TWO-YEAR
POST GRADUATE DEGREE PROGRAMME

M.A. in EDUCATION

SEMESTER-III

COR-315

Pedagogy, Andragogy and Assessment

Self-Learning Material

DIRECTORATE OF OPEN AND DISTANCE LEARNING
UNIVERSITY OF KALYANI
KALYANI-741 235, WEST BENGAL

Course Preparation Team:

Prof. Dibyendu Bhattacharyya
Department of Education, University of Kalyani,
Kalyani-741235, West Bengal

Dr. Shnaoli Chakraborty Acharya
Department of Education, West Bengal State University,
Barasat, Kolkata-700126, West Bengal

Mr. Sajal Chintapatra
Asst. Professor, Department of Education (DODL)
University of Kalyani, Kalyani-741235, West Bengal

Dr. Shampa Sarkar
Asst. Professor, Department of Education (DODL)
University of Kalyani, Kalyani-741235, West Bengal

Structural Editor **: Mr. Sajal Chintapatra & Dr. Shampa Sarkar**

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Foreword

Open and Distance Learning (ODL) systems play a threefold role-satisfying distance learners' needs of varying kinds and magnitudes, overcoming the hurdle of distance and reaching the unreached. Nevertheless, this robustness places challenges in front of the ODL systems managers, curriculum designers, Self Learning Materials (SLMs) writers, editors, production professionals and other personnel involved in them. A dedicated team of the University of Kalyani under the leadership of Hon'ble Vice-Chancellor has put its best efforts, professionally and in unison to promote Post Graduate Programmes in distance mode offered by the University of Kalyani. Developing quality printed SLMs for students under DODL within a limited time to cater to the 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, 2020 had been our endeavour and we are happy to have achieved our goal.

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' and would be gracefully admitted and to be appreciated.

During the academic productions of the SLMs, the team continuously received positive stimulations and feedback from **Professor (Dr.) Amalendu Bhunia,**Hon'ble Vice-Chancellor, University of Kalyani, who kindly accorded directions, encouragements and suggestions, offered constructive criticism to develop it within proper requirements. We gracefully, acknowledge his inspiration and guidance.

Due sincere thanks are being expressed to all the Members of PGBOS (DODL), University of Kalyani, Course Writers–who are serving subject experts serving at University Post Graduate departments and also to the authors and academicians whose academic contributions have been utilized to develop these SLMs. We humbly acknowledge their valuable academic contributions. I would like to convey thanks to all other University dignitaries and personnel who have been involved either at a conceptual level or at the operational level of the DODL of University of Kalyani.

Their concerted efforts have culminated in the compilation of comprehensive, learner-friendly, flexible texts that meet the curriculum requirements of the Post Graduate Programme through Distance Mode.

All the Self Learning Materials have been composed by distinguished faculty from reputed institutions, utilizing data from e-books, journals and websites.

Director
Directorate of Open and Distance Learning
University of Kalyani

Syllabus

SEMESTER–III
COR-315—Pedagogy, Andragogy and Assessment

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Contents

Block-1

Pedagogy, Andragogy, and Assessment

Content Structure

INTRODUCTION

Pedagogy and Andragogy are two concepts that are often used in the field of education to describe different approaches to teaching and learning.

Pedagogy is the art and science of teaching and it is often associated with traditional classroom settings where teachers are seen as the authority figure and students are expected to passively receive information. The focus is on imparting knowledge and skills through a structured curriculum that is designed to meet the needs of the learners. In this approach, the teacher takes on the role of the expert who imparts knowledge, and the learners are seen as passive recipients.

On the other hand, Andragogy is the art and science of teaching adults. It is based on the understanding that adult learners have different needs, motivations, and learning styles than children. Andragogy focuses on creating a learning environment that is self-directed, where the learners take an active role in their learning process. Adult learners are more likely to be motivated by relevance and application of what they are learning to their own lives and experiences. In Andragogy, the teacher is seen as a facilitator, who provides guidance and support to the learners in their learning journey.

While Pedagogy focuses on the traditional approach of teaching children, Andragogy emphasizes self-directed learning and the unique needs of adult learners. Both concepts have their own strengths and limitations, and the choice of approach depends on the learners' needs, goals, and the context in which learning takes place.

OBJECTIVES

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

1. Understand the concept of Pedagogy, Andragogy and Assessment.
2. Study the significanceof Teacher Education.
3. Study Critical Pedagogy and its implications in Education.
4. Analyse different levels of teaching (Memory Level, Understanding Level and Reflective Level);
5. Conceptualize self-directed learning and models of Andragogy.

Unit-I

Concepts of Pedagogy and Andragogy

1.1.1: CONCEPTS OF PEDAGOGY

The meaning of the word pedagogy is derived from the Greek word Paidagogos in which ‘paidos ‘means child and ágMgos means leader; so it literally means to lead the child. In modern context Pedagogy used to refer to the instruction, learning, and the actual operation involved therein and it is not only related to the child instruction rather it suggests Science of Teaching.

According to Oxford English Dictionary in 1571 Pedagogy is the term that describes the relationships and interactions between teachers, students and the learning environment and the learning tasks.

Pedagogy combines the teaching with culture, structure and mechanisms within a social environment. Pedagogy is not therefore simply describing the activity of teaching, but reflects the production of broader social and cultural values within the learning relationship.

1.1.2: MEANING OF PEDAGOGY

Pedagogy may be defined as:

Loughran (2008) defines pedagogy in teacher education as “knowledge of teaching about teaching and knowledge of learning about teaching and how the two influence one another in the pedagogic episodes that teacher educators create to offer students of teaching experiences that might inform their developing views of practice”

Pedagogy has been described as the act and discourse of teaching according to Alexander, 2004.

