student of each pair is randomly assigned to a group which will receive instruction with interim tests (i.e. the group which will be administered interim tests at the end of each Block of the selected content in general science) and the other to the second group which will receive instruction without interim tests. At the end of the experiment, students of, both the groups will be administered some achievement test on the selected content in general science. The means of the achievement scores for both the groups will be computed to test the significance of the observed difference between them. If the difference comes out to be significant, the experimenter will conclude with confidence that the observed difference in performance is due to the effect of interim tests administered during the classroom instruction.

PARADIGM FOR THE DESIGN 4:

Two Groups, Randomized Matched Subjects

Randomly assigned group after matching	Independent variable	Post Test
Experimental	Instruction with interim tests	T_2
Control	Instruction without interim tests	T_2

Advantages

1. This Design is most useful where Design 3 is not applicable and where small groups are to be used.
2. The random assignment of subjects to the experimental and control groups after matching adds to the strength of this design.
3. Design 3 is based on the random selection of subjects to obtain identical groups. With small groups it does not provide any assurance that the groups are really comparable because of the pre-existing inter subject differences on variables highly related to the dependent variable that the experimental treatment is applied to affect. Design 4, however, controls all such pre-existing inter-subject differences.

Limitations

1. This design is subject to the limitations that have been mentioned earlier while discussing matching as a means of control.

2. In some situations it is not possible to locate a match of one or more potential subjects. A bias gets introduced in the sample as a result of exclusion of such cases from it.

Design 5 : Randomized Groups, Pre-test-Post-test Design

This design is also called as 'Randomized control-group Pre-test-Post-test Design'. In this design, subjects are assigned to the experimental and control groups by random procedures and administered a pre-test T1 as a measure of the dependent variable Y. The experimenter introduces the treatment only to the experimental group for a specified period of time. At the end of the experiment, the experimental and control groups are administered the post-test T*2* as the measure of dependent variable. The difference between means of T1and T2 is found for each group and these mean difference scores are compared with the help of an appropriate statistical test in order to ascertain whether the experimental treatment produced a significant effect than the control condition.

Illustration

Suppose an experimenter wants to study the effectiveness of 'Structural Approach' in teaching English to sixth grade students, first he will select subjects from a population of sixth grade students by random methods and then randomly assign subjects to experimental and control groups. A pre-test measuring dependent variable (performance on an achievement test) will be administered on the groups to obtain T1Escores for the subjects of the experimental group and T1C scores for the control group subjects. Keeping all the conditions same for the two groups, experimental group will be taught through the structural approach and the control group by conventional method for a stipulated period of time. At the end of the instruction, the experimenter will test the subjects of the groups on the dependent variable to obtain T2Escores for the experimental group subjects and the T2C scores for the control group subjects. The difference between the T1and T2scores for each subject and the mean of these differences for each group, *DE* and *Dc*, will be determined.

PARADIGM FOR THE DESIGN 5 :

Randomized Groups, Pre-test Post-test Design

Randomly assigned	Pre-test	Independent variable	Post-test
Experimental group	T_{1E}	Teaching through structural approach	T_{2E}
Control group	T_{1C}	Teaching through traditional method	T_{2C}

D_E — mean of the difference between experimental subject's pre-test and post-test scores.

D_C — mean of the difference between the control subject's pre-test and post-test scores.

Compare D_E and D_C to ascertain effect of teaching through structural method.

Advantages

1. The main advantage of this design lies in the random assignment of subjects at the initial stage, which assures equivalence between groups prior to experimentation.
2. The experimenter's control over the pre-test provides an additional check on the equality of the two groups on the dependent variable.
3. This design, with its randomization, seeks to control most of the extraneous variables, like the main effects of history, maturation, pretesting, differential selection of subjects, statistical regression and mortality, that pose a threat to internal validity.

Limitations

The main limitation in using this design is a threat to its external validity due to the following reasons:

1. There is interaction between the pre-test and the experimental treatment. This interaction may change or sensitize the subjects in certain ways. Although the subjects of the experimental and control groups take the same pre-test and may experience the sensitizing effect, the subjects of the experimental group because of their increased sensitivity may respond to the experimental treatment in a particular Way. This problem can be illustrated with the help of a study of attitude change. When the first attitude scale is administered as the pre-test in such a study, it can sensitize both experimental and control subjects to the issues or the content included in the scale. But the subjects of the experimental group may not respond in the same way to the experimental treatment, given in the form of a lecture, film or the like, as the control group subjects. Therefore, the experimenter may only be able to generalize findings to pre-tested groups and not to un pre-tested ones from which the experimental subjects were chosen,
2. There is also interaction of selection of subjects and experimental treatment. The cultural background, or some other characteristics of the subjects who are selected to participate in an experiment, may make the experimental treatment more effective for them than it would be for the subjects elsewhere.

3. The interaction of experimental variable with other factors, such as history, also make it impossible to generalize the findings beyond the specific conditions or situations in which the experiment was conducted. To overcome this difficulty, the experimenter should replicate the study in different time and place settings so that generalizations concerning the findings can be made with greater confidence.
4. The reactive effects of the experimental procedures on the subjects of the experimental group or who administer the treatments may also create problems in making generalizations.

Design 6 : The Randomized Solomon Three-Groups Design

The Randomized Solomon Three-Group Design has been suggested by Solomon. It uses three groups with random assignment of subjects to groups.

This design, in addition to the experimental and control groups of Design 5, employs a second control group. The second control group is not pre-tested but is exposed to experimental treatment. It helps the experimenter to overcome the weakness inherent in Design 5. i.e., the interactive effect of pre-testing andthe experimental manipulation.

Illustration

Consider the illustration that was used in Design 5. Instead of two groups, the experimenter will frame three groups by randomly assigning subjects to groups from the population of sixth grade students. He will treat one group as the experimental group *(E)* and the other two as the control groups. The pretest T1 will be administered to the experimental group and one of the control groups (C1) to Obtain measures TE1 and TC1 respectively. The second control (C2) will not be administered any pre-test.

The experimental group (E) and the second control group (C2) will be taught through structural approach. The first control group will be taught through conventional method for the stipulated period of time. At the end of the instruction, the subjects of the three groups will be tested on the dependent variable to obtain T2E scores for the experimental group, and T1C1 and T2C2 scores for the control groups.

To assess the effectiveness of teaching English through structural approach, a comparison of mean scores of T2 (T2E, T2C1 and T2C2 will be made by using appropriate statistical test. Moreover, this comparison will also help the experimenter to assess interaction effect of pre-testing and experimental treatment (teaching experimental group through structural approach).

PARADIGM FOR THE DESIGN 6 :

The Randomized Solomon Three-Group Design

Randomly assigned	**Pre-test**	**Independent variable**	**Post-test**
Experimental group (E)	T_{1E}	Teaching through structural approach	T_{2E}
Control group (C1)	T_1C_1	Teaching through conventional method	T_2C_1
Control group (C_2)	No Pretest	No pre-Teaching through structural	T_2C_2

Advantages

1. The main advantage of this design, like Design 5, is the initial randomization which assures equivalence between the groups prior to experimentation. Therefore, it controls most of extraneous variables, such as history, maturation, pre-testing, differential selection of subjects, statistical regression and mortality.
2. The addition of second control group provides control over the interactive effect of pre-testing and the experimental treatment.

Limitations

This design does not have control over any possible contemporary effect that may occur between: (i) T1E *and* T2 E; (ii) T1C1 and T2C2

Design 7 : The Randomized Solomon Four-Group Design

This design overcomes the external validity weakness which exists in Design 5, and provides still more rigorous control by extending Design 6 toinclude one more control group.

In this design the subjects are assigned at random to the four groups. The experimental group and one of the control groups are not pre-tested. The design enables the experimenter to control and measure both the main and interaction effects of testing. Moreover, the main effects of a composite of maturation and history are controlled in this design.

Illustration

In the example illustrated in Design 5, the experimenter will frame four groups instead of two groups. He will designate one group as the experimental group (E) and the other three as control

groups. The pre-test T1 will be administered to the experimental groups and one of the control groups to obtain the measures TE1 and TC1 respectively. The other two control groups will not be pre-tested.

The experimental group (E) and the second control group will be taught through structural approach. The first and the third control groups get instruction through conventional method for a stimulated period of time. At the end of instruction, the subjects of the three groups will be measured on the dependent variable to obtain T2 E scores for the experimental group and T2C1,T2C2 and T2C3 scores for the control groups.

The effectiveness of teaching through structural approach will be ascertained by the comparison of mean scores of T2 *i.e.* T2E, T2C1, T2C2 and T2C3. For this appropriate statistical test will be used by the experimenter.

The experimenter can make several comparisons to determine the effect of teaching through structural approach. For example, if the post-test mean (T2E) of the experimental group (E) is significantly greater than the mean (T2C1) of the first control group (C1) and if the post-test mean (T2C2) of the second control group is significantly greater than that of the post-test mean (T2C2) of the third control group, the experimenter can conclude that the instruction through structural approach is more effective than the conventional teaching.

Randomly Assigned	**Pre-Test**	**Independent Variable**	**Post Test**
Experimental group (E) structural approach	T_{1E}	Teaching through	T_{2E}
Control group (C_1) conventional method	T_1C_1	Teaching through	T_2C_1
Control group (C_2) structural approach	No Pre-Test	Teaching through	T_2C_2
Control group (C_3) conventional method	No Pre-Test	Teaching through	T_2C_3

Advantages

1. In addition to the advantages of Design 6, the Design 7 provides Control over any possible contemporary effects that may occur between pre-testing and post-testing.

2. This design actually involves conducting the experiment twice, once with pre-tests and once without pre-tests. If the results of these two experiments are in agreement, the experimenter can have much greater confidence in his findings.

Limitations

1. The experiment involving Design 7 is difficult to carry out in practical situations. It involves more time and effort to conduct two experiments simultaneously and there is the problem of locating the increased number of identical subjects that would be required in the experiment.
2. Since this design involves four sets of measures for four groups and the experimenter has to make comparisons between the experimental and first control group (E and C1) and between second and third control groups (C2 and C3), there is no single elementary statistical procedure that would make use of the six available measures simultaneously. In the light of this difficulty, this design is generally recommended for a more advanced level of research.

Let Us Check Our Progress

1. Distinguish between Pre-experimental design and True-experimentaldesign.
2. Explain the value of true-experimental designs in educationalexperiments.

3. Factorial Designs

The discussion about the various designs thus far has been confined to classical single variable designs which require that an experimenter, manipulateone independent variable to produce an effect on the dependent variable. Because human nature is complex, an experimenter in educational situations cannot always fulfil these requirements. The independent variable alone may not produce the same effect as it might in interaction with another independent variable. The findings, therefore, from a one-variable design may be meaningless.

R.A. Fisher overcame this difficulty when he developed factorial designs and the statistical techniques like analysis of variance and covariance for the study of complex interactions. A factorial design enables the experimenter to evaluate or manipulate two or more variables simultaneously in order to study the effects of number of independent factors singly as well as the effects due to interactions with one another. Factorial designs vary according to the degree

of complexity depending upon the nature and purpose of the experiment. They include two or more independent variables, and each one is manipulated in two or more ways to assess both their separate (main) and their combined (interaction) effects.

Design 8 : Simple Factorial Design of 2 by 2 (2 x 2)

The simplest factorial design is 2 by 2 (2x2). In this design there are two independent variables and each of the independent variables has two values.

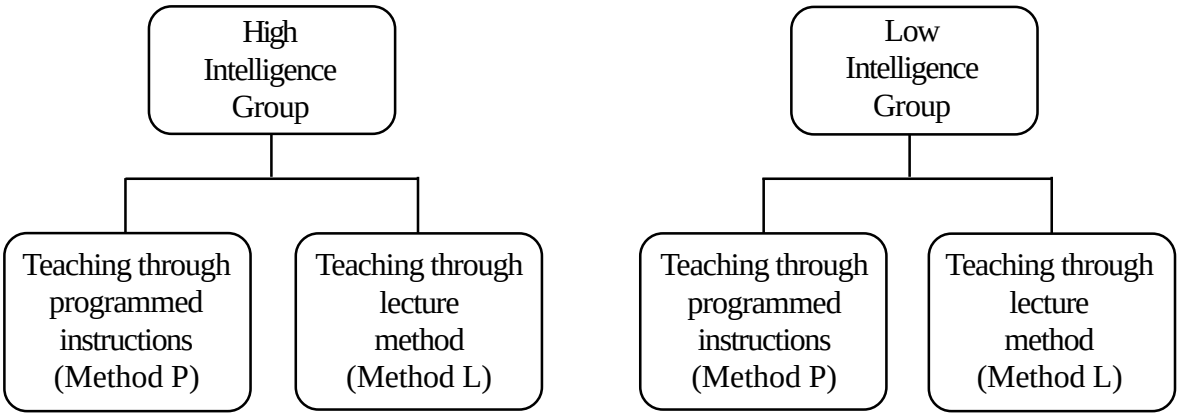
The first independent variable, which is manipulated and has two values, is called the experimental variable. The second independent variable, which is divided into levels, may be called the control variable.

Illustration

Suppose an experimenter is interested in comparing the effectiveness of programmed instruction and lecture method—methods *P* and *L* — on the achievement in social studies of sixth grade students. From the survey of related literature, he comes to believe that there may be a differential effect of these methods on different levels of intelligence of the students. On the basis of IQ, the experimenter divides the population into two groups: one group of high intelligence level and second group of low intelligence level. Suppose, he randomly selects 40 subjects from the group with high intelligence level andassigns 20 subjects to method P and 20 subjects to method L.

He adopts the same procedure for the low intelligence group. He also randomly assigns teachers to each of the group.

"In this experiment, there are two experimental treatments that is, teaching through programmed instruction and teaching through lecture method. Moreover, there are two levels of intelligence.



Therefore, there are four groups of subjects within each of the two levels of intelligence and are randomly assigned to the two treatments. The factorial design is shown in the Figure Instructions;

Both the groups are given instruction for the stipulated period. At the end of the instruction, the groups are administered an achievement test in social studies and the data are arranged in the respective categories to compute mean achievement, score for each of the four groups.

Main Effects

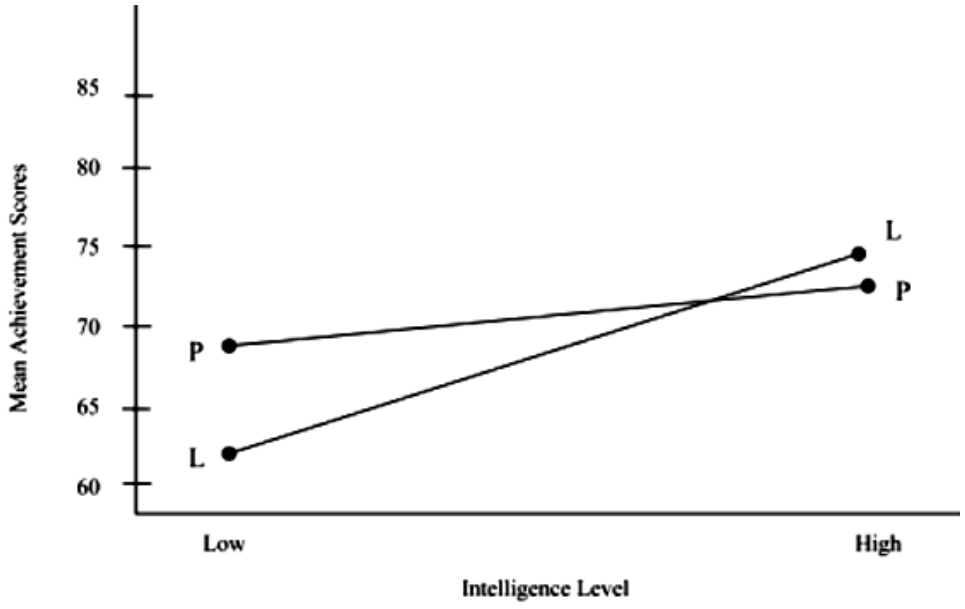
The experimenter can first determine the main effects for the two independent variables. The treatment mean scores without regard to intelligence levels indicate the main effect for treatments given in the form of teaching methods (X1). The mean of the high and low intelligence groups taught through lecture method - (Method L) and that of the groups taught through programmed instruction-(Method P). Therefore, the experimenter could conclude that teaching through programmed instruction is more effective or not than the lecture method.

This main effect for intelligence levels does not take into account any differential effect due to teaching methods.

Interaction Effect

In addition to the main effects, the experimenter is able to assess the interaction between the intelligence level and teaching method. It enables him to assess the differential effects of one of them at different levels of the other.

This interaction effect is shown in the following Figure.



If there is an interaction, the effect of the teaching method on achievement will differ for the two intelligence levels. In such situation, lines shown in the figure intersect. If there is no interaction, the effect of the teaching method on the achievement of the students will be the same for both levels of intelligence. The lines in such a case run more or less parallel. From an examination of the Figure and the Table 1, it may be inferred that teaching through the programmed instruction (Method P) is more effective than lecture method (Method L) for the low intelligence group, and the reverse is true for high intelligence group.

Advantages

1. The differences in the effect of different levels or categories of more than one variable can be studied with factorial designs simultaneously. An experimenter, therefore, can accomplish in one experiment what otherwise might require two or more-separate experiments.
2. While studying the significance of the differences in the dependent variable under the effect of the levels of any of the factors the groups become alike with respect to the different levels of the other factors and thus the groups get controlled as far as the levels of the other factors are concerned.
3. Besides studying the significance of the differences in the levels of the factors, the factorial designs provide an opportBlocky to study interactions between the factors. Edwards said that, if the interactions involving a given factor are not significant, then we obviously have a broader basis for generalizing about the main effect of the factor, because it has been tested in conjunction with variations of other factors rather than holding the other factors constant at arbitrary levels. If, on the other hand, we have a significant two-factor interaction, examination of the nature of the interaction may provide us with additional insight as to how each factor operates.

Limitations

A factorial design may include any number of independent variables with any number of levels of each. However, when the experimenter manipulates or controls too many factors simultaneously, the experiment and the statistical analysis of the data sometimes become unmanageable. Moreover, the combinations of too many variables also become artificial.

4. Quasi-Experimental Designs

The true experimental design provide full experimental control through the use of randomization procedures. There are many experimental situations in which it is not possible for the experimenter

to assign subjects randomly to groups or exercise full control over the scheduling of experimental conditions. In such situations, researcher uses quasi-experimental designs that provide as much control as possible under the existing conditions. If an experimenter uses a quasi-experimental design, it is necessary for him to know which of the variables his design may fail to control. He must also be aware of the sources that represent threats to both internal and external validity and consider them while interpreting the results of the experiment.

Some of the important quasi-experimental designs are discussed as under:

Design 9 : Non-randomized Control Group, Pretest-Posttest Design

In a school situation, it is sometimes practically not possible to upset class schedules, to gather subjects for obtaining a sufficiently large sample or to reorganize classes in order to employ randomization procedures for getting equivalent control and experimental groups. Under these circumstances, therefore, an experimenter may use pre-assembled groups, such as intact classes, for framing, experimental and control groups. The pre-assembled groups are selected and are administered pretest. The pretest scores are analysed to show that the means and standard deviations of the two groups do not differ significantly. If the pretest scores for the groups are not equivalent, the experimenter may proceed with the conduct of the experiment by using the technique of analysis of co-variance to compensate for this lack of equivalency between the groups. Once the two groups are obtained, it is advisable to use a random procedure to determine which group is to be assigned to experimental treatment and which one to the controlled condition. After determining the groups the experimental treatment is administered to the experimental group and then the posttest is given to both the groups. The difference between the pre and posttest scores are compared with the help of appropriate statistical test to ascertain the effect of the independent variable.

PARADIGM FOR DESIGN 9:

Non randomized Control–Group,Pretest-Posttest design:

Group	**Pretest**	**Independent Variable**	**Pretest**
Experimental	T1	Experimental treatment	T2
Control	T1	Controlled condition	T2

Advantages

1. The reactive effects of experimentation are more easily controlled than in Design 5. When the preassembled groups are used, subjects are less aware of the fact that they

are subjected to the experimental treatment than when the subjects are drawn from class through randomization and put into experimental sessions.

2. The experiments using this design are conveniently conducted in the school situations.

Limitations

1. The selection or subjects of the experimental and control groups may result in interaction effect between selection and certain extraneous variables like selection and maturation, and selection and history, etc.that could be mistakenly attributed to the effect of independent variable.

2. Statistical regression is a major threat to the internal validity of this design.

3. The sources of threats to external validity in this design are the same as were discussed in the Design5.

5. Time-Series Designs

There are two types of time-series designs.