- Pedagogy can be defined as the understanding of how learning takes place and the philosophy and practice that supports that understanding of learning.
- Pedagogy is concept that is related with child learning.

- Pedagogy is the study of teaching activity and it is convey in a manner that will lead to better learning in students.
- Pedagogy is the exploration of effective teaching and learning strategies
- Pedagogy involves being able to convey knowledge and skills in ways that students can understand, remember and apply.

What is the pedagogical approach?

- **Constructivist:** It is based on active participation of students in teaching learning process for understanding and gaining knowledge rather than just passively receiving information. It accelerates the critical thinking in which they can connect with what they are perceiving.
- **Collaborative:** It is based on teaching and learning in a group so that they learn together and work to solve in terms of group activity, make strategies, ideas, create products or complete a task. It is a joint venture to carry out a problem in an educational set up.
- **Integrative:** It includes teaching with the following objectives:
  - Understanding learning
  - Differentiating any topic from the other view points
  - Pragmatic lessons.
  - Associating the concepts.
- **Reflective:** It is based on self-reflection. The students are expected to have a self-evaluation.
- **Inquiry-Based Learning:** It aims to take the students from the position of wondering about a question to understanding the answer and then questioning it further.

Importance of pedagogy in teaching

- **Improves Quality of Teaching:**
- **Encourage Cooperative Learning Environment**
- **Eliminates Monotonous Learning:** It accelerates learning among the students such as analysing, creative thinking, and evaluation. Further, it makes students more receptive to what the teacher is teaching.
- **Student Can Follow Their Ways of Learning:** It caters to the learning abilities of different students.
- **Convenient Learning Approach for all:** Inclusion of differently abled learners.

- **Improves Teacher-Student Communication:** The teacher understands the student in a better way which helps them to focus on the student's weaknesses and guide them.

Types of pedagogy

Types of pedagogy are:

- **Social Pedagogy: It is** based on the concept for development of social-awareness and well-being of the students. The teaching must consist of social parameters. Actually it is visioned for the society.
- **Critical Pedagogy:**It is based on critical understanding and thoughts or beliefs on a certain topic.
- **Culturally Responsive Pedagogy:** It encourages multiculturism existing among the students and increases awareness about cultural differences in school.
- **Socratic Pedagogy:**It is based on knowledge from the other sources along with what it is generally available within the institution.

How does pedagogy impact the learner?

- **Student-centred approach:** Pedagogy is a student-centered approach in which the students take responsibility for learning in their ways.
- **Continuous assessment of students:** Teachers evaluate the students regularly to see if they are improving and moving towards their target outcomes.
- **Encourages teamwork:** The study methods encourage teamwork and group projects for the students to meet like-minded individuals and work with them
- **Develops cognitive skills:** Helps students to develop cognitive skills using evaluation, detailed analysis, comprehension, and application of the courses

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1.1.3: PEDAGOGICAL ANALYSIS

Pedagogy is the art (and science) of teaching. Effective teachers use an array of teaching strategies because there is no single, universal approach that suits all situations. The term pedagogical analysis is made up of two words pedagogy and analysis. So it is a type of analysis based on pedagogy.

What is pedagogical analysis

Pedagogical analysis may be defined as the way of effectiveness of teaching by analysing content structure of a topic followed by teaching methodology.

There are different interpretations on the steps in pedagogic analysis of a teaching content. The famous pedagogic steps by Herbert are known as Herbartian steps commonly used as lesson plan. These five steps include:

a) Preparation b) Presentation c) Association d) Generalizatione) Application

Components and Operations Involved in the task of Pedagogical Analysis

Pedagogical Analysis of the subject being taught to a particular class the following operations to be performed :

1. **Content analysis:** One of the most important task for pedagogical analysis where unit/topic/single concept being taught by the teacher in the subject is getting structured in terms of contents to explore the content itself and simultaneously it provides content weitage to make the lesson plan in a proper way.
2. **Instructional objectives**: Objectives for teaching and learning to be decided in specific behavioural terms. Instructional objectives giving directions the process of teaching for fulfilments of the lessons of a particular class.
3. **Methodology of Teaching:** Methods, techniques, teaching learning activities for the teaching learning of a particular topic to be determined by the teacher with the help of intended objectives of the lesson to be implemented.
4. **Evaluation System:** Evaluating the outcomes of the teaching learning process carried out for the teaching to be determined.

The following cyclic model may be suggested for executing any Pedagogical Analysis:

Source: Internet

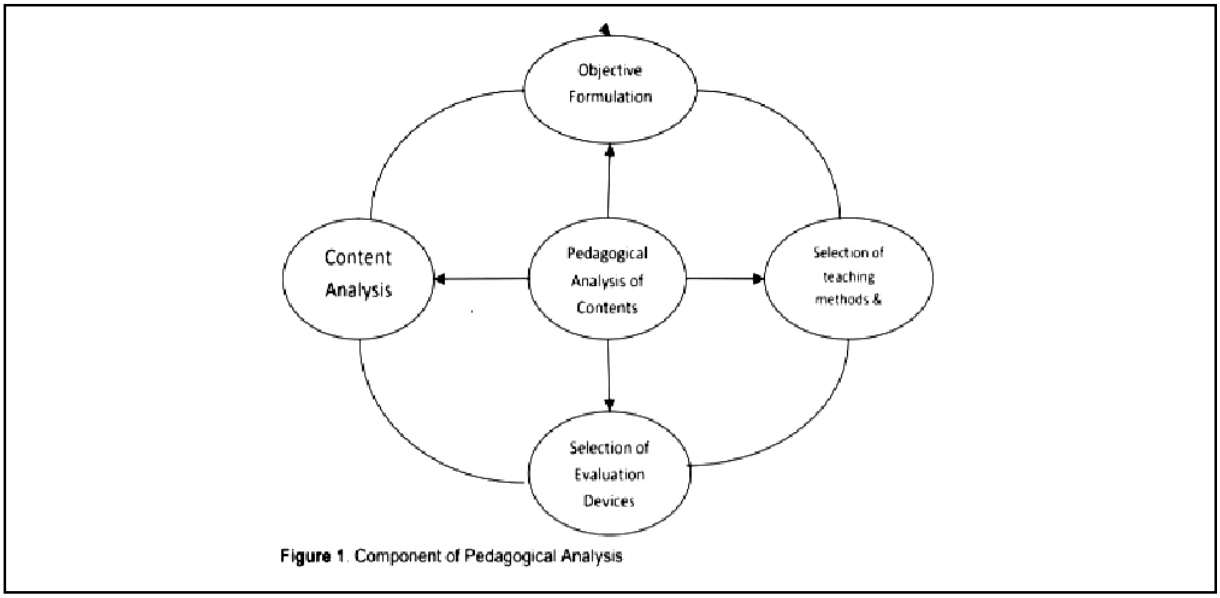


Figure 1. Component of Pedagogical Analysis

In this way when a teacher is asked to perform pedagogical analysis of the contents of a subject/unit or topic to be taught in the class he has to go through the cycle of the above mentioned four components namely

(i) Content analysis

(ii) Objectives formulation

(iii) Selection of the teaching method and material and

(iv) Selection of the evaluation devices.

1.1.4: STEPS OF PEDAGOGICAL ANALYSIS

Step-1: Contents of a unit to be divided into appropriate sub-units and arrange the selected sub-units in to a number of required Credit hours.

Step-2: Summarise each content of the selected sub-unit.

Step-3: Connect previous knowledge required for the sub-unit.

Step-4: Instructional objectives to be selected for each sub-unit.

Step-5: Teaching strategies to be implemented with the following components:

i Teaching Methods to be selected.

ii. Teaching aids along with other supporting materials to be prepared.

iii. Methods to be elaborated properly.

iv. Write probing questions and provide appropriate answers for them.

v. Work sheet for the sub unit to be prepared.

Step-6: Insert suitable examples/illustration/analogies for the sub-unit.

Step-7: Prepare a table of specification for the sub-unit.

Step-8 Write criterion referenced test-items each with specific criteria for the sub-unit.

Need of Pedagogical analysis: Pedagogical analysis is a key to effective teaching and to make a proper understanding towards contents and its effective presentation it opens the way of structuring and restructuring of content material in a classroom situation. Following paragraphs are some of the basic points to be under consideration giving a highlight of the topic collected from the Internet specially

- Pedagogical analysis is inevitable for selecting appropriate objectives and strategies in various instructional situations to implement the teaching successfully
- It facilities effective teaching.
- It is related to several logical steps.

- It provides the students to understand the concepts, and underlying principles.
- It helps the teacher to implement the evaluation procedure
- It helps the teacher to design a plan of action to for immediate feedback, diagnosis and remediation
- It makes the instructional programmed more systematic and content appropriate.
- It reveals the place of subject in all the educational process.
- It an insight to the teacher to plan his teaching
- It distinguishes the objectives of teaching subjects at different levels and in different medium from each other.
- Through it a teacher also come to know about the different objectives to be achieved by teaching different content in classroom
- It is a tool to achieve the cognitive, affective and psychomotor development of a student.

Importance of Pedagogical Analysis in Teaching

- Improved quality of learning
- Students more receptive during learning sessions
- Improved student participation
- Knowledge imported effectively across a spectrum of learners
- Development of higher cognitive skills in students
- It helps the place of any unit of the text book in the structure of the subject
- It creates the attitude in the teacher trainee for deciding the training strategies according the different levels of students

Objectives of Pedagogical Analysis:

- It accelerates effectiveness of teaching activity.
- To is output based and to be realised in terms of expected behavioural outcomes.
- Understand to your own teaching style and integrate it with learning style.
- Plan activities that promote higher order thinking skills.
- Identify the unique challenges teaching online presents with regard to time management and working with students virtually.
- To analyze the curricular content into meaningful content
- To anticipate comprehensive instructional objectives for each components

- ❖ To design appropriate objective based learning experience for different stages and contents
- ❖ To anticipate strategies for continuous and comprehensive evaluation

Application of Pedagogical Analysis:

- ❖ Systematic plan for the teacher to implement teaching strategies
- ❖ Unit and sub-unit wise time planning for implementation
- ❖ Scientific approach for hierarchical taxonomy of educational objectives.
- ❖ Preparation of stepwise strategies for teaching.
- ❖ Scientific method of evaluation

Merits of Pedagogical Analysis:

- ❖ It encourages met cognition and therefore will develop learner skills or build learning power.
- ❖ Increased independence of students.
- ❖ on task behavior and the quality of work improves as student s take each task
- ❖ improved decision making in real world, complex, real time problem spaces
- ❖ prompts students to engage in information analysis
- ❖ Prompts students to engage in information search.