Design 10 : One-Group Time-Series Design

This design is the same as Design 1 except that a series of measurement on the dependent variable are taken before and after the group is exposed to experimental treatment. The experimenter takes a number of measurements (T) on the independent variable Y, exposes the group to the experimental treatment X, and then again takes additional measurements (T) on the independent variable Y.

PARADIGM FOR DESIGN 11: One-Group Time-Series Design

Y					Y			
T_1	T_2	T_3	T_4	X	T_5	T_6	T_7	T_8

Advantages

1. This design is useful in the school settings to study the effects of. Major change in administrative policy upon various issues concerning discipline.
2. It is also useful in the study of attitude change in the students as a result of the effect produced by the introduction of a documentary film designed to change attitudes.
3. The multitesting of students in this design provides a check some sources of internal validity than in Design 1.

Limitations

1. This design fails to control the effects due to history. For example, the factors such as climatic changes, examinations may contribute to the observed change in the dependent variable.
2. Because of the repeated tests, there may be a kind of interaction effect of testing that would restrict the findings to those populations which have been subjected to repeated testing.
3. The usual statistical tests of significance may not be appropriate with a time design.

Let Us Check Our Progress

1. What do you mean by 'factor' ?
2. What is interaction effect ?
3. What is 'quasi' in quasi-experimental designs.
4. State importance of quasi-experimental designs in educational research.

LET US SUM UP

Keeping parity with the stated objectives of this Block we have been acquainted with the three main approaches to educational research namely Historical, Descriptive and Experimental and ramification of each of these three main kinds.

The central methodological of historical research lies on sources of historical data and their criticism both external and internal.

The descriptive strategies assume many formats but each kind mainly relates, analyzes, explores, predicts, examines trends, etc of numerous variables in question involved in research problems. The samples vary in size and kinds.

The experimental research strategy is per excellence the best methods of research for determining cause-effect relationship under controlled and manipulated experimental conditions at helm of affairs of the experimenter. For the precise nature of this kind of research systematic designs for experiments are needed which are constructed by the experimenter according to the nature of the problem at hand. Because educational experiments differ from laboratory experiments

of the physical sciences some threats to the validity of experiments come in for which validation of experimentation us greatly required. Moreover, some common experimental designs used in educational experiments have also been described elaborately.

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ASSIGNMENTS

1. Discuss different approaches to research in education.
2. Explain the term Historical criticism and discuss its importance in Historical research in education.
3. Give an outline expressing steps of historical research in education.
4. Describe the nature of descriptive research with suitable examples.
5. Describe the various types of descriptive research and their relative importance educational research.
6. Discuss ex-post facto research design. Comment on their possible weaknesses. Show its importance in educational research.
7. Describe the nature of experimental research, with examples.

8. Describe essential characteristics of experimental research. What do you mean by Experimental Designs.
9. Explain the different threats to the educational experiments. How can you reduce them? Give suggestions.
10. Discuss any two essential types of experimental design with their educational implications.
11. Select three different problems and explain how would you perform (a) a survey, (b) a historical research in education and (c) an educational experiment.
12. Distinguish between (i) descriptive and historical studies, (ii) descriptive and experimental researchs and (iii) quasi-experiment and true experiments in education.
13. Discuss longitudinal and cross-sectional researchs in educational field. Make a comparision between these two.
14. What is a factor ? Describe a factorical experiments in education and indicate its importances.
15. Write critical notes on :—

(a) Case study research

(b) Interrelationship studies

(c) Developmental studies.

Block-4

POPULATION &SAMPLING

CONTENT STRUCTURE :

Introduction

Objective

1.0 : Population and Sampling

4.1.1 : Population

- : Meaning of population
- : Defining population

4.1.2 : Sample and Sampling

- : Meaning of Sample and Sampling
- : Purpose of Sample
- : Meaning of representative sample
- : Size of the sample

4.1.3 : Procedures of sampling

- : Meaning of Probability
- : Probability Sampling
  - : Random sampling
  - : Stratified Random sampling
  - : Systematic sampling
  - : Area and cluster sampling
  - : Multistage sampling

- ➢ : Non-probability Sampling
  - ● : Quota sampling
  - ● : Purposive sampling
  - ● : Incidental sampling
  - ● : Snowball sampling

Let Us Sum Up

Suggested Readings

Assignments

INTRODUCTION

This Block discusses for our understanding of some technical aspects of educational research which purports to extend boundary of knowledge and strives to integrate our piecemeal observations into a generalized body of reliable and valid knowledge. For the sake of economy of observation and getting reliable knowledge with minimum error researchers over the years have formulated the conceptualization of sampling. Sampling per se is a mathematical/statistical concept though it has been much useful in social science research too. Unlike census, it takes into care of a sub set of the whole set of information/data for systematically estimating the nature and the characteristics of the whole constituting all the members (elements) of the whole with the assumption that the wholeness implies homogeneity. Hence, this concept has been now a most powerful tool as well as aid to empirical research.

OBJECTIVES

After reading this Block the learners will be able to

- define population and explain its meaning;
- understand the terms sample, sampling and sampling design;
- state the purpose and meaning of representative sample;
- explain the meaning of probability;
- differentiate between probability and non-probability sampling; and
- describe the various procedures of sampling with their merits and demerits.

Unit – 1

POPULATION AND SAMPLING

4.1.1 : POPULATION

What is 'Population' ?

Population is the entire pool from which a statistical sample is drawn. In statistics, population may refer to people, objects, events, measurements, etc. A population can, therefore, be said to be an aggregate observation of subjects grouped together by a common feature.

A population can be defined by any number of characteristics within a group, which statisticians use to draw conclusions about the subjects in a study. A population can be vague or specific. Examples of population defined vaguely include number of newly admitted student in primary section in India, Total number of teacher in Secondary education, and so on. Population can also be defined more specifically — number of newly admitted student in primary section with CBSE board in India, Total number of teacher for Bengali subject in Secondary education in West Bengal.

Most times, statisticians and researchers want to know the characteristics of every entity in a population, so as to draw the most precise conclusion possible. This is impossible most times, however, since population sets tend to be quite large. For example, total number of Secondary student in India. Since the characteristics of every individual in a population cannot be measured due to constraints of time, resources and accessibility, a sample of the population is taken.

4.1.2. What is sample?

Sampling is a process of selecting samples from a group or population to become the foundation for estimating and predicting the outcome of the population as well as to detect the unknown piece of information. A sample is the sub-unit of the population involved in your research work. There are a few advantages and disadvantages associated with the samplingprocess.

A sample is a random selection of members of a population. It is a smaller group drawn from the population that has the characteristics of the entire population. The observations and conclusions made against the sample data are attributed to the population. The information obtained from the statistical sample allows statisticians to develop hypotheses about the larger population. In statistical equations, population is usually denoted with an uppercase 'N' while the sample is usually denoted with a lowercase 'n.'

(a) Advantages of Sampling

Among the advantages are that sampling can save cost and human resources during the process of research work. In ICT, sampling does not cause much constraint such as heavy use of tools and technology in predicting the researchoutput.

(b) Disadvantages of Sampling

A researcher may not find the information about the population being studied especially on its characteristics. The research can only estimate or predict them. This means that there is a high possibility of error occurrence in the estimation made. Sampling process only enables a researcher to make estimation about the actual situation instead of finding the real truth. If you take a piece of information from your sampling population, and if your reasoning is correct, your findings should also be accurate to a certain degree.

When selecting a sample, it is very important for a researcher to consider the possibility of error during the selection process. In the field of ICT, sampling has little significance because the main purpose of ICT research is to explore or describe diversity in technology, phenomenon andissues. Another factor is the nature of ICT research which focuses on qualitative approach. Qualitative approach does not make an attempt to quantify or determine the extent of diversity. A researcher can select a sample and describe his/ her inquiry based on the research problem. Then, the study proceeds based upon the obtainedsample.

You must always remember that qualitative research has a characteristic called saturation point. Saturation point is where a researcher reaches the limit of obtaining information after many attempts to get new information. When you find you are not obtaining new information, it is

assumed you have reached the saturation point. Again, saturation point is subjective judgment which a researcheral ways decideab out it in the entire research process.

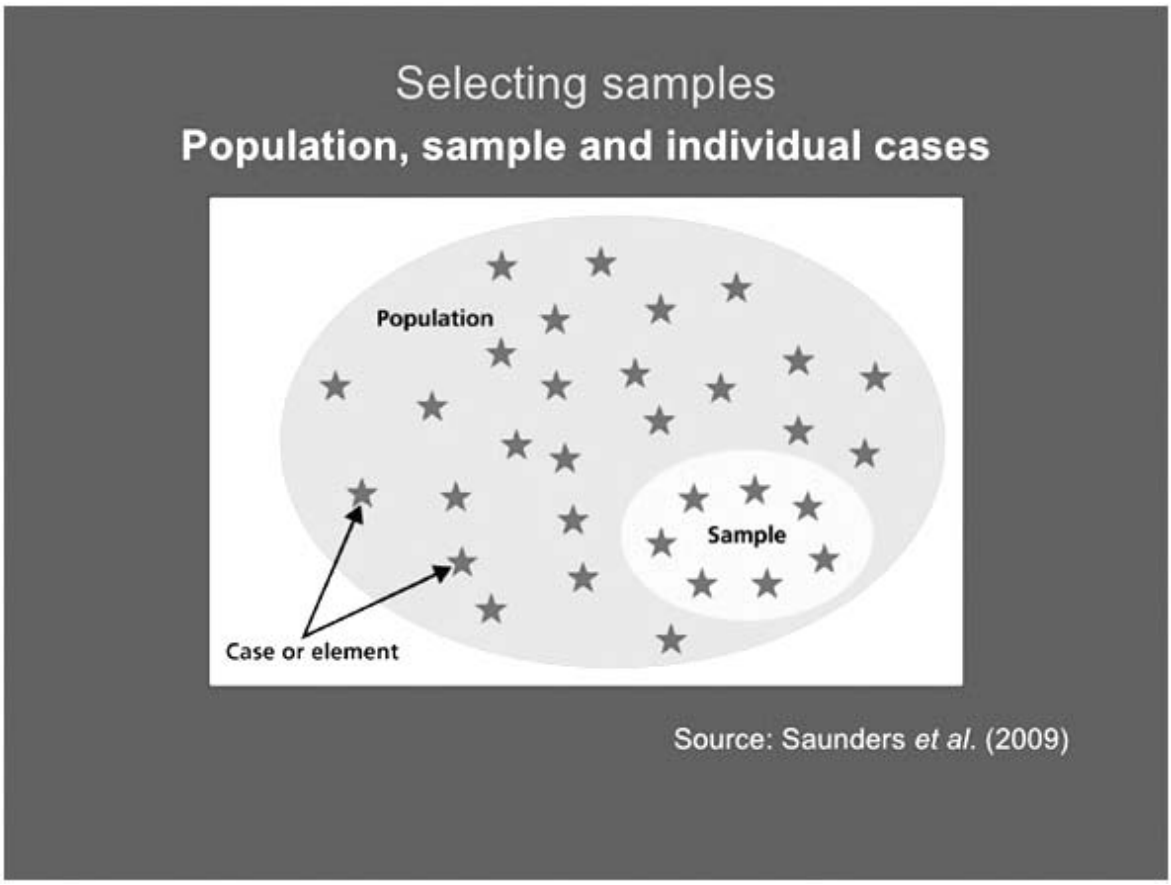


Figure 1.1

SAMPLING TERMINOLOGIES

In sampling, there are a few terminologies that a researcher should be familiar with. For example, lets say you are working in a research project on computing implementation for elderly and disabled citizens for a smart home system. You are supposed to find out the average age of senior and disabled citizens involved in your study.

(a) The community, families living in the town with smart homes form the **population** or **study population** and are usually denoted by the letter **N.**

(b) The sample group of elderly people or senior citizens and disable people in the vicinity of the smart home community is called **sample**.

(c) The number of elderly people or senior citizens and disabled people you obtain information to find their average age is called the **sample size** and is usually denoted by letter **n**.

(d) The way you select senior citizens and disabled people is called the **sampling design** or**strategy**.

(e) Each citizen or disabled people that becomes the basis for selecting your sample is called the **sampling unit** or **sampling element**.

(f) A list identifying each respondent in the study population is called **sampling frame**. In case when all element sin a sampling population cannot be individually identified, you can not have a sampling frame for the study population.

(g) Finally, the obtained findings based on the information of the respondents are called **samplestatistic.**

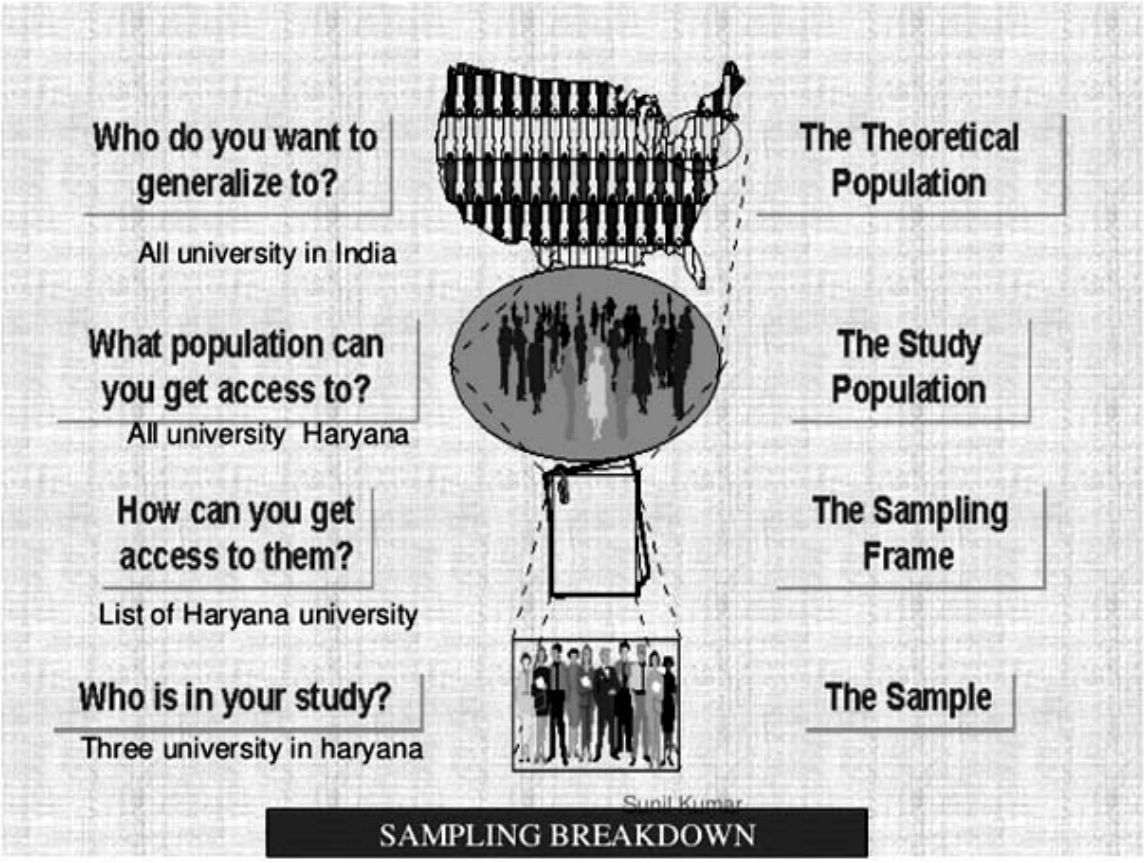


Figure 1.2

For example, let's say a denim apparel manufacturer wants to check the quality of the stitching on its blue jeans before shipping them off to retail stores. It is not cost effective to examine every single pair of blue jeans the manufacturer produces (the population). Instead, the manufacturer looks at just 50 pairs (a sample) to draw a conclusion about whether the entire population is likely to have been stitched correctly.

What is Sample Design?

A sample design is made up of two elements.

- **Sampling method**. Sampling method refers to the rules and procedures by which some elements of the population are included in the sample. Some common sampling methods are simple random sampling , stratified sampling , and cluster sampling .
- **Estimator**. The estimation process for calculating sample statistics is called the estimator. Different sampling methods may use different estimators. For example, the formula for computing a mean score with a simple random sample is different from the formula for computing a mean score with a stratified sample. Similarly, the formula for the standard error may vary from one sampling method to the next.

The "best" sample design depends on survey objectives and on survey resources. For example, a researcher might select the most economical design that provides a desired level of precision. Or, if the budget is limited, a researcher might choose the design that provides the greatest precision without going over budget.

Purpose of Sampling

To draw conclusions about populations from samples, we must use inferential statistics which enables us to determine a population's characteristics by directly observing only a portion (or sample) of the population. We obtain a sample rather than a complete enumeration (a census) of the population for many reasons. Obviously, it is cheaper to observe a part rather than the whole, but we should prepare ourselves to cope with the dangers of using samples. In this tutorial, we will investigate various kinds of sampling procedures. Some are better than others but all may yield samples that are inaccurate and unreliable. We will learn how to minimize these dangers, but some potential error is the price we must pay for the convenience and savings the samples provide.

There would be no need for statistical theory if a census rather than a sample was always used to obtain information about populations. But a census may not be practical and is almost

never economical. There are six main reasons for sampling instead of doing a census. These are; -Economy -Timeliness -The large size of many populations -Inaccessibility of some of the population -Destructiveness of the observation - accuracy

The **economic advantage** of using a sample in research Obviously, taking a sample requires fewer resources than a census. For example, let us assume that you are one of the very curious students around. You have heard so much about the famous RICE group and now that you are there, you want to hear from the insiders. You want to know what all the students at RICE think about the quality of teaching they receive, you know that all the students are different so they are likely to have different perceptions and you believe you must get all these perceptions so you decide because you want an in-depth view of every student, you will conduct personal interviews with each one of them and you want the results in 20 days only, let us assume this particular time you are doing your research RICE has near about 20,000 students and those who are helping are so fast at the interviewing art that together you can interview at least 10 students per person per day in addition to your 18 credit hours of course work. You will require 100 research assistants for 20 days and since you are paying them minimum wage of 50 rupees(R.s 50/-) per hour for ten hours 50*10= 500.00 rupees per person per day, you will require [100*(500.00*20)]1,000,000.00 rupees just to complete the interviews, analysis will just be impossible. You may decide to hire additional assistants to help with the analysis at anotherRs 1,000,000.00 and so on assuming you have that amount on your account.

As unrealistic as this example is, it does illustrate the very high cost of census. For the type of information desired, a small wisely selected sample of RICE students can serve the purpose. You don‘t even have to hire a single assistant. You can complete the interviews and analysis on your own. Rarely does a circumstance require a census of the population, and even more rarely does one justify the expense.

The time factor

A sample may provide you with needed information quickly. For example, you are a Doctor and a disease has broken out in a village within your area of jurisdiction, the disease is contagious and it is killing within hours nobody knows what it is. You are required to conduct quick tests to help save the situation. If you try a census of those affected, they may be long dead when you arrive with your results. In such a case just a few of those already infected could be used to provide the required information.

Many populations about which inferences must be made are **quite large**. For example, Consider the population of high school Students in India, a group numbering 40,000,000. The responsible agency in the government has to plan for how they will be absorbed into the different departments and even the private sector. The employers would like to have specific knowledge about the student‘s plans in order to make compatible plans to absorb them during the coming year. But the big size of the population makes it physically impossible to conduct a census. In such a case, selecting a representative sample may be the only way to get the information required from high school students.

The partly accessible populations

There are Some populations that are so difficult to get access to that only a sample can be used. Like people in Jail, like crashed aero planes in the deep seas, etc. The inaccessibility may be economic or time related. Like a particular study population may be so costly to reach like the population of planets that only a sample can be used. In other cases, a population of some events may be taking too long to occur that only sample information can be relied on. For example natural disasters like a flood that occurs every 100 years.

The destructive nature of the observation

Sometimes the very act of observing the desired characteristic of a unit of the population destroys it for the intended use. Good examples of this occur in quality control. For example to test the quality of a fuse, to determine whether it is defective, it must be destroyed. To obtain a census of the quality of a lorry load of fuses, you have to destroy all of them. This is contrary to the purpose served by quality-control testing. In this case, only a sample should be used to assess the quality of the fuses

Accuracy and sampling

A sample may be more accurate than a census. A sloppily conducted census can provide less reliable information than a carefully obtained sample.