Limitation of Pedagogical Analysis:

- ❖ Pre-assumption by making a lesson plan or pedagogical analysis always may not suit the class-room learning situation
- ❖ Previous learning outcomes as assumed earlier may not match with the present level of knowledge of the students in the class-room.
- ❖ The format may appear to give a systematic picture of the lesson. Teacher is confined within a hard rigid format of planning, so that flexibility is absent.
- ❖ Teacher should enjoy freedom to divide subunits according to number of periods and there should not be any hard and fast rule for this. There cannot be single criteria for this because teachers plan is bound to change depending on the standard of pupils in different schools.
- ❖ Lesson planning is of different types and teachers follow predominantly any one teaching style out of many. It becomes highly confusing for a reflective teacher to follow any definite lesson plan for every class, for every subject throughout the year.

1.1.5 CONCEPTS OF CRITICAL PEDAGOGY

Critical Pedagogy is a philosophy of education that encourages to be critical towards their reality in an educational set-up specially in the directions:

1. Power structures,
2. Conflicts and
3. Weakness of the system.

Most often associated with the pedagogical thinkers Paulo Freire and Henry Giroux, Critical Pedagogy is a school of thought that deserves to be considered in depth:

1. Underlying concepts.
2. Change & Reform about how we can visualize education.
3. Society and power.

Critical pedagogy is a teaching approach which attempts to help students question and challenge domination, and the beliefs and practices that dominate.

In other words, it is a theory and practice of helping students to achieve critical consciousness. Critical pedagogic educator Ira Shor defines critical pedagogy as:

Habits of thought, reading, writing, and speaking to understand the deep meaning, root causes, social context, ideology, and personal consequences of any action, event, object, process, organization, experience, text, subject matter, policy, mass media, or discourse.

In this tradition the teacher works to lead students to question ideologies and practices considered oppressive (including those at school), and encourage liberatory collective and individual responses to the actual conditions of their own lives.

The student often begins as a member of the group or process (including religion, national identity, cultural norms, or expected roles) they are critically studying. After they reach the point of revelation where they begin to view their present society as deeply problematic, the next behaviour encouraged is sharing this knowledge with the attempt to change the oppressive nature of the society.

Principles of Critical Pedagogy

Critical theorists examine the school not as an instructional space but as a site where negotiations takes place between the various cultures and belief systems for dominance.

Critical pedagogy counters the historical and apolitical analysis of schooling. It focuses on power and politics to make sense of how schooling works in society and the purposes it serves. Although they may differ in the methods entailed, critical theorists have a common objective to empower the powerless and transform existing social inequalities and injustices. They are openly committed to "the side of the oppressed" and seem revolutionary in thought and deed. Here liberation from existing unjust systems is the goal of the method.

Darder, Baltodano and Torres (2009) discuss the philosophical principles of critical pedagogy, but not before they mention that it is a "set of heterogeneous ideas" because there is no set way or formula that can be followed for the implementation of critical pedagogy. They say that this characteristic of this form of education is what makes it serve an "emancipatory and democratic function" (Darder, 2009).

In the same spirit, it may be said that the principles explained here, based on the understanding gathered from the study of various thinkers in the field is not the only way that critical pedagogy can be approached.

1. **Cultural Politics:** In this aspect of critical pedagogy, schools serve as a site of cultural politics, viz. a struggle to decide what and whose knowledge is to be taught in schools because knowledge is intricately entwined with power relationships in society. Therefore, critical pedagogy requires teachers to recognise how schools have followed certain ideologies and practices to perpetuate certain power positions in society and work towards an "emancipatory culture of schooling" (Darder, 2009).
2. **Political Economy:** One of the beliefs of critical pedagogy is that schools function to serve the interests of the ruling elite and against the interests of the marginalised and the oppressed in society. Darder, Baltodano and Torres (2009) say "…public schools serve to position select groups within asymmetrical power relations that replicate the existing cultural values and privileges of the dominant class." Thus, critical pedagogy raises the question of reproduction of class structure, and how schools play a role in this process. Therefore, culture and class in quotidian school life cannot be ignored if students and teachers are to learn who they are and how they are perceived in school and society.
3. **Historicity of Knowledge:** The historicisation of knowledge is an important foundation of critical pedagogy, as it historicises the production of knowledge and the way it is transmitted. "Critical pedagogy supports the notion that all knowledge is created within a historical context and it is this context which gives life and

meaning to human experiences. True to this principle, schools must be understood not only within the boundaries of their social practice but within the boundaries of the historical events that inform educational practice" (Darder, 2009). Similarly, students also need to be understood in a similar manner with the knowledge they bring as having been constructed through the historical process they undergo. Teachers, therefore, are required to create chances for students to understand who they are, and the historical processes that have led to the current situations, which although caused historically by human beings, can also be transformed by human beings.