4.1.3 : Procedure of selecting representative and adequate sample

Most of the new research ersal ways wond erabout the sample size that needs to be selected. You must remember that the larg erthe sample for your research, the better out come

you can evaluate attheend of the research process. The larger the sample, the more likely the sample mean and standard deviation will become a representation of the population mean and standard deviation. For instance, in IT survey, the sample size required depends on the statistical outcome needed for the findings. The following are some guide lines to decide on how largea sample should be:

- When the selected sample needs to be segregated into smaller clusters involving comparisons of clusters, a large sample would beappropriate.
- The longer the duration of a study, the higher the number of subjects that will drop out. To reduce attrition, a researcher should keep demands on subjects to the minimum, to fully inform the subject about the study and research, and make frequent communication with subjects to maintain the interest.
- A larger sample is needed when the population is highly heterogeneous on the variables being studied so that different characteristics can be identified. If members of the population is less, then a small sample size would do to obtain the necessarycharacteristics.

Gay and Airasian (2003) also offered similar guide lines in their work for selecting sample size in a research study. In their work, it is mentioned that beyond a certain point (at about 5,000 respondents or more), the population size is almost irrelevant and a sample size of 400 should be adequate. To some extent, the size of sample depends on how homogenous or heterogenous the population is and how alike or different its members are with respect to the characteristics of particular researchinterest.

Selecting a Sample

The objective of selecting a sample is to achieve maximum accuracy in your estimation within a given sample size and to avoid bias in the selection of the sample. This is important as bias can attack the integrity of facts and jeopardise your research outcome.

Table 1.1 explains how bias can occur in sample selection.

Table 1.1: Reasons Bias Occurs in Sample Selection

No.	Reason(s)
1.	Sampling done using non-random method (we will see sampling designs in the next section) which can be influenced by human choices.
2.	Sampling frame like list, indexing and records which serve as the platform of selection does not cover the sampling population accurately or completely.
3.	A section of sampling population refuses to co-operate.

There are also factors that may influence the degree of certainty in inferences drawn from a sample for research study. As we know, the size of samples influence findings such that large samples have more certainty than those based on smaller ones. Therefore, the larger the sample, the researcher will obtain more accurate findings.

Another factor is the extent of variation in the sampling population where the greater the variation in the population will have greater uncertainty with respect to its characteristics. Therefore, it is crucial for a researcher to bear these in mind especially when selecting a sample for her/his respective researchwork

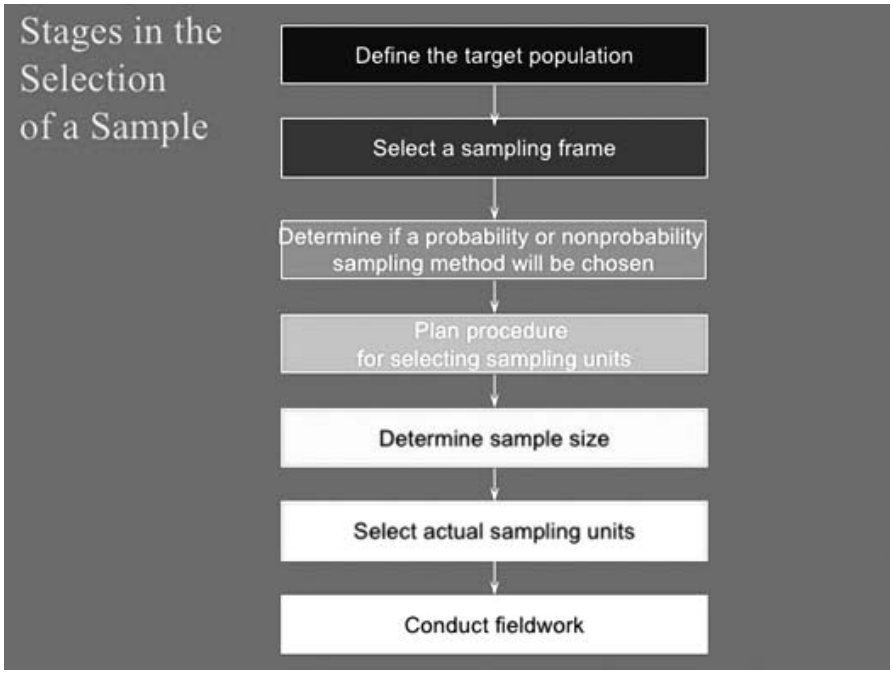


Figure 1.3

Sample Design Methods

Sample design methods generally refer to the technique used to select sample units for measurement (e.g., select individuals from a population or locations to sample within a study area). Before sample design methods can be considered, it is necessary to have thoroughly defined the population, study area, sampling unit, and sampling objective. All of these will have an impact on which sample design methods are suitable. Selection of a suitable sample design method ensures that the samples you invest your time and money into collecting can support the inferences you want to make. Use of a sample design method that is not appropriate can lead to samples that are biased with respect to your assessment or monitoring objectives. In this case, inference is valid only for samples/sites that were measured, and not the larger area/population.

Sample design methods are typically divided into two types: Non-random and random methods. These two types and commonly-applied methods within each are discussed below. It is not uncommon for sample design for a single project to include aspects of random and non-random selection. For example, sample site locations may be selected randomly within a study

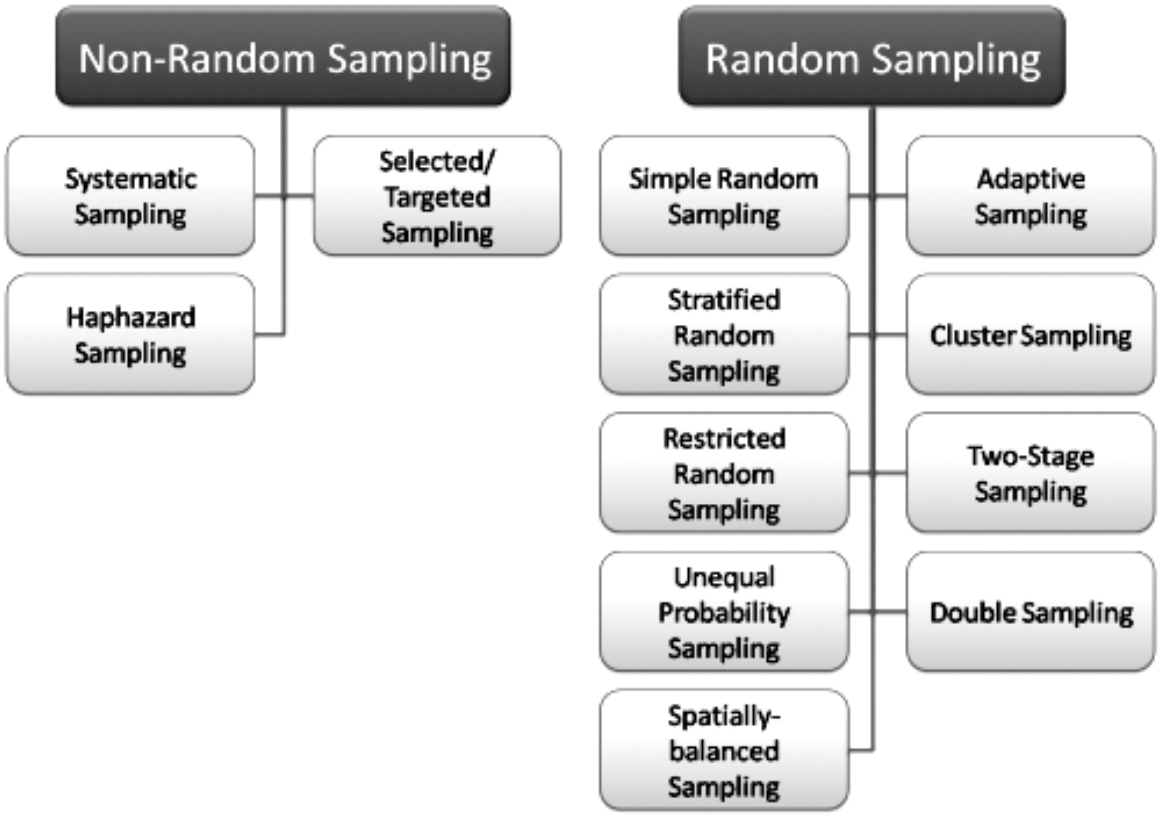


Figure 1.4 Common sample design methods.

area, but the transects or plots to be sampled within the site may be located systematically. In this case, the randomization of the site locations can preserve the statistically-unbiased nature of the overall sample design. However, just because randomization is included at some point in the sample design doesn't guarantee good sample design. Selecting site locations non-randomly based on local knowledge and then randomizing the locations of plots within each site will not result in a statistically unbiased sample. Attention must be paid to where the randomization occurs relative to the distribution of the population being sampled to ensure that the overall sample design maintains the desired statistical properties

Non-Random Sampling Methods

Non-random sampling methods select locations for sampling by either: according to regular (i.e., systematic) patterns, targeting specific features or events, using personal or anecdotal information, or without any specific plan. Care must be exercised when using non-random sample selection methods because the samples may not be representative of the entire population. If this is the case, then inference cannot extend beyond the set of sampling units. Some common non-random sample design techniques are discussed below. Unless otherwise stated, the primary reference for these discussions was Elzinga et al. (2001).

Systematic Sampling

Systematic sampling is the selection of units for sampling or the placement of sampling locations within an area according to a regularly-repeating pattern. Examples of systematic sampling are: locating sample sites on a 1km grid within a pasture, taking measurements every meter along a transect, or orienting transects along cardinal directions. Systematic techniques are commonly used to locate sub-plot sampling sites (e.g., points, transects, frames) within a sampling site where the location of the sampling site has been selected randomly. Alternatively, larger sampling units can be selected systematically and then the location of the specific sampling unit randomly selected within the larger unit (i.e., a form of two-stage sampling or restricted random sampling – see below). This technique is often used with regional- or national-scale assessment and monitoring programs like the NRCS Natural Resource Inventory (NRI).

Advantages of systematic sampling are:

- it allows even sampling across an area
- it is quick and easy to implement

- it is often more efficient than random sampling, and can perform as well or better than random methods in some situations (see Elzinga et al. (2001), p125)
- When combined with an appropriate randomization method, the data can be analyzed as if it were a random design

Disadvantages of systematic sampling are:

- it can yield biased data if there are regularly-occurring patterns in the population being sampled. For instance, when sampling for road impacts, transects oriented along cardinal directions may yield biased estimates of road impacts because many roads are oriented along cardinal directions too (M. Duniway, pers. comm.)
- systematic sampling can miss or under-represent small or narrow features of a landscape if the sampling interval is too large.

Selected/Targeted Sampling

Targeted or selected sampling is common in rangeland assessment and monitoring. With this method, areas are subjectively selected for sampling according to a particular objective. The subjective nature of selecting the sampling locations, however, can easily introduce bias into the results and preclude being able to assess sampling errors. For these reasons, it is not appropriate to extent inference of sampling results beyond the elements sampled to the whole population. For a random sampling method that can, in some cases, achieve the same end as targeted sampling (i.e., selection of areas representative of some specified condition), see Unequal Probability Sampling below.

The *key area* concept is a form of non-random targeted sampling. The idea of key areas is to select locations for sampling that are representative of either a larger area (e.g., an allotment or pasture) or to critical areas (e.g., high impact sites or locations where rare species occur). Assessment and monitoring then takes place in these locations. Because statistical inferences can only be made to the key areas that are sampled, and because sampling results from different key areas cannot be averaged, objectives should be defined specific to the key areas being measured.

Targeted sampling is also common in remote-sensing applications. When creating a land-cover or vegetation-class map from remotely-sensed imagery, field observations are often needed to "train" the classification algorithm to the classes being mapped. In these cases, statistical inference of the field observations to the entire population is not an objective of the sampling. Areas are selected in a targeted manner to represent the range of variability within each class and

for ease in data collection in the field. Use of a randomization method of sample design for this type of remote sensing application would be an inefficient way to get the needed data.

Advantages of targeted sampling

- allows for efficient collection of data in situations where statistical inference is not required

Disadvantages of targeted sampling

- Statistical inference beyond the units actually sampled is invalid
- Inability to combine data from different key areas

Haphazard Sampling

Haphazard sampling occurs when samples are collected in the field without any pre-determined method for deciding where to sample. In essence, this approach is the *de facto* method when no other method was used. It probably could go without saying that haphazard sampling leads to data that cannot be used to make inferences to other areas or a larger population, and this method should be avoided for assessment and monitoring. Data collected with this technique is considered anecdotal information.

Random Sampling Methods

Random sampling methods rely on randomization at some point in the sample design process in an attempt to achieve statistically unbiased samples. Random sampling methods are a form of design-based inferencewhere 1): the population being measured is assumed to have fixed parameters at the time they are sampled, and 2) that a randomly-selected set of samples for the population represents one realization of all possible sample sets (i.e., the sample set is a random variable). There are many different random sampling techniques. Some of the most common techniques are described below. Unless otherwise stated, the primary source for information on these methods is Elzinga et al. (2001).

Simple Random Sampling

Simple random sampling is the foundation for all of the other random sampling techniques. With this approach, all of the sampling units are enumerated and a specified number of sampling units are selected at random from all the sampling units. Selection of samples for simple random sampling follow two criteria:

1. each sampling unit has the same likelihood of being selected, and
2. the selection of one sampling unit does not influence the selection of any other sampling unit.

Simple random selections are easy and fast to implement using a variety of GIS, statistical, or spreadsheet programs.

Advantages of simple random sampling

- it is the easiest of the random methods to implement
- the statistical formulas for estimating population parameters are well known and easy to implement

Disadvantages of simple random sampling

- it does not take into account variability caused by other measurable factors (e.g., aspect, soils, elevation)
- it can yield high variance estimates and make detection of differences difficult if the population being sampled is not evenly distributed throughout the sample area.
- it can be an inefficient means of sampling because of the time required to visit all of the sample sites
- by chance, some areas may be heavily sampled while other areas are not sampled at all

Stratified Random Sampling

Stratification is the process of dividing a set of sampling units into one or more subgroups (i.e., strata) prior to selection of units for sampling. Sampling units are then selected randomly within each stratum. The purpose of using stratification is to account for variability in a population that can be explained by another variable (e.g., vegetation type, aspect, soil type). Therefore, strata should be defined so that the population conditions are similar within the strata.

Sampling effort does not need to be equally allocated between strata. It is common for sampling intensity to be varied between strata based on either the variability of the population parameter within the strata or the size of the strata.

Advantages of stratified random sampling

- it increases efficiency of sampling over simple random sampling when the variable of interest responds differently to some clearly definable features.

Disadvantages of stratified random sampling

- the formulas for estimating population parameters and conducting hypothesis tests are more complicated than for simple random selection.
- each stratum should be relatively homogeneous with regard to the population parameter being measured.

Restricted Random Sampling

In restricted random sampling, the area to be sampled is divided up into large segments based on the number of sampling units needed to meet monitoring objectives. Within each segment, a single sampling unit is then selected (i.e., a single sampling location is selected) at random. The samples are analyzed as if they were collected using the simple random sampling technique. This technique helps ensure good coverage of points within a study area. Many GIS random-point-generation tools include a derivation of this technique – enforcing a minimum distance between sample points.

Restricted random sampling has similarities to both systematic sampling and stratified random sampling. The distinctions however, are that: 1) while the segments into which the population was divided are technically a form of stratification, they are arbitrary with respect to the system and only one sample is collected per segment, and 2) the area need not be divided into equally spaced or shaped segments like would be the case in systematic sampling.

Advantages of restricted random sampling are:

- good dispersion of sampling points across an area
- more efficient sampling than simple random sampling
- Easy to implement with GIS tools

Disadvantages of restricted random sampling are:

- it is possible for sample points to end up close to each other (i.e., each on opposite sides of a shared segment boundary) and leave a large area unsampled.

Unequal Probability Sampling

One of the main assumptions for simple random sampling is that all sampling units have an equal likelihood of being selected for sampling. However, as discussed with a number of the other sample design techniques, this can lead to inefficiencies in sampling, especially if the sampling objective is to focus on a subset of the population or there are logistical constraints in getting to some portions of the total area. In these cases, non-random targeted (e.g., key area) sampling becomes tempting. An alternative to simple random sampling that can help address some of these issues is sampling with unequal selection probabilities.

Basically, this method works in a similar manner to simple random sampling except that the sampling units have different probabilities of being selected. How the selection probabilities are determined and assigned to the sampling units is not as important as is the knowledge of the selection probability assigned to EVERYsampling unit. Accordingly, samples can be weighted toward “representative” or “critical” areas or assigned to give preference to sampling units that are within easily accessible regions of the study area. Preferentially selecting units for sampling introduces bias into the sampling results, but the fact that we know the likelihood associated with selecting each sampling unit allows for the bias to be corrected for. In essence, individual samples are weighted according to their selection probability – samples with a high likelihood of being selected have a low weight, and samples that are unlikely to be selected carry a higher weight.

Sampling with unequal selection is commonly applied in forestry surveys as sampling with probability proportional to size. Consider the example of needing to estimate the total board-feet of timber in a stand. Board-feet is correlated to diameter of the tree, so assigning selection probabilities according to the diameter of the trees in the stand allows the observer to measure a few large trees and expand those results to the entire stand using a correction (a.k.a. expansion factor) calculated from the selection probabilities.

The probability-proportional-to-size concept can be generalized to probability proportional to a covariate. In rangeland situations, many of the parameters of interest are correlated with different remote-sensing products. These image products can be used to calculate selection probabilities. For instance, if “key area” samples (i.e., representative of a larger area) are desired, a greenness index such as NDVI could be used to assign selection probabilities such that extreme conditions received low selection probabilities and the most typical areas received the highest selection probabilities.

Advantages of Unequal Probability Sampling

- Allows for more efficient random sampling than simple random sampling does
- Allows for sampling to be focused on areas/conditions of interest or according to logistical constraints.
- Bias introduced by targeted sampling can be corrected for

Disadvantages of Unequal Probability Sampling

- Selection probabilities must be defined for *every* area that possibly could be sampled
- The calculations for correcting for bias are complicated and not many statistical programs contain easy-to-use tools for handling unequal probability sampling data yet.

See Horvitz and Thompson (1952), Saxen et al. (1986), Rosen (1997) and Berger (2004) for more information

Adaptive Sampling

Adaptive sampling refers to a technique where the sample design is modified in the field based on observations made at a set of pre-selected sampling units. Perhaps the best way to describe adaptive sampling is through an example. Consider sampling for the presence or abundance of rare plants. A random selection of sample units will yield many sample units where the plant is not detected, but the rare plant is likely to occur in sample units nearby to those units where it was detected. With adaptive sampling, the detection of the rare plant at one site triggers the selection and sampling of additional nearby sites that were not originally selected as part of the sample set. Thus the biggest difference between adaptive sampling and many other random selection techniques is that the observed conditions at one sampling unit influence the selection of other sampling units.

One typical implementation of adaptive sampling is that whenever a specified event occurs (e.g., detection of a target species, measurement over a specified threshold), all of the neighboring sample units are searched/sampled. This continues until no new detections occur.

Adaptive sampling introduces bias into the samples that must be corrected for. More specifically, adding additional units to the sample that contain high values for the parameter being measured will result in overestimation of the population mean (Thompson 1992). Various techniques are available for correcting for the bias introduced by adaptive sampling.

Advantages of Adaptive Sampling

- It is an efficient method for sampling rare species or events
- It works well with populations that are naturally aggregated or clustered and does not require the exact nature of the aggregation to be known ahead of time

Disadvantages of Adaptive Sampling

- Population estimates must be corrected for bias.
- Calculations for population parameter estimates and hypothesis tests are more complicated than for simpler sampling designs.
- Estimation of sample size requirements is difficult.

See Thompson (1992), Thompson and Thompson and Seber (1996), and Prather (2006) for details on adaptive sampling.

Cluster Sampling

Cluster sampling is a technique that can be applied when it is not possible or desirable to take a random sample from the entire population. With cluster sampling, the known or accessible sampling units are grouped into clusters. A random selection of clusters is then made and each sampling unit is measured within each of the selected clusters. Cluster sampling is typically applied to monitoring of rare plants or invasive species when the objective is to estimate a property related to individual plants (e.g., mean height, number of flowers per plant).

Advantages of cluster sampling are:

- It can be less expensive and more efficient to sample all of the sampling units within a cluster than to sample an equal number of units across the entire population.
- Cluster sampling can be an efficient choice when clusters naturally occur and when the clusters are similar to each other but have a high degree of internal variability

Disadvantages of cluster sampling are:

- all elements within the selected clusters must be measured. If clusters are large or contain a large number of elements, then two-stage sampling may be more efficient.
- It can be difficult to determine how many clusters to sample versus how large the clusters should be.

- Analysis of sample data collected using a cluster analysis design is more complex than other methods.