4. **Dialectical Theory Critical pedagogy:** It is based on the concept of dialectics, which talks of synthesis of two opposing points of view (thesis and anti-thesis) and how this process continues through time. Thus, critical pedagogy "seeks to support dynamic interactive elements, rather than participate in the formation of absolute dichotomies or rigid polarisations of thought or practice. (…) this perspective reformulates the power of human activity and human knowledge as both a product and a force in shaping the world, whether it is the interest of domination or in the struggle for liberation." (Darder, 2009)
5. **Ideology and Critique Ideology:** It is the lens or framework that helps one understand the society we live in. Ideologies get deeply embedded in socio-political and cultural processes and also in the personality of people. Ideology, thus, helps in analysing the "contradictions that exist between the mainstream culture of the school and the lived experiences and knowledge that students use to mediate the reality of school life" (Darder, 2009) as well. Teachers can also use critical pedagogy as a tool to analyse their own assumptions about knowledge, society, power, values etc. and how they affect the classroom experience they design. Thus, ideology works as a starting point to ask questions that will help teachers critically think about their practices and classroom processes. Thus, ideology is used to analyse the various educational processes – curriculum, pedagogy and other schooling processes to understand how it structurally reproduces the dominant culture, and silences that of others.
6. **Dominance: Hegemony** is when the dominant culture becomes so natural that it does not get questioned. Schools are sites where hegemonies are created and perpetuated through persuasive domination rather than violent domination. Darder, Boltodano and Torres describe hegemony as a "process of social control that is

carried out through the moral and intellectual leadership of a dominant socio-cultural class over subordinate groups", based on Gramsci's definition. Understanding hegemony helps teachers of critical pedagogy recognise the responsibility in critiquing and transforming classroom relationships that perpetuate inequalities and further marginalise certain groups. Understanding how domination works also helps teachers to understand how they can resist, challenge and critique the same processes.

7. **Resistance and Counter:** Hegemony Critical pedagogy assumes that all people have the ability to resist domination but how they choose to resist is influenced by their social and material conditions in which they have been forced to survive and the ideologies they have internalised in the process. Counter-hegemony in critical pedagogy is described as the spaces where power relationships are reconstructed to allow for more inclusion and make processes more democratic; thus establishing alternative structures and practices.
8. **Praxis, Dialogue and Conscientisation:** The dialectic principle of critical pedagogy supports the idea that theory and practice are intricately linked to our understanding of the world and actions we take in our lives. Praxis is explained as the continuous interaction between theory and practice that informs all human activity. Therefore, all human activity requires theory to further illuminate it and provide a better understanding of the world as it is and as it ought to be. Praxis, thus, involves problem posing as described by Freire. From this, the principle of dialogue becomes central to critical pedagogy as it leads to the empowerment of the student by challenging the dominant discourses prevalent, thus, allowing for conscientisation.

Why Critical Pedagogy:

Following points to be considered for emergent need for critical Pedagogy:

1. **Critical theory**

   It's easy to imagine how this idea, central to Critical Theory, has later on inspired and supported the development of Critical Pedagogy as predicted by Frankfurt School. If philosophy and knowledge should serve to liberate people from oppression, what is the role of Pedagogy, teachers, and educational institutions? Freire and Giroux's reflections spark exactly from this question: what is the purpose of education?

2. Pedagogy as a Moral and Political practice

"Pedagogy can't be separated from how subjectivities are formed, desires are mobilized, how some experiences are legitimized and others are not, how some forms of knowledge are considered acceptable, while other forms are excluded from the curriculum"

In other occasions, he had added that "issues of social justice and democracy itself are not distinct from acts of teaching and learning".

What Giroux means is that Pedagogy forms, influences and shapes the personalities of the students – their understanding of the world, of themselves in it, their deepest values and even desires. These same students will grow up and become the driving force of their society, acting and making decisions on the base of their personalities and beliefs – which had been vastly shaped by the educational system. How can Pedagogy be seen as something detached from Politics, then?

3. The neutrality of knowledge

"Pedagogy is a moral and political practice, because it offers particular versions and visions of civil life, and how we might construct representations of ourselves and others in our physical and social environment" Giroux continued in the same lecture. This is the reason why Critical Pedagogy supports the belief that Education is never neutral.

In other words, Pedagogy always makes a choice: to either transmit knowledge and values that support and perpetuate the status quo – in terms of politics and culture – or that challenge and dismantle it. Not taking a stand doesn't equal being neutral: it equals conforming to the ways and ideas dominant to the societal context.

4. Democracy and Social Justice

Critical pedagogy views Democracy and Social Justice as the goals education should strive to achieve – but not only: as the values education should be based upon, too. In some interviews, Henry Giroux refers to "the tension between how things are and how they ought to be" as the driving force of social change – which has as an objective, clearly, values such as fairness, equity and freedom.

In the field of Critical Pedagogy, this translates into concrete methodologies that can help the students develop particular skills, which would in the long term contribute to shaping a democratic and fair society. Such skills are, for example, critical consciousness, language and emancipation.

5. Conscientisation

Critical Consciousness is a concept that is central to Critical Pedagogy: k12 Academics defines it as "going beneath surface meanings, first impressions, dominant myths, official pronouncements, traditional clichés, received wisdom, to understand

the deep meanings, root causes, social contexts, ideologies, and personal consequences of any topic".

Freire's idea of 'Conscientisation' indicates the process of an individual or community of acquiring critical consciousness, of becoming aware of one's own context and identity. After the individual begins to perceive the social and political contradictions of their world, it becomes possible to take action and to seek a positive change.

6. **Language and power**

Freire continued by stating that it is impossible to teach language without ideology and power. He proposed that ethnic minorities should be taught to speak and write their native language – and should be shown that it is as beautiful and valuable as the language of the dominant culture. On the side, they should be taught the dominant language, too: to be able to express themselves in what is considered the "legitimate" way – and to articulate the thoughts that will serve their struggle for liberation.

7. **Oppression and Liberation**

As you may have realised by now, Critical Pedagogy is centred on the pursuit of a better, fairer, and more democratic world, as well as the ultimate freedom of its constituents. If Freire was concerned with the oppression and emancipation of entire social groupings, such as marginalised ethnic communities, then Giroux advocates for the freedom of middle-class individuals in Western cultures.

8. **Culturally Sustaining Pedagogy**

The concepts described thus far pertain to Critical Pedagogy as an educational philosophy; nonetheless, Critical Pedagogy translates into a variety of pedagogical tools and tactics. Culturally Sustaining Pedagogy is one of the pedagogical techniques derived from Critical Pedagogy that is particularly effective in educational environments including students from cultural minorities.

Culturally Sustaining Pedagogy seeks to acknowledge the backgrounds of students and link to their cultural knowledge, prior experiences, and frames of reference – but not exclusively. It seeks to develop a way by which their culture can be preserved, as opposed to obliterated.

In reality, this is achieved by incorporating important cultural issues within the curriculum, . It also requires engaging in dialogue with the community in order to comprehend its desires regarding which components of the culture should be preserved through education. Similar to Critical Pedagogy, Culturally Sustaining Pedagogy encourages students to examine and question the prevalent power systems in their society.

Unit-II

ORGANIZING TEACHING OF PEDAGOGY

1.2.1: MEMORY LEVEL (HERBARTIAN MODEL)

Memory level teaching-learning is the process of acquisition of factual learning based on memorisation. When a perceived object or place is formed in mind, remembering these accumulated signs or things learned in the past is called memory. According to Woodworth, memory is the direct of learned acquisition of human experiences.

Assumptions of Memory Level Teaching

Underlying assumptions of memory level of teaching:

1. Meaningful material is essential for memorization and the span of it will have its retention.
2. But there may be no relationship between rate of memorisation and capacity to retention.
3. Memory Level of teaching contribute a little on behavioural pattern of students.

Model of Memory Level Teaching

The model of teaching is originated by Herbert. It consists of five main steps:

(1) Focus,

(2) Syntax,

(3) Social system,

(4) Support system,

(5) Evaluation system.

(1) Focus:- It may enable the student:

To develop the mental discipline.

To acquire factual information.

Long time retention is getting preference.

To recall and recognize the learned material as and when necessary.

(2) Syntax:- The following five step structure of the model is presented below:

(i) Preparation:- The step is related to relevant ideas of the subject matter. A teacher plans about the presentation of the content in this step.

(ii) Presentation:- The present content is structured in such a way that it may be linked with earlier knowledge of the students. The presentation at this stage involves the following activities:

Teacher should have a definite work.

Teacher should have a definite structure of teaching activities.

Teacher should impart specific content.

This kind of presentational teaching-learning has three characteristics: (1) Definiteness, (ii) Predictability, and (iii) Observable specified knowledge structure.

(iii) Comparison: - In this step, the teacher attempts to compare between new system new facts and new ideas to identify similarities among new facts.

(iv) Generalization:- In this step, teacher generates the situations so that students are able to point out similarities of elements of ideas and knowledge. The changing of learning aids in generalizations. The rhythm and recitation methods are used at this stage.

(v) Application:- Teacher creates situations or problems so that student may use memorized facts for the further facts. The mathematical tables are used in multiplication and division.

(3) Social System:- This model consists of authoritarian behaviour. The teacher is more active and his main job is to structure and to present the content systematically and logically in the class.

(4) Support System:- This model requires some supportive devices to make it more effective. More meaningful material should be used to present at this level. The subject matter should be made define in its structure. The audio-visual aids may be used to involve more sense and make sense and make the content interesting for learner. The content should be specified and presented in an observable form.

(5) Evaluation System:- The evaluation is an indispensable aspect of teaching because it produces evidences about the realization of goals of the teaching model. Usually oral tests are given to measure the retention of learned material. The objective test of recall and recognition type is administered to evaluate the knowledge of students.

Ideas for Training Memory Level:

1. Memory level instruction may be effective under the following circumstances:

2. Students' retention can be boosted by practise or drill.
3. The topic matter should be repeated rhythmically.
4. Learners should receive constant reinforcement, and the content should have a distinct structure.
5. The content should be delivered in a systematic manner.
6. It is necessary to execute regular recollection or reproduction of content.
7. The procedure of whole to portion should be utilised.
8. The information should be cohesive and well-organized throughout.
9. The instructional material should be meaningful.

Advantages of Teaching at the Memory Level:

There are numerous advantages to memory-based instruction.

Firstly, it may be possible to choose a method of instruction that corresponds to the character of young children, whose memory at a young age is rote. They are quite capable of acquiring items without regard for their meaning or use.

Secondly, the job performed at the memory level in the form of acquiring so many facts through memorization is highly beneficial to the teaching-learning activities conducted at the comprehending and reflecting levels. Teaching at the memory level gives a firm foundation for building the higher teaching-learning structures at the other two advanced levels.

Thirdly, memory level teaching gives the teacher complete freedom to achieve his goal, which is to provide his students with maximal subject knowledge in the form of organised, well-connected information chunks in the shortest time possible.

Advantages of Teaching at the Level of Memory

The disadvantages and flaws of teaching at the memory level are listed here.

1. As the teaching-learning process is too heavily dominated by the teacher and there is little interaction between teacher and student, there is little to no room for the correct personality development of the students.
2. It is conducted at the lowest level of the student's thought processes and so offers no opportunity for the development of the students' comprehension, reasoning, and other necessary cognitive skills.
3. Memory-level instruction offers challenges for maintaining class control and capturing students' attention in the classroom. Another issue is motivating kids through fear and other extrinsic objects.

4. Despite the instructor's best efforts, there is no assurance that the material will be retained and reproduced correctly by the student. As is typically the case, retention is short-lived, and pupils frequently cut a pitiful figure when the time comes. especially during testing or assessment periods.