Two-Stage Sampling

In two-stage sampling, elements of the population are grouped together into large groups called *primary sampling units.* The individual sampling units within each primary sampling unit are called secondary sampling units. A random selection of the primary sampling units is made, and then a selection of *secondary sampling units* is made (usually random, but can be systematic) within each of the selected primary sampling units.

Two-stage sampling is a powerful sample design method for systems that are hierarchical in nature. For example, allotments within a BLM District could be considered primary sampling units. A random selection of allotments could be made and then sample sites selected within the selected allotments. This design would allow for inference at the allotment level (e.g., average allotment condition) as well as at the district level.

The concept of two-stage sampling can be generalized to multi-stage sampling where there are more than two hierarchical levels for sampling. However, as the number of stages increases, sample size requirements go up and degrees of freedom for statistical hypothesis testing decrease. Accordingly, the number of stages is generally small (i.e., two or three).

Advantages of two-stage sampling are:

- It is often more efficient to sample secondary sampling units within a limited number of primary sampling units than to sample the same number of secondary units randomly spread across a landscape.
- Inferences can be made at multiple scales (i.e., the scale of the primary sampling unit, and the entire population).

Disadvantages of two-stage sampling are:

- Calculation of sample statistics is more complicated than with other simpler sample designs.

Double Sampling

Double sampling (also called two-phase sampling – not to be confused with two-stage sampling above) involves estimating two correlated variables. This method would be used in cases where the primary variable of interest is expensive or difficult to measure, but a secondary

covariate is easily measurable. A small number of sample units are randomly selected and both variables are measured at these locations. The secondary variable only is then measured at a larger number of randomly selected points. The success of a double-sampling sample design depends on how well correlated the primary and secondary variables are.

Double-sampling is commonly used in estimation of above-ground biomass in rangelands. Clipping and weighting of vegetation is expensive and tedious. With the double-sampling method, ocular estimates of biomass are made for a small number of quadrats, and the vegetation on those quadrats is then clipped and weighed. For the remaining quadrats, only the ocular estimates are performed.

Advantages of double sampling are:

- it can be much more efficient than directly sampling the primary variable if the secondary variable can be measured quickly and it highly correlated with the primary variable.

Disadvantages of double sampling are:

- the formulas for data analysis and sample size estimation are much more complex than for some other methods.

Spatially-balanced Sampling

Spatially-balanced refers to samples that are evenly distributed across a study area. Spatially balanced sampling is much more efficient than simple random sampling if the population being sampled is more-or-less evenly distributed across the area being sampled. While a systematic sample design can achieve complete spatial balance, it lacks randomization that is desirable in statistical sample designs and it is difficult to apply when the units being selected for sampling are not contiguous within the study area (e.g., selecting lakes or wetlands to sample).

There are several different techniques for creating spatially-balanced sample designs, but one of the most common ones is the Generalized Random-Tessellation Stratified (GRTS) design described by Stevens and Olsen (2004). For sampling within an area, the GRTS technique works as follows:

1. The sampling units are assigned an order according to a recursive, hierarchical randomization process (see figure for example and explanation). This process preserves the spatial relationships of the sample units.
2. The sampling units are then arranged in order (think of arranging them in a line)

3. The line of sampling units is divided into a number of equal-length segments depending on how many total samples are desired

4. One sampling unit from each segment is selected for sampling.

The GRTS method produces samples that are spatially-balance. It also has the interesting property that each subsequent sample location selected using GRTS will be spatially-balanced with respect to the previous points. The benefit of this is that an “oversample” of sampling units can be drawn (e.g., draw a sample of 30 units when you only intend to sample 20) and if one unit needs to be thrown out for some reason (e.g., access restrictions), then the next selected unit (sample unit 21 in the example above) will maintain the statistical properties of the original 20 sample units.

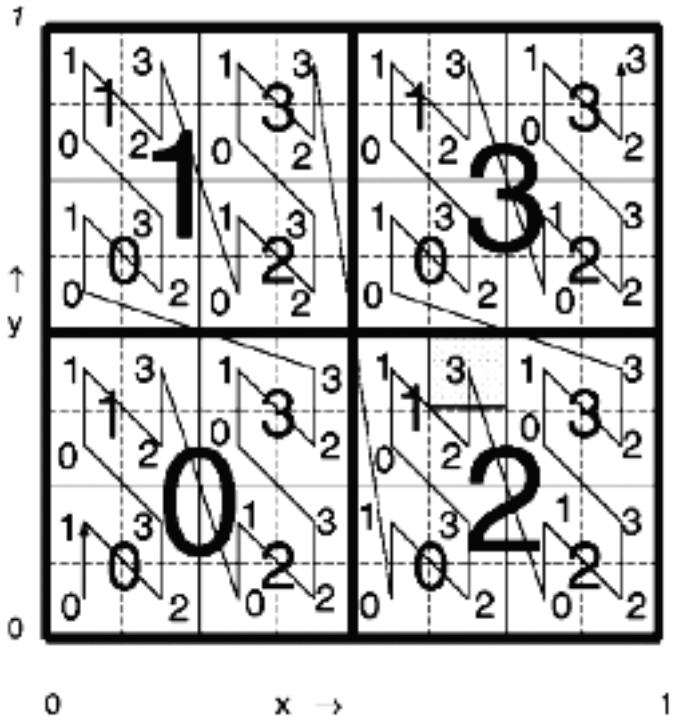


Figure 1.5 GRTS METHOD

Image source: Stevens and Olsen (2004)

An example of a recursive, hierarchical randomization process applied to an area to be sampled. This process is used to assign the random, but spatially-balanced order to the sampling units. The area is first split into four quadrats. Each quadrat is then split into four smaller quadrats, and so on until there is only one sampling unit per quadrat (or until the size of the quadrats equals

the desired distance between samples). The sample units are then ordered according to the numbering assigned to the quadrats. In this example, the main quadrats and the sub-quadrats have the same number ordering, but in practice, random numbering is assigned for each quadrat level.

Advantages of Spatially-Balanced Sampling (using GRTS)

- It is a probability-based sampling technique that maintains good spatial balance
- Oversampling can be used to provide "fall-back" sampling locations in case the original sample locations need to be thrown out.
- Can be used for sampling areas, but also can be used with linear features or features that are not contiguous
- Supports sampling with unequal selection probabilities

Disadvantages of Spatially-Balanced Sampling (using GRTS)

- It is a complicated technique to understand and difficult to implement
- If the estimation of spatial autocorrelation of population parameters is desired (i.e., for geostatistical techniques), spatially-balanced sampling is inefficient

In another way :

Sampling Technique

Probability Sampling	**Non-probability Sampling**
■ Simple random	■ Quota sampling
■ Stratified random	■ Snowball sampling
■ Cluster sampling	■ Judgment / Purposive sampling
■ Systematic sampling	■ Convenience sampling
■ Multi stage sampling	

1. PROBABILITY SAMPLING

Probability sampling means that every item in the population has an equal chance of being included in sample. One way to undertake random sampling would be if researcher was to

construct a sampling frame first and then used a random number generation computer program to pick a sample from the sampling frame (Zikmund, 2002). Probability or random sampling has the greatest freedom from bias but may represent the most costly sample in terms of time and energy for a given level of sampling error (Brown, 1947).

1.1. SIMPLE RANDOM SAMPLING

The simple random sample means that every case of the population has an equal probability of inclusion in sample. Disadvantages associated with simple random sampling include (Ghauri and Gronhaug, 2005):

- A complete frame (a list of all units in the whole population) is needed;
- In some studies, such as surveys by personal interviews, the costs of obtaining the sample can be high if the units are geographically widely scattered;
- The standard errors of estimators can be high.

1.2. SYSTEMATIC SAMPLING

Systematic sampling is where every nth case after a random start is selected. For example, if surveying a sample of consumers, every fifth consumer may be selected from your sample. The advantage of this sampling technique is its simplicity.

1.3. STRATIFIED RANDOM SAMPLING

Stratified sampling is where the population is divided into strata (or subgroups) and a random sample is taken from each subgroup. A subgroup is a natural set of items. Subgroups might be based on company size, gender or occupation (to name but a few). Stratified sampling is often used where there is a great deal of variation within a population. Its purpose is to ensure that every stratum is adequately represented (Ackoff, 1953).

1.4. CLUSTER SAMPLING

Cluster sampling is where the whole population is divided into clusters or groups. Subsequently, a random sample is taken from these clusters, all of which are used in the final sample (Wilson, 2010). Cluster sampling is advantageous for those researchers whose subjects are fragmented over large geographical areas as it saves time and money (Davis, 2005). The stages to cluster sampling can be summarized as follows:

- Choose cluster grouping for sampling frame, such as type of company or geographical region
- Number each of the clusters
- Select sample using random sampling

1.5. MULTI-STAGE SAMPLING

Multi-stage sampling is a process of moving from a broad to a narrow sample, using a step by step process (Ackoff, 1953). If, for example, a Malaysian publisher of an automobile magazine were to conduct a survey, it could simply take a random sample of automobile owners within the entire Malaysian population. Obviously, this is both expensive and time consuming. A cheaper alternative would be to use multi-stage sampling. In essence, this would involve dividing Malaysia into a number of geographical regions. Subsequently, some of these regions are chosen at random, and then subdivisions are made, perhaps based on local authority areas. Next, some of these are again chosen at random and then divided into smaller areas, such as towns or cities. The main purpose of multi-stage sampling is to select samples which are concentrated in a few geographical regions. Once again, this saves time and money.

2. NON PROBABILITY SAMPLING

Non probability sampling is often associated with case study research design and qualitative research. With regards to the latter, case studies tend to focus on small samples and are intended to examine a real life phenomenon, not to make statistical inferences in relation to the wider population (Yin, 2003). A sample of participants or cases does not need to be representative, or random, but a clear rationale is needed for the inclusion of some cases or individuals rather than others.

2.1. QUOTA SAMPLING

Quota sampling is a non random sampling technique in which participants are chosen on the basis of predetermined characteristics so that the total sample will have the same distribution of characteristics as the wider population (Davis, 2005).

2.2. SNOWBALL SAMPLING

Snowball sampling is a non random sampling method that uses a few cases to help encourage other cases to take part in the study, thereby increasing sample size. This approach

is most applicable in small populations that are difficult to access due to their closed nature, e.g. secret societies and inaccessible professions (Breweton and Millward, 2001).

2.3. CONVENIENCE SAMPLING

Convenience sampling is selecting participants because they are often readily and easily available. Typically, convenience sampling tends to be a favored sampling technique among students as it is inexpensive and an easy option compared to other sampling techniques (Ackoff, 1953). Convenience sampling often helps to overcome many of the limitations associated with research. For example, using friends or family as part of sample is easier than targeting unknown individuals.

2.4. PURPOSIVE OR JUDGMENTAL SAMPLING

Purposive or judgmental sampling is a strategy in which particular settings persons or events are selected deliberately in order to provide important information that cannot be obtained from other choices (Maxwell, 1996). It is where the researcher includes cases or participants in the sample because they believe that they warrant inclusion.

TABLE :
STRENGTHS AND WEAKNESSES OF SAMPLING TECHNIQUES
SOURCE: (MALHOTRA AND BIRKS, 2006)

Technique	**Strengths**	**Weaknesses**
Convenience sampling	Least expensive, least time-consuming, most convenient	Selection bias, sample not representative, not recommended by descriptive or casual research
Judgment sampling	Low-cost, convenient, not time-consuming, ideal for exploratory research design	Does not allow generalization, subjective
Quota sampling	Sample can be controlled for certain characteristics	Selection bias, no assurance
Snowball sampling	Can estimate rare characteristics	Time-consuming
Simple random sampling	Easily understood, results projectable	Difficult to construct sampling frame, expensive, lower precision, no assurance of representativeness

Systematic sampling	Can increase representativeness, easier to implement than simple random sampling, sampling frame not always necessary	Can decrease representativeness
Stratified sampling	Includes all important sub-population, precision	Difficult to select relevant stratification variables, not feasible to stratify on many variables, expensive
Cluster sampling	Easy to implement, cost-effective	Imprecise, difficult to compute an interpret results

Determine Sample Size:

In order to generalize from a random sample and avoid sampling errors or biases, a random sample needs to be of adequate size. What is adequate depends on several issues which often confuse people doing surveys for the first time. This is because what is important here is not the proportion of the research population that gets sampled, but the absolute size of the sample selected relative to the complexity of the population, the aims of the researcher and the kinds of statistical manipulation that will be used in data analysis. While the larger the sample the lesser the likelihood that findings will be biased does hold, diminishing returns can quickly set in when samples get over a specific size which need to be balanced against the researcher's resources (Gill et al., 2010). To put it bluntly, larger sample sizes reduce sampling error but at a decreasing rate. Several statistical formulas are available for determining sample size.

There are numerous approaches, incorporating a number of different formulas, for calculating the sample size for categorical data.

n= p (100-p)z2/E2

n is the required sample size

P is the percentage occurrence of a state or condition

E is the percentage maximum error required

Z is the value corresponding to level of confidence required

There are two key factors to this formula (Bartlett et al., 2001). First, there are considerations relating to the estimation of the levels of precision and risk that the researcher is willing to accept:

E is the margin of error(the level of precision) or the risk the researcher is willing to accept (for example, the plus or minus figure reported in newspaper poll results). In the social research a 5% margin of error is acceptable. So, for example, if in a survey on job satisfaction 40% of respondents indicated they were dissatisfied would lie between 35% and 45%. The smaller the value of E the greater the sample size required as technically speaking sample error is inversely proportional to the square root of n, however, a large sample cannot guarantee precision (Bryman and Bell, 2003).

Z concern the level of confidence that the results revealed by the survey findings are accurate. What this means is the degree to which we can be sure the characteristics of the population have been accurately estimated by the sample survey. Z is the statistical value corresponding to level of confidence required. The key idea behind this is that if a population were to be sampled repeatedly the average value of a variable or question obtained would be equal to the true population value. In management research the typical levels of confidence used are 95 percent (0.05: a Z value equal to 1.96) or 99 percent (0.01: Z=2.57). A 95 percent level of confidence implies that 95 out of 100 samples will have the true population value within the margin of error (E) specified.

The second key component of a sample size formula concerns the estimation of the variance or heterogeneity of the population (P). Management researchers are commonly concerned with determining sample size for issues involving the estimation of population percentages or proportions (Zikmund, 2002). In the formula the variance of a proportion or the percentage occurrence of how a particular question, for example, will be answered is P(100-P). Where, P= the percentage of a sample having a characteristic , for example, the 40 % of the respondents who were dissatisfied with pay, and (100-P) is the percentage (60%) who lack the characteristic or belief. The key issue is how to estimate the value of P before conducting the survey? Bartlett et al. (2001) suggest that researchers should use 50% as an estimate of P, as this will result in the maximization of variance and produce the maximum sample size (Bartlett et al., 2001).

The formula for determining sample size, of the population has virtually no effect on how well the sample is likely to describe the population and as Fowler (2002) argues, it is most unusual for it (the population fraction) to be an important consideration when deciding on sample size (Fowler, 2002).

In below table presents sample size that would be necessary for given combinations of precision, confidence levels, and a population percentage or variability of 50% (the figure which many researchers suggest to maximize variance).

TABLE : SAMPLE SIZE BASED ON DESIRED ACCURACY

SOURCE: (GILL ET AL., 2010)

	Variance of the population P = 50%					
	Confidence level = 95% Margin of error			Confidence level = 99% Margin of error		
Population Size	5	3	1	6	3	1
50	44	48	50	46	49	50
75	63	70	74	67	72	75
lOO	79	91	99'	87	95	99
150	108	132	148	122	139	149
200	132	168	196	154	180	198
250	151	203	244	181	220	246·
300	168	234	291	206	258	295
400	196	291	384	249	328	391
500	217	340	475	285	393	485
600	234	384-	565	314	452	579
700	248	423	652	340	507	672
800	260	457	738	362	557	763
1000	278	516	906	398	647	943
1500	306	624	1297	469	825	1375
2000	322	696	1655	497	957	1784
3000	341	787	2286	541	1138	2539
5000	357	879	3288	583	1342	3838
10000	370	964	4899	620	1550	6228
26000	378	1023	6939	643	1709	9944
50000	381	1045	8057	662	1770	12413
100000	383	1056	8762	666	1802	14172
250000	384	1063	9249	659	1821	15489
500000	384	1065	9423	660	1828	15984
1000000	384	1066	9513	660	1831	16.244

The sample sizes reflect the number of obtained responses, and not necessarily the number of questionnaires distributed (this number is often increased to compensate for non-response). However, in most social and management surveys, the response rates for postal and e-mailed surveys are very rarely 100%. Probably the most common and time effective way to ensure minimum samples are met is to increase the sample size by up to 50% in the first distribution of the survey (Bartlett et al., 2001).

Let Us Check Our Progress

1. Make a comparison between probability and non-probability sampling techniques with suitable examples

LET US SUM UP

This Block has given us some understanding about some technical concepts used in educational research. These are Population, Sample, Sampling, and Sampling Design/Techniques along with importance of each of them in educational research. By population we have meant the sum total or the aggregate of all members/Blocks/elements/cases that conform to some defined set of specifications which is sometimes termed as universe. It may be finite or infinite; concrete or abstract; living or non-lving; real or imagined, etc. Researcher makes generalization about the population. Any measure of population is called parameter. Secondly, sample is a portion of the population which has been defined and the researcher has conceived of. A sample may be either representative or non-representative. A representative sample, it is rationalized, includes the attribute(s) of the population defined by the researcher. It is a miniature of the population. In research parlance we take note of such sample as it is generally a bias-free replica of the population, definitely smaller in size. Any measure of sample is called statistic which has capacity to estimate the parameter.

Sampling refers to the systematic and logical techniques through which a sample is drawn from the population which is presumed to be defined and finite. It is basically a mathematical concept and it must be logically substantiated. Some important principles of sampling are : it must be chosen in a systematic and objective manner; sample Blocks must be independent of each other; the selection process should be based on sound criteria and should avoid errors, bias and distortions, etc. Sampling as a technique economic and reliable. A biased sample is one when

selection of Blocks from the population is not systematic and objective. A sample that is not representative can suffer from errors — random or systematic. Sampling error refers to the difference between the population value and the estimated population value from a sample. Sampling design means the conceptual model which is set for drawing sample from the population. Sometimes it is simply meant as techniques of sampling.

This Block has dealt in various sampling techniques, both probability and non-probability generally used in educational research. But it has emphasized upon the concept and strategy of random sampling of various kinds and nature because randomization is the basic principle for drawing representative sample and it is the core of probability model upon which inferential statistics is founded. Admittedly, the inferential statistical models help testing our hypothesis (statistical or null hypothesis).

SUGGESTED READINGS:

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- https://www.researchgate.net/publication/319998246_Sampling_Methods_in_Research_ Methodology_How_to_Choose_a_Sampling_Technique.

ASSIGNMENTS:

Q.1. Define population ?

Q.2. Define sample ?

Q.3. State the advantages and disadvantages of sampling ?

Q.4. State five purposes of sampling?

Q.5. Explain the procedure of selecting the sample?

Q.6. State the differences between random sampling and non-random sampling?

Q.7. State the merits and demerits of the probability sampling method:

Block-5

CLASSIFICATION, QUANTIFICATION & PRESENTATION OF RESEARCH DATA

CONTENT STRUCTURE

Introduction

Objectives

1.0 : Levels of Measurement and Graphical Representation.

5.1.1 : Levels of Measurement

- Nominal Scale
- Ordinal Scale
- Interval Scale
- Ratio Scale

5.1.2 : Tabular and Graphical Presentation of Data

- Histogram
- Polygon
- Ogive

2.0 : Statistical Description of Research Data

5.2.1 : Measures of Central Tendency

- Mean
  - Computation of mean from ungrouped data

- Computation of mean from grouped data
- Computation of mean from grouped data

(frequency distribution table)

- Median
  - Computation of median from ungrouped data
  - Computation of median from grouped frequency distribution data
- Mode
  - Computation of Mode
  - Comparison of Mean, Median and Mode

5.2.2 : Measures of Dispersion

- Range
  - Computation of Range
  - Merits and Limitations of Range
- Average Deviation
  - Computation of Average Deviation from ungrouped data
  - Computation of Average Deviation from grouped data
  - Merits and Limitations of AD
- Standard Deviation
  - Computation of Standard Deviation from ungrouped data
  - Computation of Standard Deviation from grouped data
  - Merits and Limitations of SD

Let Us Sum Up

Suggested Reading

Assignment

Answers to 'Check Your Progress'

INTRODUCTION

Measurement refers to the act of measuring. When you try to measure something, you actually identify the dimensions, quantity, or degree of something. Measurement means to assign symbols or numbers according to some specific set of rules. Levels of measurement is an abstract but important and widely used idea. It states that some measures are at a higher or more refined level, and others are crude or less precisely specific. Here in this Block we introduce you to a popular four level of classification, *viz*., nominal, ordinal, interval, and ratio scale. When a researcher collects data from sample the numbers are huge. To present these data, researcher generally uses a tabular or graphical form. Here in this Block, we will discuss three types of graphical representation of data namely histogram, polygon and ogive. When a researcher wants to represent a huge data in the form of a single digit he uses central tendency for the purpose. There are generally three different ways of measuring central tendency, *viz*., mean, median and mode and these will also dealt with in this Block. Another characteristic of a range of scores is dispersion or variability, which can also be measured. The present Block will also deal with measures of variability, *viz.*, range, average deviation and standard deviation. The Block will discuss the appropriateness of using these different measures in different situations.

OBJECTIVES

After completing this Block you will be able to-

- Explain the meaning of different levels of measurement;
- Use different scales in educational research;
- Draw histogram, polygon and ogive for graphical presentation;
- Compute mean, median and mode from grouped and ungrouped data;
- Mention the uses of mean, median and mode in different situations;
- Calculate the value of range, average deviation and standard deviation;
- Explain the merits and limitations of different measurement of variability, and
- Apply these in educational research.

Unit -1

LEVELS OF MEASUREMENT AND GRAPHICAL REPRESENTATION

5.1.1 : LEVELS OF MEASUREMENT

A topic, which can create a great deal of confusion in educational research, is that of types of scales used in measuring variables. It is important because it relates to the types of statistics a researcher can use to analyse the data. Variables can be measured at different levels of precision. Various statistics have been invented to deal with each level of measurement. In order to choose the proper statistics to analyze data, we first have to consider at what level the variable is measured.

Variables can be measured at different levels of precision. There are four levels of measurement and they are given below in ascending order of precision:

- Nominal
- Ordinal
- Interval
- Ratio

Each level is explained separately.

NOMINAL SCALE

The least precise level of measurement is the nominal level. (The word "nominal" means "in name."). This scale uses symbols, such as words or numbers, to level, classify, or identify people or objects. Examples of nominal-level variables are gender (with the categories of male and female), school type (like- Govt., Govt.aided and private), religion (Hindu, Muslim, Sikh, Buddhist, *etc*.) *etc*. A nominal scale is simply placing of data into categories, without any order or structure. The categories don't have any particular order from more to less or higher to lower. You can also use numbers in place of categories, e.g., 1 for male and 2 for female. Numbers

are often preferred because text takes longer to type out and takes up more space. Here numbers are used to classify data. But you cannot add, subtract, rank, or average. The only mathematical operation you can do is count. In research activities a YES/NO scale is also nominal. It has no order and there is no distance between YES and NO. The statistics, which can be used with nominal scales, are in the non-parametric group.

ORDINAL SCALE

If you have a variable whose categories do have an order, you may have an ordinal-level variable (The word "ordinal" means "in order."). In ordinal scales, values given to measurements can be ordered. The simplest ordinal scale is a ranking. Measurements with ordinal scales are ordered in the sense that higher numbers represent higher values. However, the intervals between the numbers are not necessarily equal. An ordinal scale only lets you interpret gross order and not the relative positional distances. Here, distances between attributes do not have any meaning. For example, on a survey you may code Educational Attainment as 0=less than H.S.; 1=H.S. passed; 2=graduate; 3=postgraduate;

4=doctorate. In this measure, higher numbers mean higher education. But the distance from 0 to 1 is not same as 3 to 4. Ordinal variables allow us to rank order the items we measure in terms of which has less and which has more of the quality represented by the variable, but still they do not allow us to say "how much more." Another example of an ordinal variable is the socioeconomic status of families. Here, you know that upper-middle class is higher than middle class but you cannot say how much it is higher. Ordinal data would use non-parametric statistics. These would include: median, mode, rank order correlation, and non-parametric analysis of variance

INTERVAL SCALE

On an interval scale, measurements are not only classified and ordered, but the distances between each interval on the scale have meaning and are equal right along the scale. It is an interval scale because it is assumed to have equidistant points between each of the scale elements. Take temperature in degrees, the best example of an interval-level variable. When you measure temperature (in Celsius), the distance from 30-40 is same as distance from 70-80. But you must remember that the 'zero' point on an interval scale is arbitrary, not true or absolute. What do you think about the 'zero' of a thermometer? Think is it true zero or not. Actually, a thermometer does have a zero, but the zero does not indicate a lack or absence of the variable, temperature.

Temperatures below 0o are designated negative numbers. So the arbitrary 0oC does not mean 'no temperature'. On the Celsius scale, the zero value is taken as the point at which water freezes. It means that you cannot make 'ratio statement' from this scale. Therefore a temperature of 30 degrees is not twice as warm as one of 15 degrees. In educational research, there are so many variables, which are measured at interval level, like IQ, attitude, aptitude, personality *etc*. If a person got zero score on an intelligence test, which zero score would not mean an absence of intelligence. Interval scale data would use parametric statistical techniques, like Mean, Standard deviation, Correlation–r, Regression, Analysis of variance, Factor analysis, *etc*.

RATIO SCALE

The highest level of measurement is the ratio level. Variables measured at the ratio level have all the characteristics of nominal, ordinal, and interval level measures, and the categories include a true zero point. The zero point makes a ratio-level variable more precise than an interval-level variable. The zero point means we can sensibly multiply and divide the categories of a ratio-level variable. A good example is the Kelvin scale of temperature. This scale has an absolute zero. Thus, a temperature of 300 Kelvin is twice as high as a temperature of 150 Kelvin. In educational research this level of measurement is occasionally used. Some examples in this field are age, years of education, years on the job, time, *etc*. It's important to remember that at lower levels of measurement, assumptions tend to be less restrictive and data analyses tend to be less sensitive. At each level up the hierarchy, the current level includes all of the qualities of the one below it and adds something new. In general, it is desirable to have a higher level of measurement (e.g., interval or ratio) rather than a lower one (nominal or ordinal).

Let Us Check Our Progress

1. Classify different levels of measurement.
2. Distinguish between 'Interval' and 'Ordinal' scalesmeasurement.

5.1.2 : TABULAR AND GRAPHICAL PRESENTATION

HISTOGRAM

The most common form of graphical presentation of data is histogram. It is a kind of **Bar graph.** If the variable is categorical variable, then bar graph is used. But if the variable is

quantitativevariable, histogram is preferred. Histogram consists of a series of rectangles, each of which representsthe score in one of the class interval. Two vertical boundaries of a rectangle coincide with thereal class limits, and its height depends on the frequency of scores.

The steps of constructing a histogram are given below :

First consider the following frequency distribution:

Class Interval	**Frequency (f)**
70-70	5
60-69	7
50-59	10
40-49	12
30-39	9
20-29	6

Step1. Convert class interval to exact class limit. For example, convert 20-29 as 19.5-29.5; 30- 39 as 29.5-39.5 *etc.*

Step2. Plot exact class limit on x axis and frequency on y axis. Remember that the vertical axis should be 3/4th as long as the horizontal axis.

Step3. Draw the rectangles. The base of the each rectangle is the width of the class interval and the height is the corresponding frequency of that class interval.

Now let's try to construct a histogram on a graph paper after considering the above-mentioned steps.

Class interval	**Exact class limit**	**Frequency (f)**
70-79	69.5-79.5	5
60-69	59.5-69.5	7
50-59	49.5-59.5	10
40-49	39.5-49.5	12
30-39	29.5-39.5	7
20-29	19.5-29.5	6

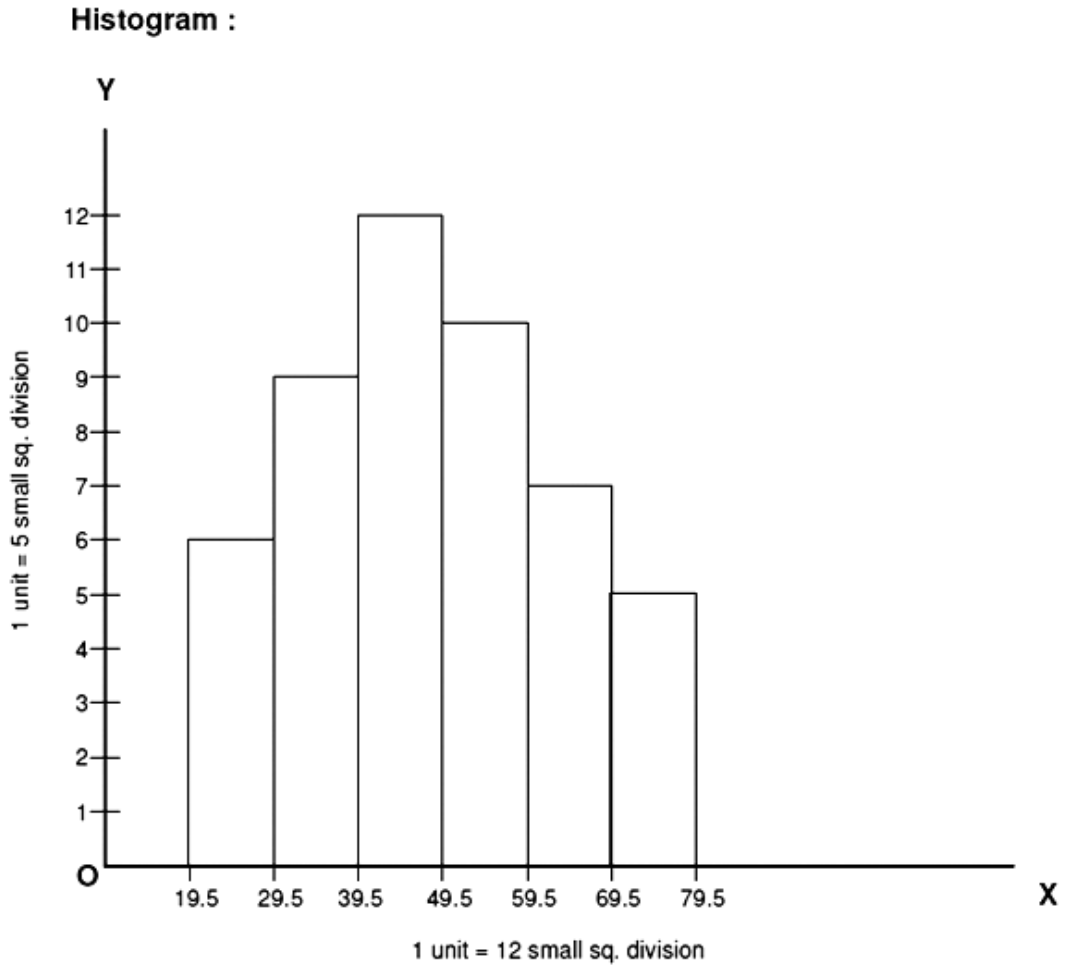


Figure - Histogram (see also fig. supplied on the graph paper as Histogram)

POLYGON

Polygon means many angles. When a many sided figure is drawn on the basis of a frequency distribution table, then it is called a polygon or frequency polygon. You can draw a polygon from a histogram also. It can be done by joining the midpoints of the upper base of the rectangles with a straight line. Is it necessary to draw a histogram before drawing a polygon? Definitely not. You can also draw a polygon in other way.

The steps of drawing a polygon are discussed below:

Step 1. Calculate the midpoints of each class interval.

Step 2. Since polygon a complete figure, take two extra class intervals with zero frequency at each end of the distribution.

Step 3. List midpoints along X-axis and the frequencies along Y-axis.

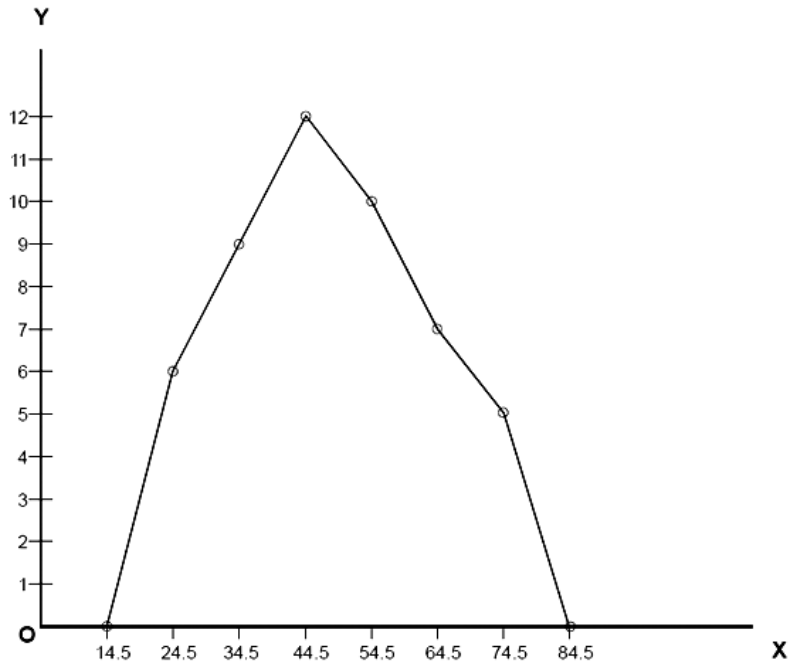
Step 4. Taking the midpoints one by one, the points above them are to be plotted corresponding to the frequencies of the intervals. In case of two additional intervals, the points are to be plotted on the x-axis itself, as their frequencies being zero.

Step 5. Adjoining points so plotted are to be joined by straight-line segments.

Now let's try to construct a polygon on a graph paper after considering the above-mentioned steps.

Midpoint	Frequency (f)
74.5	5
64.5	7
54.5	10
44.5	12
34.5	9
24.5	6

Polygon:



Ogive or Cumulative Percentage Frequency Curve :

Both cumulative frequency and cumulative percentage frequency may be cast in graphic form.

Here we will discuss only cumulative percentage frequency curve or ogive because it is widely used in educational research.First consider the following frequency distribution:

Class Interval	Exact Limits	Frequency	Cumulative frequency Frequency	Cumulative Percentage
45-49	44.5-49.5	2	50	100.00
40-44	39.5-44.5	3	48	96.00
35.39	34L5-39.5	6	45	90.00
30.34	29.5-34.5	9	39	78.00
25-29	24.5-29.5	13	30	60.00
20-24	19.5-24.5	8	17	34.00
15-19	141.5-19.5	6	9	18.00
10-14	9.5-14.5	2	3	6.00
5-9	4.5-9.5	1	1	2.00
		N=50		

Step 1. Calculate percentage frequency. The cumulative frequency corresponding to any class interval is the number of cases within that interval plus all cases in intervals lower to it on the scale. The calculation is very simple. Consider the above table. The lowest interval is 5-9 and its frequency is 1. There are no frequencies below it. Hence, the cumulative frequency of this class is 1+0=1. For the next class interval (10-14), the cumulative frequency is equals to 2+1=3. Calculate the other frequencies and compare them to the following table.

Now you have to calculate cumulative percentage frequency. This is also very simple. For that you have to first calculate the cumulative frequencies. Cumulative percentage frequency can be obtained by multiplying the cumulative frequency by 100/N (where N=Total frequency).For example, the cumulative percentage frequency of the class interval of 5-9 will be 1x 100/50=2. And for the next higher level it will be 3x100/50=6. Now you calculate other percentage frequencies and compare them with the table given below.

Step 2. Calculate the actual upper class limit of each class interval. For example, the upper class limits of 5-9 and 10-14 are 9.5 and 14.5 respectively.

Step 3. List actual upper class limit of the class intervals along x axis andpercentage frequencies along Y axis.

Step 4. Plot points representing upper limits of class intervals with their corresponding cumulative percentage frequencies.

Step 5. Take one extra class interval with zero cumulative percentage frequency at lower end of the distribution. Calculate the actual upper class limit. In our example it is 4.5.

Step 6. Join the points through successive chains of straight lines. Now let's try to construct an ogive on a graph paper after considering the above-mentioned steps.

OGIVE :

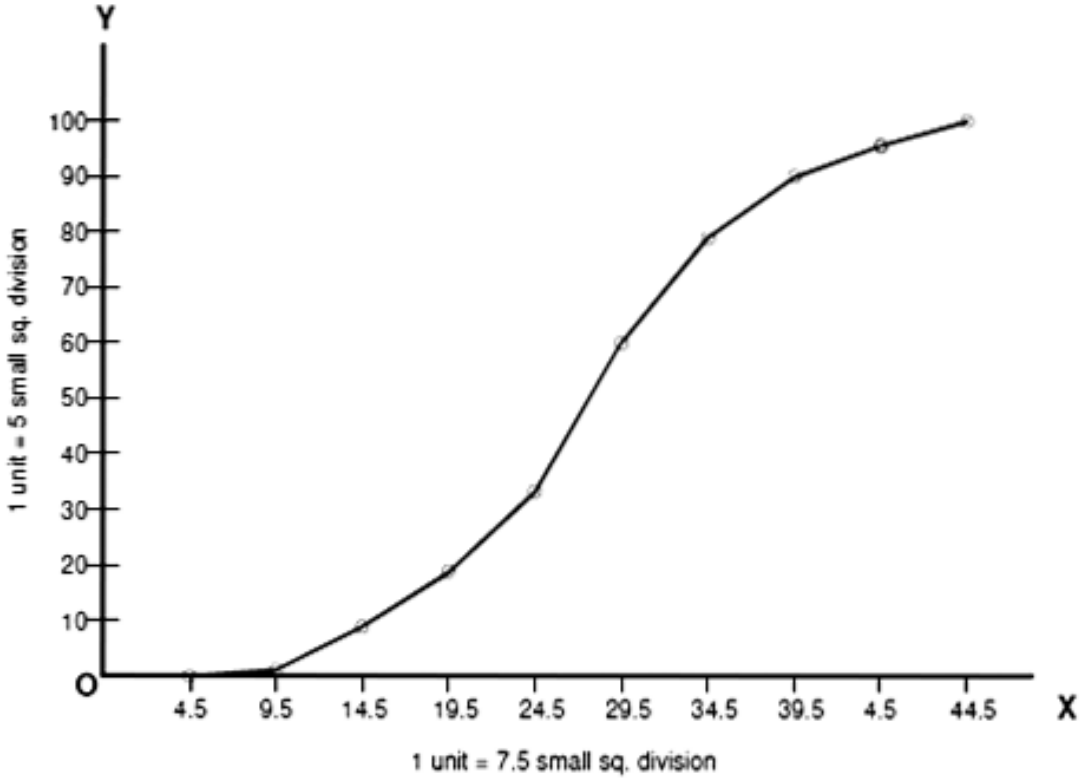


Figure - Ogive

Unit -2

STATISTICAL DESCRIPTION OF RESEARCH DATA

5.2.1 : MEASURES OF CENTRAL TENDENCY

The purpose is to provide a single summary figure that best describes the central location of an entire distribution. It also helps us to compare two or more groups on same dimension. According to Tate, central tendency is " a sort of average or typical value of the items in the series and its function is to summarize the series in terms of this average value".

The most common measures of central tendency used in education and behavioural sciences are:

- Mean
- Median
- Mode

MEAN

The mean is the arithmetic average, or what most people call average. It is also called arith-metic mean. This is the most popular and widely used measure of central tendency. The mean is the sum of all the scores in a distribution divided by the total number of scores.

Therefore we can say Mean

Where, M = Mean

ΣX = sum of all scores

N = Number of cases

If X is the variable and X_1, X_2, X_3 …….$X_n$are the values of X, then the arithmetic mean M isequal to

$$M \quad \frac{H}{N}$$

Now we will discuss the computation of mean in different situation :

Computation of mean in an ungrouped data

When the data are ungrouped, then mean is computed by using the above formula.

Example 1 :

Compute mean of the scores given below: 12, 9, 10, 7, 13,15,19

Solution : Mean (M) = $\frac{H}{N}$

Computation of mean from grouped data

(when scores and frequencies are given)

Example 2 : Compute mean of the following data:

Score	5	8	10	11	12	15	20	
Frequency	2	4	3	5	3	7	1	

Solution: Here, you have to use the following formula:

112 9 10 7 11 13 15 198

8 M $\frac{fH}{N}$

Where X = score

f= frequency

Score (X)	**frequency (f)**	**IX**
5	2	10
8	4	32
10	3	30
11	5	55
12	3	36
15	7	105
20	1	20
	N = 25	EfX = 288

Therefore, $M \quad \frac{fH}{N}$

$$\frac{288}{25}$$

$$= 11\text{-}52$$

Computation of mean from grouped data (frequency distribu-tion table)

Direct (Long Method):

Example 3

Class Interval	10-14	15-19	20-24	25-29	30-24	35-39
Frequency	2	4	6	8	3	5

Mean is calculated here by using the same formula just mentioned above:

$$M \quad \frac{fH}{N}$$

Where, f = frequency of each class interval

x = midpoint for each class interval

N = total number of frequency

For this you have to frame the following table :

Class Interval	**Midpoint (x)**	**Frequency (f)**	**fx**
35-39	12	2	24
30-34	17	4	68
25-29	22	6	132
20-24	27	8	216
15-19	32	3	96
10-14	37	5	185
		N = 28	Σfx = 721

Short-cut (Assumed Mean Method):

It makes computation comparatively simple. You can avoid lengthy calculations of multiplication of midpoints with corresponding frequency.