Teaching Memory Levels: Some facts

The following recommendations are offered to improve the effectiveness of memory level instruction:

1. Give the text significance.
2. The content should be displayed in its entirety.
3. The text must be presented in chronological sequence.
4. Provide additional time to practise.
5. Do not instruct while fatigued.
6. Use a guaranteed reinforcing system.
7. Instruction at this level should be limited to the acquisition of knowledge.
8. Repetitions should be performed with a single rhythm.

1.2.2: UNDERSTANDING LEVEL (MORRISON TEACHING MODEL)

Understanding Level (Morrison teaching Model) Understanding-level instruction is instruction that tries to familiarise pupils with the relationship between generalisation and particulars - between principles and isolated instances that demonstrate how the principles can be applied.

The instructor is attempting to keep his introduction at a level of comprehension. If he is successful, his students will be able to recognise instances where a specific rule applies and use it as a guide. When teaching rules or spelling rules for dividing fractions, rules for fixing a motor, or theories of physics and chemistry, the outcomes are identical.

Models of Understanding Level of Teaching

This is also known as the Morrison teaching model. Morrison created this instructional model. Teaching paradigms include five components: emphasis, syntax, social system, support system, and evaluation system.

(A) Focus: The primary emphasis of understanding-level instruction is concept mastery. This paradigm is centred on ideas. It imparts significant knowledge or topic matter and encourages adaptive reactions or genuine adoption.

(B) Syntax: The framework of teaching at the level of comprehension consists of five steps: investigation, presentation, assimilation, organisation, and recitation.

1. Exploratory orientation: It includes three activities:
    a. It entails testing and questioning to investigate students' early learning. It offers sensible sequence, indicating where he should begin.
    b) It aims to aid instructors in arranging subject content in psychological sequences.
    c) Third aspect of exploratory orientation is for the instructor to decide how to approach or present a new subject.
2. Presenting: It consists of three activities:
    (a) The instructor teaches the new material in little chunks and strives to maintain a continual rapport with the students.
    b) The teacher administers a diagnostic exam or sees how many students fail to comprehend the provided material.
    c) The presentation is repeated if necessary. Teachers must not go on to the new unit. Till the majority of kids really comprehend. Some information can be delivered three times. This level requires additional participation from the teacher.
3. Assimilation: Students who have passed the exam of presentation are given a test at the conclusion of the presentation phase:
    a) Students are more engaged in these steps. Students do numerous assignments and consult sources.
    b) The student's work at this stage is extremely personalised.
    c) The assimilation period consists primarily of supervised study time. The instructor and students are more energetic.
    d) The primary purpose of assimilation phase is for pupils to see various particulars in relation to the unit's underlying generalisation.
    e) Moreover, a mastery test is administered at the conclusion of assimilation. If pupils cannot pass the exam, they are required to undergo additional assimilation.
4. Organisation: It gives an apprehending sequence. When a student passes a test of mastery, he or she ends the assimilation phase and advances to the organisation phase. It includes the following procedures:
    a) The organisation phase is to assess if he can duplicate the unit's essentials in writing without assistance.

b) This stage is especially important for inspecting substantial information that contains numerous elements within a single learning unit. In certain areas, including arithmetic, mathematics, and grammar, it is feasible to reproduce a unit in writing. The pupil can immediately transition from assimilation to recitation.

5. Recitation: A student may proceed directly to the last step from simulation in specific disciplines and when the organisation ceases operations. It comprises the following actions:

   a. Each student presents orally before the instructor and his classmates a shortened version of the unit's concepts.

(C) Social System: The instructor should exercise sufficient prudence to recognise that he should not be authoritarian. He should be democratic in his classroom instruction. He must behave as the group's leader. His primary duty is to instruct and inspire students. The focus of his efforts should be the discovery and mastery of the truth. His behaviour should be adaptable, dynamic, and infused with humanity. He should have complete confidence in the students. These are the key characteristics of a teacher who can plan instruction at this level. At this level of teaching, the source of motivation is not just extrinsic but also intrinsic and the teacher's personal participation. The role of the teacher is to instill in students a desire to learn new topics. During the presentation and assimilation phases, the teacher should verbally commend and approve of pupils' correct responses. Teachers can raise the aspirations of both individual students and the entire class.

(D) Support System: This system should aid in making this model more successful and achieving its objectives. The teaching tools should be utilised during the persecuting stage so that the process is not repeated multiple times. For an effective presentation, audiovisual and other technologies may be utilised. This approach is far more effective during the assimilation phase. The subject matter may be obtained from a variety of sources. Because this level is highly customised, the designed instructional material can be supplied to the students. During the absorption phase, the teacher's careful supervision is crucial. The students should have the opportunity to independently practise the content they have learned.

(E) Evaluation: The model's arrangement and recitation provide proof of its usefulness. This model's outcomes are evaluated via essay and objective-type examinations. Multiple-choice and analogy questions are the most effective for gauging pupils' comprehension. Mastery recitation is evidence in support of this teaching technique.

Tips for Teaching at Understanding Level

1. Teachers should be sympathetic towards the students and they should be given the necessary freedom.
2. After the memory level, the teaching of the understanding level should be arranged.
3. Each step should be passed in a sequential manner.
4. Students should be motivated.
5. Raise the aspiration level of the class.
6. Problem solving should be done according to the education system.