Example 4: Consider example 3 again.

Step 1. Locate the class interval that lies almost at the middle of the distribution. If you come across two class intervals, chose the one with greater frequency. In our example it is '25-29'.

Step 2. Calculate the midpoint of the above class and it is taken as the Assumed Mean (AM). Here it is 27.

Step 3. Calculate the deviation (d) for each class interval. Deviation = (X- AM / i). Simply you can put zero against the class interval containing AM and +1, +2, +3, etc. against class interval of larger score and (-)l, (-)2, (-)3, etc. for smaller score.

Step 4. Calculate fd for each class interval.

Step 5. Find out Σfd.

Class Interval	Midpoint (x)	frequency (f)	Deviation (d)	*a*	
35-39	32	5	+2	10	13
30-34	29	3	+1	3	
25-29	27 AM	8	0	0	
20-24	22	6	-1	-6	
15-19	17	4	-2	-8	-20
10-14	12	2	-3	-6	

$\Sigma fx = 721 - 20$

$= (-)\ 7$

Now apply the following formula for computing mean

$$M = AM + \frac{fH}{N}\ 1$$

Where, AM = Assumed Mean

d = deviation (X-AM / i)

I = size of class interval

= 27-1.25

= 25.75

Median

Median (symbolized as Mdn.) is the middle most value of a distribution. It divides the distribution into two equal halves so that an exactly equal number of scores fall above and below this point *i.e.* 50% of the scores will be above the median and the remaining 50% below the median. Since median clearly denotes the position of a distribution, it is also called position average.

Computation of Median from ungrouped data

Example 5: 2, 9, 4, 5, 17, 11, 10

Example 6: 3, 12, 18, 10, 9, 15

First arrange the scores in ascending or descending order.

For Example 5: 2, 4, 5, 9, 10, 11, 17

For Example 6: 3, 9, 10, 12, 15, 18

Find out $(n+l)^{th}/2$ term of this distribution. Here n= number of cases.

This value is median of the distribution.

For Example 5. $(n+l)^{th}/2$ term means $[(7+l)/2]^{lh} = 4^{lh}$ term, i.e. 9 is the median.

For Example 6. $(n+l)^{th}/2$ term means $(6+l)/2 = 3.5^{lh}$ term, i.e., between the scores of 10 & 12 that means 3.5^{lh} term = (10+12)*12* =11, therefore, median =11.

Computation of Median from grouped frequency distribution

Example 7. Compute median of the following distribution:

Class Interval	20-24	25-29	30-34	35-39	40-44
frequency	9	15	18	10	12

For computing median from frequency distribution, the following formula is used:

$$Mdn \quad 1 \quad \frac{\frac{N}{2} \quad fb}{fm} \quad xi$$

[in case of computation of median from lower score]

Where, L = exact lower limit of the median class

N = total number of frequency

fb = total of all frequencies below the median class

fm = frequency of median class

i = size of class interval

Steps for computation of median

1. Convert all class intervals in exact class limits.
2. Find the median class. Here total frequencies (N) is 64. Start computing the cumulative frequencies from lower end to higher end and mark the median class which contains N/ 2 = 32 value therein. Here it is 30-34, so '30-34' is the median class.
3. Find the value of L, fb and fm. Here, L = 29.5, fb = 24 and fm = 18.
4. Calculate median by applying the formula

$$Mdn \quad 1 \quad \frac{\frac{N}{2} \quad fb}{fm} \quad xi$$

Class Interval	Exact Class Limit	frequency	Cumulative frequency
40-44	39.5-44.5	12	64
35-39	34.5-39.5	10	52
30-34	29.5-34.5	18	42
25-29	24.5-29.5	15	24
20-24	19.5-24.5	9	9

= 29.5 + 2.22

= 31.72

Mode

Mode is the value in a distribution that corresponds to the maximum concentration of frequen-cies. Therefore mode is the most frequently occurring score. It is symbolized as Mo.

Computation of Mode

Consider the following examples:

Example 8 : 2,4, 8,2, 10, 11,4, 2,9, 13

Arranging the data, we get - 2, 2,2,4,4, 8,9, 10, 11, 13

Since the score 2 has the highest frequency (f=3) then the mode is 2.

Example 9: 11, 11, 12, 12,13, 14, 15, 17

Here adjacent scores of 11 and 12 have the highest but equal frequencies (f = 2), hence the average of these two values will be the mode,

i.e., (11+12)/2= 11.5

Example 10 : 33,37,37,40,41,42,42,45

Here two non-adjacent scores 37 and 42 have the largest but equal frequencies (f=2), hence the scores have two modes, i.e., 37 and 42 and it is bimodal.

There are also possibilities to get multimodal scores.

Computation of Mode from frequency distribution

Example 11 :

Class Interval	frequency
35-39	4
30-34	7
25-29	10
20-24	8
15-19	5
9-14	2

In this distribution, there are maximum frequencies (10) in the class interval 25-29. This is the modal class and the midpoint of the class i.e., 27 is the mode.

But this is crude mode. True mode can be computed by applying the two formulae:

$$M_0 = L + \frac{f_1 - f_2}{2f_1 - f_2} \times i$$

Where, L = the exact lower limit of the modal class

f_1 = frequency of the preceding modal class

f_2 = frequency of the immediate next modal class

i = size of class interval

In the above example, the modal class is 25-29.

Therefore, L = 24.5, f_1 = 7, f_2 = 8, i = 5

$$M_0 = 24.5 + \frac{7 - 8}{2(7) - 8} \times 5$$

$$= 24.5 + 2.33$$

$$= 26.83$$

Comparison of Mean, Median and Mode

In some situation, the three measures of central tendency may vary close to each other but in other occasion they may vary. This largely depends on the nature of distribution. When the distribu-tion is perfectly symmetrical the values of mean, median and mode are equal. (Mean = Median = Mode). In a moderately asymmetrical distribution, the values of mean, median and mode do not coincide. In case of positively skewed distribution the value of mean is highest, the mode is the lowest and the median will be about l/3rd distance from the mean towards the mode. And in case of negatively skewed distribution mean will be the lowest, mode would be the highest and median would be approximately at l/3rd distance from mean towards mode.

The relationship for moderately skewed distribution may be put in the form of following for-mula:

Mode = 3 Median – 2Mean

Among these three measures, the choice depends on the type of data and objective of the study. However, the mean is highly desirable because mean is more precise, reliable and stable measure. If further statistical analysis is needed, you should go for mean, as the mean is the best for further statistical computation.

Mean is useful :

- When scores are symmetrically or nearly symmetrically distributed around a central point, *i.e.,* distribution is not markedly skewed.
- When the situation demands a measure of central tendency, having greater stability.
- When researcher wants to compute other statistics for inferential purpose.
- When more accuracy and precision is needed.

Limitation of Mean:

It may be affected by extreme values.

It cannot be computed for open-ended class intervals like 10 and above.

It is impossible to calculate mean even if a single observation is missing.

If there are very high and very low values in a distribution, then mean cannot be a true represen-tative.

Median is useful:

When incomplete distribution is given.

When the exact midpoint of the distribution is needed.

When the distribution is markedly skewed, i.e., one or more very extreme cases are there in the distribution.

Limitation of Median:

It is not based on all the observations.

It is not amenable to most of the inferential analysis.

Mode is Useful:

When a quick and approximate measure is required.

When the most typical value is needed like - the most popular belief of sample about a phenomenon.

When data is incomplete or distribution is skewed.

Limitation of Mode :

It is not rigidly defined.

It is not based on all observations.

it is not suitable for further statistical interpretation.

Let Us Check Our Progress

1. Calculate the median of the following frequency distribution :

Class Interval	60-65	65-70	70-75	75-80	80-85
Frequency	8	10	15	7	9

2. Calculate mean of the following distribution by assumed mean method :

Class Interval	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
Frequency	1	2	4	8	11	9	7	4	3	1

5.2.2 : MEASURES OF DISPERSION

Look at the following two sets of scores:

Set 1: 7, 7, 7,*1,1,1* Set

II: 4, 5,6, 7, 8,9, 10

Compute the mean of the two set of scores. What do you get? Yes, it is seven. Here central tendency of both sets is equal. Can you conclude that both the sets are equal in nature? The answer should be 'NO'. So what is the difference? The difference is the spread of scores. In set I, the spread of scores is zero. But in set II, the spread of scores are from 4 to 10. Therefore, you can see that it is possible that two or more set of scores have same mean or median, but may differ in terms of spread. This characteristic of a set of scores is called variability, dispersion, or scatter.

A measure of variability is a numerical index that provides information about how spread out or dispersed the data are or how much variation is present. If there is a little variability in a set of scores you can them as homogeneous. And if the variability is more enough then they are heterogeneous.

Here in this Block for the purpose of research we shall discuss the following measures of variability:

- Range
- Average deviation
- Standard deviation and Variance

Range

It is one of the simplest measures of variability. It is symbolized as 'R\ Range is defined as the difference between the largest score and the smallest score of a distribution. The equation of the range is:

$$\mathbf{R = X_{max} - X_{min}}$$

Where, R = Range

X_{max} = highest score

X_{min} = lowest score

Computation of Range

Example: Find out the score of the following data

12, 9, 8, 11,5, 6, 13,21

Here $X_{max} = 21$

$X_{min} = 5$

$\therefore R = 21 - 5 = 16$

Merits and Limitations of Range

Merits of Range:

- It is the easiest to understand and to compute.
- Good if the distribution is not much skewed.
- If data are at ordinal scale range is the only measure, which is technically meaningful.

Limitations of Range:

- It is based on only two extreme scores so it does not provide any information about the variability among intermediate scores.
- Not amenable for further statistical treatments.
- Insensitive to change inside the distribution.

AD $\frac{|x|}{N}$

Average deviation

It refers to the arithmetic mean of the difference between each score and the mean. It is commonly denoted as AD. AD is the average distance between the mean and the scores in a distri-bution. It is commonly denoted as AD.

Computation of AD from ungrouped data

Formula:

Where, AD = Average Deviation

|x| = Absolute value of the deviation from mean irrespective to positive or negative sign

N = total number of frequencies Example : Compute AD of the following scores 10, 9, 12, 20, 13, 17, 15, 8

Here, Mean = 13

Score(x)	|x| = X-M
10	3
9	4
12	1
20	7
13	0
17	4
15	2
8	5
	Z|x| = 26

$$AD \quad \frac{|x|}{N} \quad \frac{26}{8} \quad 3.25$$

Computation of AD from grouped data

Formula : $AD \quad \frac{|x|}{N}$

Where, |fx| = product of frequency and corresponding deviation from mean irrespective of positive or negative sign

Example : Compute AD of the following frequency distribution

Class Interval	10-14	15-19	20-24	25-29	30-34	35-39
frequency	4	9	8	7	6	5

Solution:

Class Interval	X (midpoint)	f	fx	M	|fx|
35-39	37	5	185	12.82	64.1
30-34	32	6	192	7.82	46.92
25-29	27	7	189	2.82	19.74
20-24	22	8	176	2.18	17.44
15-19	17	9	153	7.18	64.62
10-14	12	4	48	12.18	48.72
		N = 39	Sfx = 943		S|fx| =261.54

$$M \quad \frac{fx}{N} \quad \frac{943}{39} \quad 24.18$$

$$AD \quad \frac{|fx|}{N}$$

$$261 \ \frac{54}{39}$$

= 6.71

Merits and Limitations of AD

Merits of Average Deviation:

- Readily comprehendible
- Easy to compute
- Affected less by extreme values compared to Standard Deviation.

Limitations of Average Deviation:

- Not suitable for open-ended classes.
- It ignores the sign.
- Not amenable for further statistical treatment.

Standard Deviation

Standard Deviation is the most stable index of variability. You must observe that when you calculate AD, the sign of deviation from the mean were not considered. In order to avoid the discrep-ancy, instead of the actual values of deviation you may consider the squares of deviations. The outcome is called variance, and the square root of the variance is known as Standard Deviation (designated as SD). Therefore, it can be said that standard deviation is the square root of the mean of the square deviations of the scores from the mean. The SD of the sample and population are gener-ally denoted as ‘S’ and ‘G’ respectively.

Therefore, SD (S or G) = $\sqrt{\frac{x^2}{N}}$

Where, x^2 = squares of deviation of score from mean (X - M)

N = total number of scores

Remember that, deviations are calculated always from mean, not median or mode. The value of SD is always positive.

Computation of SD from ungrouped data

Formula: SD =

or, SD =

Where, x = deviation of each score from mean

N = total no. of scores

C^2 = square of correction between assumed mean and computed mean

Example : Compute SD of the following test scores of 10 students

20, 12, 15, 11, 18, 9, 20, 11, 13, 14

Long Method

X	**X**	**X^2**
20	5.7	32.49
12	(-) 2.3	5.29
15	0.7	0.49
11	(-) 3.3	10.89
18	3.7	13.69
9	(-) 5.3	28.09
20	5.7	32.49
11	(-) 3.3	10.89
13	(-) 1.3	1.69
14	(-) 0.3	0.09
N 10	Lx = 143	Ex^2 = 136.1

Computation of SD from grouped data

(will) class interval)

Calculate SD of the following distribution:

Class Interval	5-9	10-14	15-19	20-24	25-29	30-34	35-39
F	2	5	6	7	7	5	2

Formula: $SD \sqrt{\frac{fx^2}{N}}$

Where x = deviation of each score(midpoint) from mean. (X - M).

Class	Midpoint	f	fX	Deviation from Mean (x)	x^2	fx^2
35-39	37	2	74	14.85	220.52	441.04
30-34	32	5	160	9.85	97.02	485.10
25-29	27	7	189	4.85	23.52	164.64
20-24	22	7	154	-0.15	0.022	0.154
15-19	17	6	102	-5.15	26.52	159.12
10-14	12	5	60	-10.15	103.02	540.10
5-9	7	2	14	-15.15	229.52	459.04
	N = 34	Σfx = 753				Σfx^2 = 2249.19

SD $\sqrt{\frac{X^2}{N}}$ $\sqrt{\frac{136}{10}}$ 3.69

Mean = 753/34 = 22.15

SD $\sqrt{\frac{fx^2}{N}}$

SD $\sqrt{\frac{2249.19}{34}}$

= 8.13

Short Method (Using Assumed Mean)

Formula: SD $\sqrt{\frac{fx^{2}}{N}}$ C^{2}

or

Where, i = size of class interval

x' = deviation from assumed mean

Consider the previous example

Class Interval	**MidpointX**	**F**	**x'**	**fx'**	**fx'^{2}**
35-39	37	2	+3	6	18
30-34	32	5	+2	10	20
25-29	27	7	+1	7	7
20-24	22 (AM)	7	0	0	0
15-19	17	6	-1	-6	6
10-14	12	. 5	-2	-10	20
5-9	7	2	-3	-6	18
	N = 34		Σfx' = 1	Σfx'^{2} = 89	

5 $\sqrt{2.62 \quad 0.0004}$

= 5 × 1.62

= 8.09

MERITS AND LIMITATIONS OF SD

Merits of Standard Deviation:

- Based on all observations.
- Suitable for further statistical treatment.
- Least affected by fluctuations of sampling.

Limitations of standard Deviation:

- Difficult to compute.

Let Us Check Our Progress

1. Distinguish between AD and SD.
2. Mention at least two uses of SD in educational research.

LET US SUM UP

Data refers to the set of observations. There are different types of scales for collecting data. They are nominal, ordinal, interval and ratio scales. The operations to be performed depend on the type of measured scaled used. In research the data can be presented in three types of graphs-histogram, polygon and ogive. Two important features of any data are central tendency and variabil-ity. Central tendency describes the central position of any distribution. There are generally three types of measures of central tendency- mean, median and mode. Variability tells about the spread of the scores. Variability can be measured different ways. We have discussed three types-range, average deviation and standard deviation.

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ASSIGMENT

1. What do you mean by levels of measurement? Explain the meaning of different levels of measurement with suitable examples.
2. What is central tendency? Explain the different ways to measure central tendency.
3. Find out mean of the following scores :

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	22	40	52	70	65	10	19	21

4. Calculate median of the following distribution:

Class Interval	1-5	6-10	11-15	16-20	21-25	26-30	31-35
Frequency	7	10	15	32	24	18	9

5. Define mean, median and mode.
6. When should mean, median and be used?
7. What are the relative advantages of mean and median?

8. Draw a histogram from the data given below:

Class	100	110	120	130	140	150	160	170	180	190
interval	-109	-119	-129	-139	-149	-159	-169	-179	-189	-199
Frequency	7	7	2	6	8	38	11	15	4	2

Superimpose a frequency polygon upon this histogram.

9. Draw a ogive from the data given in assignment no. 8.

10. What do you mean by variability? What are the different measures of variability? Mention their merits and demerits in statistics.

11. Consider the following frequency distribution table :

Class	100	110	120	130	140	150	160	170	180	190
interval	-109	-119	-129	-139	-149	-159	-169	-179	-189	-199
Frequency	7	7	2	6	8	38	11	15	4	2

Compute average deviation, standard deviation, and variance.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. 72.14
2. 44.60

Block-6

TOOLS & TECHNIQUES OF DATA COLLECTION

CONTENT STRUCTURE

Introduction

Objectives

1.0 : Research Tools & Techniques

6.1.1 : Criteria of good Research Tools

6.1.2 : Needs for Research Tools

- Construction and Uses of Tests

6.1.3 : General steps for test construction

2.0 : Some Research Tools & Techniques - A

6.2.1 : Observation Technique

6.2.2 : Interview Technique

6.2.3 : Questionnaire

3.0 : Some Research Tools & Techniques - B

6.3.1 : Rating Scale

6.3.2 : Attitude Scale

6.3.3 : Performance Test

Let Us Sum up

Suggested Reading

Assignments

INTRODUCTION

Man being a complex creature possesses different traits such as intelligence, attitude, and aptitude in different measures. For measuring the traits students apply Research tools. So, it is necessary for the students to know the needs and criteria of good research tools. Development and selection of appropriate research tools are therefore, an essential step for conducting a research. It is necessary that the research tools are to be selected / developed as per the objectives of research work. In addition to that, good research tools must possess some essential characteristics that the researcher needs to ascertain. Data can be obtained by directly asking the responds about the research problem or through some indirect ways keeping the respondent unaware about the research purpose. Data can be obtained from the person concerned directly or about the person from some other persons. Data can be obtained about some events or objects as well. Data can be obtained through various techniques depending on the objectives of the research as well availability of resources like manpower, money and time. The researcher is the best judge to decide about the particular technique for data collection. It is therefore essential to have a through knowledge of the different data collection techniques and the associated tools.

In this Block we shall learn aspects of tools and techniques for data collection.

OBJECTIVES

After completing this Block you will be able to :

- Mention the criteria of good research tools;
- Acquainted with the criteria of good research tools;
- Analyze the needs of research tools;
- Construct the tools; and
- Discuss the uses of different types of tools.

Unit -1
RESEARCH TOOLS & TECHNIQUES

6.1.1 : CRITERIA OF GOOD RESEARCH TOOLS

A psychological test has been defined in various ways. According to Anastasi, "A psychological test is essentially an objective and standardized measure of a sample of behaviours."

According to Freeman "A psychological test is a standardized instrument designed to measure objectivity one or more aspects of a total personality by means of samples of verbal or nonverbal responses, or by means of other behaviors." Generally, tests are very widely used as tools in educational and psychological measurement and evaluation. A brief classification of the tools used in evaluation is given below.

Tools

1. Tests:
   - (a) Educational tests
     - ➢ Achievement test
       - ● Teacher made test
       - ● Standardized test
     - ➢ Diagnostic tests
   - (b) Psychological tests
     - ➢ Aptitude tests
     - ➢ Intelligence tests
     - ➢ Personality tests
     - ➢ Creativity tests

2. Inventories
    - Interest inventory
    - Personality inventory
3. Attitude Scale
4. Observation
5. Interview
6. Questionnaire
7. Rating Scale
8. Test of Performance or Performance Test

Technique can be defined as the mode of collecting evidences whereas tools are the instruments that help to employ a particular technique. Techniques that are generally used for data collection can broadly be divided into the following manner —

- Testing Technique

Testing Technique requires the use of tests.

- Non- Testing Technique

Non testing Techniques can be divided into:

a. Inquiry : Interview, Questionnaire and Rating Scale.

b. Observation : Observation Schedule

c. Analysis : Documents

A good research tool must possess the following essential characteristics:

- **Objectivity :** A good measuring instrument should be objective i.e. it should be free from any subjectivity. Objectivity may be of two types: i) objectivity of items ii) Objectivity of scoring. The administration, scoring and interpretation of scores should all be independent of the subjective judgment of the individual examiner. The scores should be identical regardless of who happens to be the examiner. The personal error should be minimum.

- **Reliability :** It signifies the accuracy with which the test measures a particular trait. According to Garett, “the reliability of a test depends upon the consistency of scores to whom it is applied”.

■ **Validity :** Validity is the extent to which it measures, what it claims to measure. According to Garett "the Validity of a test the degree to which it measures what it intends to measure." For example if a test is made to measure English vocabulary of class VI, then it should measure English Vocabulary of class VI. A valid test is always reliable but reliable test is not always valid.

■ **Economic :** Test must be economic in terms of time and money. Tests can be given in a short period of time are likely to gain the cooperation of the subject and saves the time of all those involved in test administration. The matter of expense of administering a test is often a significant factor if the testing programme is being operated on a limited budget.

■ **Simplicity :** Ease of administration, scoring and interpretation is an important factor in selecting a test, particularly when expert personnel or an adequate budget are not available.

■ **Standardization :** A good test is a standardized measure for the comparison of individuals. The materials employed in the test, time limit, oral instructions to be given to the testes, preliminary demonstration, ways of handling queries from tastes, the surroundings are standardized and guidance regarding all these be made available in the test manual.

■ **Norms :** Norms are scores typical or characteristics of pupils of a given age or grade. A test which provides appropriate and accurate norms, whether they be in the form of age, grade, percentile rank, or standard score, is a good measure. These norms should be meaningful in the context of the purpose for which the test is intended and to the groups of persons with whom it is to be used. It helps in reducing interpretive error and defines the boundary of interpretation.

■ **Practicability :** A test must also be practical from the point of view of the time taken in its completion, length scoring, etc. in other words, the test should not be lengthy and the scoring method should not be difficult, not the one which can only be done by highly specialized persons or a scorer needs specialy training.

■ **Comparability :** Scores of standardized test must be comparable over time. For example in general practices we say that 60% marks are not as valuable today as they were 20 years back. This should not be the condition. Test scores of different subjects should be comparable with each other. For example 75% marks in Math's are not comparable to 75% in English.

■ **Discrimination ability :** A good test must be able to discriminate between more able and less able students. For this it is necessary that some items in the test must be like that only more able student can solve them.

Environmental condition : As far as possible, the testing environment should be such that light, sound and other comforts are equal and uniform to all the examinees otherwise it will tend to lower the reliability of the test scores. Putting in another way, this means that testing situation will be humane, not threatful.

Let Us Check Our Progress

1. Mention the characteristic of good research tools.
2. Why would you a valid test ? — justify.

6.1.2 : NEEDS FOR RESEARCH TOOLS

The research tools in different areas of research in education are supposed to meet the following needs :

- To help students at choice and critical points when they have to take a decision.
- The tools enable the counselor test administer to uncover as many promising opportBlockies as possible for the counselee testee.
- Students in schools, colleges and universities have to decide the selection of courses, co- curricular and extracurricular activities.
- The tests help teachers to adapt teaching to the needs of students. If the teacher objectively assesses the interest and capacities of students with the help of psychological tests.
- Psychological educational tests can be used by admission committees in schools and colleges to sort applications into groups. They can also be used by school and college systems to classify and distribute students across various curricula.
- The tests help in the distribution of personnel in various branches of services. For example the defense authorities would like to recruit persons for the armed forces who are above average in intelligence and emotional stability; are of higher level in mechanical and clerical aptitudes; are physically fit.
- The tests help in the diagnosis of students, learning failures.

- The tests help in the educational intervention.
- The tests are used to gather data in educational studies or researchers.

Carefully constructed and wisely administered psychological tests can provide good measures of the abilities, aptitudes, interests, attitudes and personality traits.

Let Us Check Our Progress

1. State the needs for Research Tools.
2. Relate testing and educational data gathering.

6.1.3 : GENERAL STEPS OF TEST CONSTRUCTION

Tests are tools of measurement. They are widely used in education and psychology. In this Section general rules of test construction are being discussed. Test is made on basis of certain simple rules. Following steps are included in the process of test construction.

1. Planning the test;
2. Writing items of the test;
3. Preliminary administration or experimental try out of the test;
4. Evaluating the test;
5. Preparation of norms for the final test;
6. Preparation of Manual and Reproduction of the Test

1. Planning the test : During the process of construction of test first of all is making detailed plan about the test to be prepared. Following aspects are important regarding the planning of the test:

- **Ascertaining the objectives testing :** Test constructor while planning the test should specify the broad and specific objectives in clear terms. Objectives should be precise, clear and real.

- **Ascertaining the content :** According to the objectives to be tested content is decided. At the time of deciding content age group of students to be tested must also be decided

because content is decided according to mental level of students and objectives to be tested. In achievement test previous knowledge should also be considered.

- **Ascertaining the form of test :** Test constructor decides about form of the test that test will be a verbal test or nonverbal test, individual test or group test, or performance of some tasks.

- **Other Planning :** instructor will also plan about sample of which preliminary administration, final administration, statistical methods to be adopted etc. Time is also another variable to be taken care of.

2. Writing items of the test : After planning, next step in test construction is writing of the items. While writing the item first of all test constructor decides which type of items he has to prepare. Type of items depend on concept to be measured and its components. Item writing essentially is a creative art. There are no specific definite rules. But some essential precautions should be taken while writing the items:

- In the preliminary draft number of questions should be about twice the number questions to be kept in test;

- Item writer should have thorough knowledge of the subject;

- Avoid Clues in the question ;

- Items should be according to the objectives of the test;

- Items in a test should be of different difficulty level or, embracing different dimensions of the construct to be tested.

- Item writer must have a large vocabulary;

3. Preliminary Administration or Experimental Try out of the test : When the items have been written and modified in the light of the suggestions and criticisms given by the experts the test is said to be ready for experimental try-out. The purpose of the experimental try-out or preliminary administration of the test is manifold. The main purpose of the experimental try-out of any psychological test is :

I. Finding out the major weaknesses, irrelevance, omissions, ambiguities and inadequacies of the items; linguistic compatibility, etc;

II. Determining of the difficulty values & discriminating power of each item; or any other kind of item characteristics;

III. Determining the reasonable time limit of the test;

IV. Determining the number of items to be included in the final form ;

V. Determining the inter correlations of the items so that over lapping can be avoided;

4. Evaluating the test : When on the basis of experimental or empirical try- out the test is finally composed of the selected items, the final test is again administered on a fresh sample to compute the reliability coefficient, then validation of the test.

5. Preparation of norms for the final Test : Finally the test constructor also prepares norms of the test. Norms are defined as the average performance or score of a large sample representative of a representative of a specified population. Norms are prepared to meaningfully interpret the scores obtained on the test, because obtained raw scores itself don't have any meaning.

6. Preparation of Manual and Reproduction of the Test : The last step in test construction is the preparation of manual of test. In the manual test constructor reports the psychometric properties of the test, norms and references. Instructions about test administration, scoring method and time limit etc. are also written.

Let Us Check Our Progress

1. Mention the steps of test construction.
2. How can you increase item validity of a test under construction ?

Unit – 2
SOME RESEARCH TOOLS & TECHNIQUES - A

6.2.1 : OBSERVATION TECHNIQUE

Observation is the process in which one or more persons observe what is occurring in some real life situation, and they classify and record pertinent happening according to some planned scheme. It is used to evaluate the overt behaviour of individuals in controlled and uncontrolled situation. Observational methods have occupied an important place in descriptive education research. P.V.Young has pointed out in the following lines :—

"Observation — a deliberate study through the eye — may be used as one of the methods for scrutinizing collective behaviour and complex social institutions as well as the separate units composing of totality".

Types of Observation Technique

Observation Technique may be classified as : —

- Participant, and
- Non-participant observation.

Participant observation is an observation technique in which the observer becomes more or less one of the group under observation and shares the situation as a visiting stranger, an attentive listener, an eager learner, or as a complete participant observer, registering, recording and interpreting behaviour of the group. The observer, thus, plays a double role. He gets the feel of what the various processes and activities of a group mean to the members.

Non-participant observation is used with such groups as those of infants, children or professional persons. The observer takes a position at a place where his presence is the least disturbing to the group but from where he can observe in detail the behaviour of an individual under observation or some specific characteristics of a small group. It permits the use of recording instruments and the gathering large quantities of data.

In another sense, observation Technique may be of two types on the basis of degree of control put in the system of observation :—

- Controlled observation, and
- Un-controlled observation.

Controlled observation is a systematic observation which is based on logic and reasoning. This type of observation is carried out on the basis of a plan previously drawn. In this type of observation, an attempt is made to exercise control over the phenomenon. This is done according to a particular plan, as a result of which it is possible to make an objective study and keep the observation free from bias and prejudices.

Un-controlled observation is made in the natural surroundings. There is no planning on the basis of which observation is made. In this method, the observer does not examine the problem but he is an active participant in the factors and the conditions that are responsible for the problem. Through this participation, he acquires knowledge about social relations and social problem.

Requisites of Good Observation

As a research technique observation needs —

1. 1) Proper planning,
2. 2) expert execution, and
3. 3) adequate recording and interpretation.

1) Planning for Observation :

The aspects one must consider in detail while planning to employ observation as a research techniques are :

- Definition of specific activities or units of behaviour to be observed.
- An appropriate group of subjects to be observed.
- Scope of observation of the target individual or group to be observed.
- Determination of length of each observation period, number of periods and interval between periods.
- Deciding about the instruments, and the form of recording and physical position of the observer in action.

- Determining the special conditions required for the subjects.
- Preparation and validation of proper tools for recording observations.
- Getting one self trained in terms of technicalities as an observer.
- A keen insight and analytic skills of the observer.

2) Execution of Observation :

A good observation plan may not lead to success unless it is followed up with skill and resourcefulness. An expert execution demands :

- Proper arrangement of special conditions for the subject.
- Assuming the proper physical position for observing.
- Focusing attention on the specific activities, or Blocks of behaviour under observation.
- Handling well the recording instruments to be used.
- Utilising the training received in terms of expertness.

3) Recording and Interpreting Observation :

The two common procedures for recording observations are :

- Simultaneous, i.e., when the observer goes on recording his observations simultaneously with the occurrence of the phenomena observed as in time sampling.
- Soon after the observation, i.e., when the observer undertakes to record his observations not simultaneously with his actual observation process, but immediately after he has observed for a Block of time, while the details are still fresh in his mind.

Which of the two methods to use must depend on the nature of the group, the type of activities or behaviour to be observed and the skill of the observer. Both the types have their merits and demerits. The simultaneous form of recording observations may district the subjects, while the other one may fail in being complete and exact.

For a systematic collection of data through observation, the devices of recording often used are:

- Check Lists,
- Rating Scales,

- Score Cards,
- Scaled Specimens, and
- Blank forms for tallying frequencies.

The use of properly constructed proforma of the above mentioned kinds helps in the summarising and quantifying of data collected by observation.

Requisites of Good Observation

Observation as research technique is being refined and made exact to an extent that it is likely to make an important contribution in descriptive research.

Significant aspects of personality which express themselves in behaviour can be best studied directly through observation rather than indirectly through questionnaire and interview.

Simple observation of physical aspects of school buildings or students and teachers, etc. is made through physical examination, measurement, assessment and comparison with fixed standards. Observation of physical activities as in games and athletics and in the work shop is made directly very often for coaching purposes.

Observation in the classroom is made to analyse learning behaviour which is a more complex phenomenon, and to improve classroom performance. Short, periodic classroom or other observations of purils' behaviour recorded and filed in the cumulative records of the pupils save as anecdotal evidence and supply data for research studies.

Let Us Check Our Progress

1. State the uses of observation technique in educational research.
2. How can you improve quality of obsevational data ? — Give two points.

6.2.2 : INTERVIEW TECHNIQUE

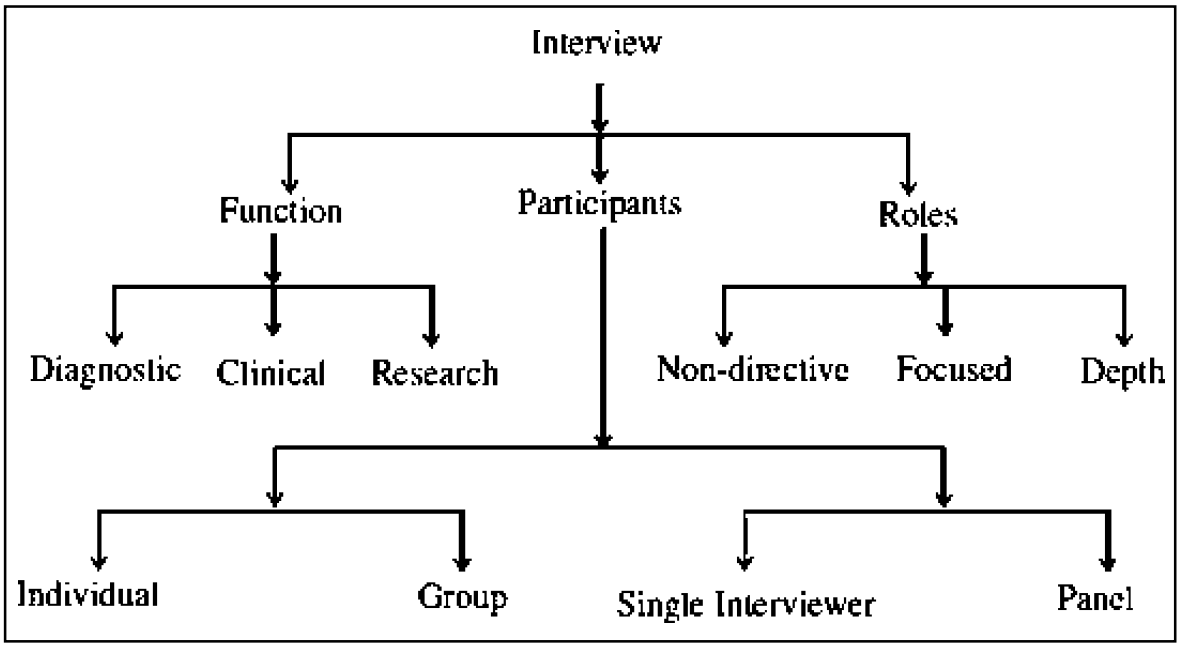
Interview as a research technique is in a sense, an oral type of questionnaire or schedule whereby the subject supplies needed information in a face to face relationship. "The dynamics of interviewing, however, involve much more than an oral questionnire". (Good, C.V.) It is based on a process of communication or interaction between the interviewer and the interviewee or respondent.

A good interview is based on proper motivation provided by the interviewer to the respondent in the form of achieving some practical ends or some satisfaction in the relatively more flexible a tool than any written inquiry form and permits of explanation, adjustment and variation according to the situation.

Types of Interview

Three main bases of classifying interviews may be distinguished as below :

- Function of interview,
- Number of persons participating and
- Roles assumed by the interviewer and interviewee.



i) Diagnostic Interview :

It is used frequently in clinics as well as by social workers or by a teacher. It proposes to locate the possible causes of an individual's problems through getting information about his past history, family relations and personal adjustment problems, quality of educational performances, etc.

ii) Clinical Interview :

Following the screening of diagnostic interview, clinical interview takes place as a means of introducing the patient to therapy. It may take the form of guiding friends and relatives or a

student in their dealings with the patient, or of an exit or termination interview before the patient is discharged from the clinic. It is for remediation.

iii) Research Interview :

For the purpose of research, interview may be used as a tool for gathering data required by the investigator to test his hypothesis or solve his problems of historical, experimental, survey or clinical type.

iv) Individual and Group Interview :

In the past, individual interviews, that is, the practice of interviewing one person at a time, were much more common than the group interviews. These days, however, they are being replaced or supplemented by group interviews. A proper setting for group interview required a group of not more than 10 to 12 persons with social, intellectual and educational homogeneity which ensures effective participation of all. A circular seating arrangement with the interviewer as one of the group is conductive to full and spontaneous participation of all.

v) Single-Interviewer and Panel Interviews :

Both individual and group interviews may be conducted by a single interviewer or a panel of interviewers, according to the design and purpose of the interview. Usually, interviews for selection and treatment purposes are held by a panel of interviewers composed of experts in different but related fields. Interviews for research purposes are usually held by the single investigators the number of interviews in a panel should not be more than 3 to 4 as a larger panel tends to scare and confuse the respondents.

vi) Non-directive, Focused and Depth Interviews :

In relation to the socio-psychological process of interaction, the interviewer and interviewee may assume different roles to suit the requirements of the interview. Non-directive, Focused and Depth interview are terms used for types of interview which are all unstructured or unrestricted by a definite series of pre-planned questions. In these types of interview the subject matter and field of inquiry are certainly definite and preplanned but the interviewer is largely free to arrange the form and order of questions.

The Non-directive interview includes questions of the open-end form and permits much freedom to the interviewee to talk freely about the problems under study.

Directive approach, on the otherhand, is structured and includes questions of the closed type or suggestive and definite in a prepared order.

The Focused interview concentrates on some particular event or experience rather than on general lines of inquiry about it. It aims at determining the responses of individuals to specific communication situations like a movie or a speech. It involves an unstructured form, a non-directive approach, and artistic and empathetic skills.

The Depth Interview is an intensive and searching type of interview with emphasis on such psychological and social factors as attitudes, emotions or convictions. It determines the respondent's degree of detachment or attachment towards an experience or an activity. It usually involves flexibility of interview situation, focus on feelings and a restatement to implied or expressed feelings.

Beside the above classification there are structured and unstructures Interviews as the types of interview on the basis of form or nature of interview.

Structured interview is a type of interview in which the form is already determined. There is everything written about the material to be collected. The interviewer or the field worker has only to carry out the instructions.

Unstructured interview is an even informal type of schedule in which interviewer has full freedom. He can use the language or the words that he likes. There is no binding in regard to the objectives or the methodology.

Requisites of a Good Interview

As a tool of research good interview requires —

- Proper preparation,
- Skilful execution,
- Adequate recording and interpretation.

i) Preparing for Interview :

The following factors need to be determined in advance of the actual interview :

- a clear conception of the purpose and of what information is needed;
- the kind of interview best suited for the purpose.
- a clear outline, schedule or checklist of the best sequence of questions and simulating comments that will systematically bring out the desired information, and
- a well thought out plan for recording responses.

ii) Execution of the Interview :

- The initial task of securing the confidence and co-operation of the subject of building what is called rapport requires and expertness and sensitivity almost amounting to art.

- Securing desired information through asking the planned sequence of questions should be done in not too rigid a manner but with stimulating and encouraging comments and necessary explanations and recording.

- The recording device selected should be used without distracting the interviewee.

iii) Recording and Interpreting Responses :

- It is best to employ, if possible, a device of recording which would retain the actual wording of the responses. Tape-recording is convenient and not too expensive if a tape-recorder is available. It permits a complete and objective analysis at a later time by preserving the actual words as well as the tone of voice and emotional impact of the responses.

- If the responses to questions in the interview have to be noted down, in can be done either simultaneously with the interview or immediately after it. The former is often found to be of a distracting nature while the latter often fails in being complete in detail. For using either of these devices successfully a skilful and practised hand is necessary.

- Some times, instead of recording responses, the interviewers tend to record their evaluations of them as the interview goes on. It is, however, advisable to interpret and evaluate the responses later, on the basis of the recording of responses, rather than simultaneously. Hurry and lack of thought can easily destroy the process of thorough interpretation required for the purpose.

Uses of Interview :

The interview, with skilful interviewers, is much superior to other data-gathering devices because —

1. i) people are usually more willing to talk than to write, especially on intimate, confidential topics;
2. ii) the purpose and meaning of questions can be better explained to get valid responses;
3. iii) the sincerity and insight of the interviewee can be judged through cross- questioning;

4. iv) a depth and penetration of response can be achieved in areas where human motivation is revealed in the reasons for actions, feelings and attitudes concerned;
5. v) there is no chance for the respondent to edit his earlier answers in the light of later questions and thus disturb the advantage of saliency questions.

It is specially appropriate when dealing with young children, illiterate and those with limited intelligence or for teachers, parents, managers, etc.

Often the interview is used for practical purpose rather than for gathering data for research. It is used, for example, for student counselling, for occupational adjustment, for selection of candidates for education or employment, for psychiatric work, for commercial or social surveys, and for legal proceedings, etc. It is now frequently used as a research tool in historical, experimental, case — clinical and normative studies.

Let Us Check Our Progress

1. Write down the Types of Interview.
2. State the importance of an Interview.

6.2.3 : QUESTIONNAIRE

This is another kind of research data gathering tool.

Introduction

One of the most popular and widely used techniques of data collection used in field surveys is the questinnaire. A questionnaire is a form containing a series of questions and providing space for their replies to be filed in by the respondent himself. According to Barr, Davis and Johnson, “A questionnaire is a systematic compilation of questions that are submitted to a sampling of population from which information is desired”. Lundberg says, “Fundamentally, the questionnaire is a set of stimuli to which literate people are exposed in order to observe their verbal behaviour under these stimuli”.

Types of Questionnaire

It is useful to know the various forms in which questions can be prepared and asked.

Structured Vs Non-Structured : The structured contains definite, concrete and directed questions, whereas non-structured may consist of partially completed questions or statements. A non- structured questionnaire is often used as the interview guide, which is non-directive. The interviewer possesses only a blueprint of the enquiries and he is largely free to arrange the form or statements of the questions. The enquiries framed in a general form before hand are given a specific form during the actual process of interview.

Closed form Vs Open form : The questions that call for short check responses are known as restricted or closed form type. They provide for marking a yes or no, a short response, or checking an item out of a list of given responses. It restricts the choice of response for the respondent. He has simply to select a response out of supplied responses and has not to frame his response in his own way.

The open form, open end or unrestricted type questionnaire calls for a free response in the respondent's own words. The respondent frames and supplies his own response. No clues are provided. It probably provides for greater depth of response. The subject reveals his mind, gives his frame of reference and possibly the reasons for his responses.

Fact and Opinion Questionnaires : Lindberg classified questionnaires as — 1) Questionnaire of fact, which requires certain information of facts from the respondent without any reference to his opinion or attitude about them, and 2) Questionnaire of opinion and attitude in which the informant's opinion, attitude or preference regarding some phenomena is sought.

Characteristics of a good Questionnaire

- It deals with an important or significant topic so that it enthuses respondent to give response.
- It seeks only that data which cannot be obtained from the resources like books, reports and records.
- It is as short as possible, only long enough to get the essential data.
- It is attractive in appearance, neatly arranged and clearly duplicated or printed.
- Directions are clear and complete, important terms are classified, each question deals with a single idea, and is worded in as simple and clear manner as possible and provides an opportunity for easy, accurate unambiguous response.

- The questions are objective, with no clues, hints or suggestions as to the responses desired. Leading questions are carefully avoided.

- Questions are presented in good psychological order proceeding from general to more specific responses.

Construction of Questionnaire

Constructing a good questionnaire requires both ability and perseverance on the part of the researcher. He should not use a 'shotgun approach' by attempting to cover his field of investigation broadly in the hope that some of the responses will provide answers for which he is searching blindly. There are some hints which a researcher may consider useful while constructing, administering and analysing a questionnaire.

1. Purposes of the Questionnaire : A good questionnaire must serve two major purposes. First, it must translate the objectives of an investigation into specific questions, the answers to which will provide the data necessary to test the hypotheses and explore the area defined by the objectives. For this, each question must convey to the respondent the meaning of each objective so that the responses thus obtained can be analysed and interpreted properly in the light of the research objectives.

Secondly, the questionnaire must motivate the respondents to communicate the required information. It is essential to include a courteous and carefully constructed covering letter to explain the purpose of the study.

2. Language : In the construction of a questionnaire, the primary criterion for the choice of language is that the vocabulary and syntax should offer maximum opportunity for complete and accurate communication of ideas between the researcher and the respondent. Since the researcher has to depend on written language alone to get the required information, he has to be careful while phrasing the questions. There are some principles that might be employed to make the questions more precise. According to Best and Kahn (1992, pp 184-185) following are the principles of making the questions more precise :

- Define or quality terms that could easily be misinterpreted.
- Be careful in using descriptive adjectives and adverbs that have no agreed upon meaning.
- Beware of double negative.

- Be careful of inadequate alternatives.
- Avoid the double-barrelled questions. Divide them into two questions.
- Underline a word if you wish to indicate special emphasis.
- When asking for rating or comparisons, a point of reference is necessary.
- Avoid unwarranted assumptions.
- Phrase questions so that they are appropriate for all respondents.
- Design questions that will give a complete response.
- Provide for the systematic quantification of responses.
- Consider the possibility of classifying the responses yourself, rather than having the respondent choose categories.

3. Information level of the respondents : The assumptions about the expertise of the respondent in a particular field or the amount of information he possesses should not be unrealistic. The information elicited by the questionnaire must lie within the respondent's present level of information.

4. Social acceptance of responses : The questions must provide the respondent a range of responses which meets his criteria of social acceptability. A question constitutes a threat to the respondent's ego if he is required to give an answer which he feels is socially unacceptable. The respondent should not be confronted with the necessity of giving a socially unacceptable response to a question. The annoying or embarrassing questions must be avoided.

If the information desired from the respondents is of intimate or delicate nature, consider the possibility of providing for anonymous responses to get objective and reliable information. Even if the respondent's name is necessary for the purposes of classification, it is essential to assure the respondent that his responses will be kept strictly confidential.

5. Leading questions : The questions should be objective with no leading suggestions as to the most appropriate response.

There are some words which involve respondents emotionally, either favourably, in a particular culture. It is advisable not to make use of such emotionally 'loaded' words while phrasing questions of a questionnaire.

6. Sequence of questions : First, the questions should be limited to a single idea or to a single reference.

Secondly, the questionnaire maker needs to give thought to the arrangement of the questions in a questionnaire. The questions should be so arranged that they permit the ideas of the respondents to flow logically. The sequence of questions must facilitate the easy progress of the respondent from item to item and it should lead the respondent to anticipate the next question. Questions should be presented in a good psychological order by adopting the 'funnel approach'. This is a procedure of asking the most general or the most unrestricted questions first and following it with successively more specific and restricted questions. This order helps the respondent to organize his own thinking and motivates him to respond logically and objectively.

7. The form or type of questions : Another important consideration that weighs in the matter of constructing a questionnaire is that of 'form or type' of questions. The questionnaire may contain closed or open type of questions. Each type of these questions has its merits and limitations and the questionnaire framer must decide which type is more likely to supply the information required. In some research situations, it is useful to include both the open and the closed type of questions in combination.

8. Length of the questionnaire : A questionnaire should not be any longer than is necessary. The total number of questions must not be so many as to tire or bore the respondents. If too many questions are asked and the respondent becomes tried, the questions at the end of the series may not be well answered. If it is necessary to include a larger number of questions, it is advisable to have two separate questionnaires.

9. Expert's opinion : It is advisable to get all the help from experts for planning and constructing a questionnaire. Questions should be submitted to the experts for criticism and modified accordingly.

10. Preliminary try out the questionnaire : No matter how careful the questionnaire maker has been in phrasing his questions and designing his questionnaire, he needs to try them out with a few representative samples of the respondents before launching into the actual investigation. The first purpose of the pre-test is to examine the questionnaire from the research point of view. Sometimes the tryout calls for major revision of the questionnaire and several try-outs are required until a workable questionnaire is developed.

The second purpose of the tryout is to determine the extent to which the questionnaire fulfils the following two criteria :

i. Does the questionnaire promote a congenial and appropriate relationship with respondents ?

ii. Do respondents understand the questions without having to be explained or reworded?

11. Validation of a questionnaire : The validation of a questionnaire utilizes the same principles and procedures as the validation of any tool of measurement. Each question of the questionnaire must be related obviously to the topic under investigation. In some situations, the questionnaire is validated against the actual overt behaviour, which acts as the external criterion. This is done by relating question responses with the actual behaviour. Follow-up observations of respondent behaviour at a particular time or at some time in the future are also used to estimate the predictive validity of some types of questionnaire.

12. Reliability of a questionnaire : The test-retest method is the feasible approach to the working out of the reliability of questionnaires. The comparison of responses of an alternate form with the original form of questionnaire is also made to estimate the reliability. Besides, consistency of the question responses, the accuracy of responses and the comparison of the accuracy of question responses to the interview may also be taken note of while talking of the reliability of questionnaire.

13. Administration of a questionnaire : The questionnaire can call for written or oral responses. Some questionnaire are designed with the intention that they should be answered in writing, others are designed in a way which require an oral response. Questionnaire which require

14. Analysing and interpreting questionnaire response : Quantification of data obtained by the questionnaire is generally achieved through tabulation and counting. The totals are converted into proportions or percentages. Calculation of contingency co-efficient of correlation is often made in order to suggest probability of relationship among data. Computation of chi-square statistics is also advisable.

Uses of questionnaire

Questionnaire method is a method of social research which is employed when the area of study is wide and the subjects or respondents are widely dispersed. In this method, the investigator or the researcher does not collect information by himself. He relies on the information provided by the respondents.

It is mainly used —

- to collect information from the respondents scattered in a wide area.
- to achieve success in collecting reliable and dependable information.
- to describe the individual or group characteristic. In other words, it provides description about age, sex, marital status, occupation, income, political affiliation, religious affiliation membership to some civic group or corporation, etc.
- to measure individual and/or group variables like attitude, opinion, personality traits, etc.
- to collect data through INTERNET system.

Let Us Check Our Progress

1. Mention the first two steps of Questionnaire development.
2. Mention the uses of Questionnaire an educational research.
3. Explain the principles to be followed for constructing a Questionnaire.

Unit – 3

SOME RESEARCH TOOLS & TECHNIQUES - B

6.3.1 : RATING SCALE

It is a subjective method. Through this one can find out what others say about a particular person. Rating is a term applied to an expression of opinion or judgment regarding some situation, object, character or attribute. Rating scales refer to a scale with a set of points which describe varying degrees of the dimension of an attribute being observed. The tool may be of self rating too.

Rating scales are broadly classified into two categories :

- Graphic Scales
- Numerical Scales

In a typical numerical scales a sequence of definite numbers is supplied to the rater or to the observer. The observer assigns, to each stimulus to be rated, an appropriate number in line with those definitions or descriptions. For example, the following Scales may be used in obtaining ratings of the affective values of colours on 9-points Scales which may consist of different points.

9. Most Pleasant
8. Extremely Pleasant
7. Moderately Pleasant
6. Mildly Pleasant
5. Indifferent
4. Mildly Unpleasant
3. Moderately Unpleasant
2. Extremely Unpleasant

1. Most Unpleasant

Instead of a 9-points Scale one can have three point scales, 5-points Scale or 7-Scales too. In a three point scale we can have:

3. Most Pleasant
2. Indifferent
1. Most Unpleasant

Numerical rating scales are the easiest to construct and to apply. They are also the simplest in terms of handling the results. However, numerical scales are often rejected in favour of the other of other types of scales because it is believed that they suffer from various biases and errors.

Graphic Scale

The graphic scale is the most popular and the most widely used type of rating scales. In this scales, a straight line is shown vertically or horizontally with various clues to help the rater. The line is either segmented into Blocks or continuous. If the line is segmented, the number of segments can vary from case to case. An example of such scales is given below:

1	2	3	4	5
Very effective	Slightly Effective	Average	Slightly ineffective	Very ineffective

There are many advantages in graphic scales. They are simple and easy to administer. Such scales are interesting to the rater and require little added little motivation. However, scoring in the case of some formats of graphic scales is rather laborious. Uses of Rating Scales

I. Rating methods are quite interesting to the rates, especially if graphic methods are used;
II. Best rating can be obtained by presenting one stimulus to a rater at a time;
III. Rating scales can be used with rates who have very little training for the purposes;
IV. Rating scales can be used with a large numbers of stimuli;
V. Rating scales have much wider application and can be used for teacher ratings, personality ratings, school appraisal, sociological survey, etc.

Let Us Check Our Progress

1. State the uses of Rating Scale.
2. What are the two main types Rating Scale ?

3.2 : ATTITUDE SCALE

Introduction

An attitude scale is mainly meant to provide quantitative measure of an individual's disposition towards the person, object, event, situation, task or an idea which includes a set of questions or statements about the same to be responded by individual or student two popular and useful methods of measuring attitudes, commonly used for research purposes are the Thurstone Type Scale and Likert Type Scale.

a) Thurstone Type Scale : Thurstone's technique of scaling attitude tests is known as the method of equal appearing intervals. In this method, statements both favourable and unfavourable, bearing on a particular topic, are obtained from a group of selected writers, other experts and layman. These statements are edited, then they are classified by a large number of judges on an eleven point scale arranged according to the median value of each statement. The respondents are directed to respond any one answer or co-ordinations out of the eleven choices which is applicable for them.

b) The Likert Type Scale : In this scale, each item or statement is generally followed by five responses, one of which is checked by the subject.

These five categories of responses are —

i) Strongly Agree (SA),

ii) Agree (A),

iii) Undecided (U),

iv) Disagree (D), and

v) Strongly Disagree (SD).

The individual statements are either clearly favourable or unfavourable about the theme/ issue/ construct to be asserted. To score the scale, the alternative responses are credited 5, 4, 3, 2 or 1 respectively from the favourable to the unfavourable end.

Besides these above two scales others are like :

Standardised Scales : This is another technique of testing attitudes. The subject has to choose an item out of the given items which according to his view is correct.

Some Hints on making Attitude Scale Items

Study the lists of statements prepared and used for measuring attitude by investigators in related areas of research. Or the attitude to be assured. Such as a new practice in examination, a new subject of the Curriculum, etc.

- Survey widely available literature on the subject.
- Meet and talk to various individuals on the subject. Make them express their ideas on subject orally or in writing.
- Collect statements, both favourable and unfavourable, from the above three sources rather then inventing them yourself.
- Collect a larger number of statements than you need for your scale. Select the statements —
- which present as wide a variety of situations as possible;
- which prevent the individual from detecting the nature of the attitude which is being evaluated;
- which do not mention the attitude object or even any stereotype associated with it, as antagonisms or prejudices are aroused by mention of such terms as Socialism, Reds,probitionists etc.;
- which have proved to be unambiguous in their meaning through a pilot study.
- Arrange the statements in a random order irrespective of their favourable or unfavourable indications.
- Keep the number of favourable and unfavourable statements approximately equal.
- Finally, make analysis of the item to be selected on the basis of some psychometric Criteria.

Uses of Attitude Scales

- Attitude scales are needed to enable the students to develop desirable attitudes for better survival in the world.
- In educational research, these scales are used especially for finding the attitudes of persons on different issues.

- Attitude scales are used to assist the teachers in measuring the attitudes of the students and so to change in a required manner.
- These scales are useful for the teachers to know their students attitude towards an occupation.
- Attitude scales are useful for parents to change the attitude of their children in required direction.
- These scales may be used for the head of the institutions regarding their preference/ opinion/value with regard to their administrative styles.

Let Us Check Our Progress

1. What is the Uniqueness in Thurstone Type of Attitude Scale ?
2. Mention at least uses of Attitude Scales in Educational Research.

6.3.3 : PERFORMANCE TEST

In a performance test language is used only in the instructions or not at all when directions are given in pantomime. The task to be performed requires an overt motor response other than verbal. The principal characteristic of the performance test is that a response to or solution of the task does not require the use of language or number. In psychology, performance tests may be in the cases of assessment of intelligence or some dimensions of personality of subjects. In the words of Anastasi (1982), performance tests involve the manipulation of objects, with a minimal use of paper and pencil.

She has also termed them non-language tests. Still another related category is that nonverbal tests. More precisely designated as nonreading tests. Most tests are for primary school and preschool children fall under this category. Performance tests have proved most valuable when used with persons handicapped by language disabilities, such as deaf, the foreign language-speaking groups, the illiterates and those who have speech and reading disabilities.

In educational parlance, Ebel and Frisbie (1991, pp. 116-117) maintain that performance tests can be used to determine if students can apply the knowledge and skills they have practiced and learned and the assessment requires demonstration of their achievement through means of

other than paper-pencil. Students frequently involve skills learning that contain one or more psychomotor components (movements, use of hands, hand-eye coordination, etc.). They have categorized the methods of performance testing in three broad headings : identification tasks, work products, and simulations.

Identification tasks may require students or subjects (persons to be assessed) to name objects, differentiate between objects given their names, or identify objects according to their function or relationship to other objects.

Secondly, **work products** can be used to evaluate procedures involved in accomplishing a task or to determine the quality of the product (drawing, lab work, and field work-based products).

Thirdly,**Simulation** the most common form of performance testing are contrived situations established for the purpose of observing student behavior, for example, assessing speed, accuracy and quality of work or behavior expressed or demonstrated if an appropriate outcome is achieved. In real or simulated teaching one supervisor may observe the teaching skills demonstrated by the student teachers or a dance teacher watches their students do the swing or polka, music teacher listens for proper notes and cadence.

Performance testing may be formative as well as summative. Performance tests serve unique evaluation purposes in the area of educational research data gathering. However, they may pose some measurement problems. The tasks or expressive behaviors to be assessed must be operationally defined and observed accordingly.

There are several tests that have been developed for assessment of intelligence. The following are the most popular test of performance:

- Binet test of Intelligence
- The Pinter - Patterns Scale
- The Cornell - Cox Scale
- Koh’s Block Design tests
- Alexander Pass-along tests,
- Bhatia’s Battery of Performance Tests of intelligence. Uses Performance Test

■ Performance tests are found most useful with persons handicapped by language disabilities - the deaf, the illiterate and persons with a foreign language. They provide essential in formal children who have been handicapped on verbal tests, because of speech or reading disabilities. A shy, inarticulate child or a child who fees discouraged when confronted with verbal tests because of his repeated school failures may perform more satisfactorily on less academic tasks.

■ Performance tests provide tasks in which all the aspects of the problems are visually present before the subject. At least some individuals proceed to solve them with some confidence, though they feel shy and blocked when solving problems on a verbal scale.

■ Experimental evidence indicates that supplements to verbal tests. They can be useful as instruments for determining insightful behaviour involving visual perception.

On the whole, performance tests appear useful at lower age levels, lower mental levels and with persons having language handicaps.

Let Us Check Our Progress

1. State the Concept of Performance Test.

LET US SUM UP

In this Block an attempt has been made to make you familiar with research tools. We have presented the essential criteria of a good research tools. In this context we have also discussed the essential criteria, namely Objectivity, Reliability, Validity, Economic, Simplicity, Standardization, Norms, Practicability, Comparability, Discrimination and Environmental Condition. We have also learnt the steps for a construction of a research tool. We have also gained knowledge about the needs of a research tool. We have discussed the construction, types of various tools like Observation, Interview, Questionnaire, Rating Scale, Attitude Scale and Performance Test. The importance of the use of Observation, Interview, Questionnaire, Rating Scale, Attitude Scale and Performance Test has been highlighted. These tools and techniques though presented in different headings, they are used in educational research as per the nature of the problem to be solved through the design of the research.

SUGGESTED READING

1. Sukhia, Mehrotra&Mehrotra (1971) : Elements of Educational Research; Allied Publishers Pvt. Ltd., Delhi
2. Sidhu, K.S. (2002) : Methodology of Research in Education, Sterling Publishers Pvt. Ltd. New Delhi.
3. Koul, L. (2003) : Methodology of Educational Research, Vikas Publishing House Pvt. Ltd. New Delhi.
4. Singh, A.K. (2004) : Tests, Measurements and Research Methods in Behavioural Sciences, BharatiBhawan, New Delhi.
5. Sahu, B.K. (2005) : Statistics in Psychology and Education, Kalyani Publishers, Ludhiana.
6. Sharma, R.A. (2005) : Mental Measurement and Evaluation, R. Lall Book Depot, Meerut.

ASSIGNMENTS

1. What are research tools? Discuss the steps for construction of any type of research tool. Explain the importance of research tools in educational research.
2. What is a Questionnaire ? Mention the characteristics of a good Questionnaive. Discus the procedure of constructing a Questionnaire. How can you improve validity of a questionnaire?
3. Define Interview. Describe the different types of Interviews. Explain the uses of Interview as a research tool in education.
4. What is a test? Explain the characteristics of a good test.
5. Describe the types of Observation. What are the basic requisites of good Observation? How can you increase quality of observation as a research technique.

6. What is Rating Scale ? Discuss different types of rating scale used in educational research.
7. Make a distinction between Questionnaire and Rating Scale.
8. Write short note on :
   (a) Performance test.
   (b) Attitude Scale.
   (c) Critcria of a good measuring tool.

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