Criticism of Teaching at Understanding Level

The following are the limitations and characteristics of the model of understanding level given by Morrison:

1. The problem with this teaching system is that it emphasizes on ownership of the content itself, not taking into account human behavior.
2. Morrison has considered the teacher's engrossment in the subject matter as the motivation for schools, whereas psychological motivation can prove to be more effective than this.
3. With the ownership of the content, development of the cognitive and emotional aspects of the students cannot be done but only the cognitive side can be developed.
4. This model of teaching given by Mr. Morrison is considered to be an effective model from the psychological and practical point of view.
5. Through this model of teaching, the students can be made aware of the content in depth. Therefore, pure learning takes place by this model.

Characteristics of Understanding Level Teaching

1. Effective learning,
2. Interesting learning,
3. Development of cognitive abilities,
4. Helpful in teaching-learning of thinking level,
5. Maximum return.

Merits of Teaching at Understanding Level

The teaching at Understanding level may be credited with the following good points:

1. Understanding level teaching helps the students in the acquisition of the facts or information more effectively than the memory level.
2. It helps them to learn generalized rules, principles or theories built up on the basis of individual facts or special examples.
3. Understanding level teaching trains and equips them for acting more intelligently in proceeding on the path of learning.
4. Understanding level teaching through the generalized insight equips the students with a mental kit of rules and principles.
5. It provides opportunity for the organised and systematic teaching best suited for the existing schools situations of our country.

Disadvantages of Understanding Level Teaching

1. Not learner cantered,
2. Not undertaking,
3. Not self-learning,
4. No development of higher intellectual or cognitive abilities.

1.2.3: REFLECTIVE LEVEL (BIGGE AND HUNT TEACHING MODEL)

1. Problem Based Instruction: The reflective level of instruction is problem-based instruction in which the student engages in an innovative, inventive, and critical approach to the subject and engages in serious or profound thought.
2. Critical and Creative: The student investigates facts and generalisations and searches for new ones. Remembering and comprehension levels of subject instruction are prerequisites for this level of instruction. Reflective teaching tends to foster a classroom environment that is more lively and engaging, more critical and probing, and more open than original and creative thought. In addition, the type of research persuaded by a reflective class tends to be more rigorous and labour-intensive than that done at the understanding level.
3. Art of Thinking and Critical Analysis: Here Reflective means ‘the art of thinking,’ therefore the concept of teaching-learning at the level of thinking is around thinking, that is, discovering or focusing on the most recent results through reconsidering

something. According to Morris L. Bigge, it is the “careful, critical analysis of a notion or alleged piece of knowledge in light of the testable evidence that supports it and the further conclusions that it suggests.”

Conceptual Perspectives:

1. The cognitive field theory of learning is the basis for reflecting-level instruction.
2. This idea, also known as goal insight theory, challenged traditional mechanical memory and meaningless fact comprehension.
3. It emphasised an intentional, goal-directed, introspective approach to learning and attempted to teach the student the art and skill of problem-solving by recognising his aim and problem and learning to solve them in a scientific manner.
4. It stresses the acquisition of generalised understanding, methods for uncovering information, and problem-solving skills.

Model of Reflective Level of Teaching

The concept of teaching and thinking level has been described by Mr. Hunt in the following steps:

A. Focus:-

(I) To develop the ability to solve problems.

(II) To cultivate critical and creative reasoning.

(III) To enable the pupil to think independently or creatively.

B. Syntax: It consists of four steps:

1. In the initial phase, the instructor creates a challenging circumstance for the students.
2. In the second step, students generate hypotheses on the solution. Multiple hypotheses can be developed to tackle a given situation.
3. Students acquire the necessary data to confirm the hypothesis in the third step. On the basis of these data, it is determined whether or not the formed hypothesis can aid in the solution of the problem.
4. In the fourth phase, it deals with testing hypothesis. On the basis of this test, decisions are made, and then the pupils generate creative ideas.

C. Social System:

The instructor must be imaginative, tactful, and perceptive, as well as able to generate a challenging scenario and a need in the students. The function of the instructor is to support

the student and encourage his participation in solving the problem. In addition, the student should be extremely proactive in determining the nature of the problem using objectives and empirical methods.

At this stage, self-motivation and ambition are the sources of motivation. The social norms and values may aid in the problem selection process. The setting of instruction is highly democratic and critical.

D. Support System:

This type of system is essential for its effectiveness. Social awareness and social ideals should aid the learner in recognising the need for a challenge. He should be encouraged to generate the maximum number of hypotheses possible. This is only feasible via personal investment and aspirational drive. The learner should be instructed further on how to gather evidence for the verification of hypotheses. This makes it difficult to draw conclusions about the issue.

E. Evaluation System:

The instructional paradigm's work ability is difficult to evaluate. The written examination should measure a greater degree of cognitive. Essay-style assessments are the most effective instruments for measuring the effectiveness of reflective-level instruction. The other strategies should be utilised to assess the learner's issue engagement, attitudes, adaptability, and critical thinking.

The benefits of reflective level instruction

(1) **Student-Centered Methodology:** Teaching-Learning at the thinking level takes a student-centered approach to education. In this, the student chooses his own objective and determines his own path to achieving it.

(2) **Growth of mental abilities:** The job of teaching and learning at the level of thinking is performed at a higher level than at the levels of memory and comprehension. It aids in the correct development of children's mental talents, particularly those associated with higher intellectual processes. It fosters originality, creativity, and independence in the kids.

(3) **Problem-solving skills:** Teaching learning at the thinking level gives students with problem-solving skills and enables them to deal with challenges encountered both within and outside of school.

(4) **Appropriate for all school subjects:** Teaching-learning at the level of thinking can be applied to all scholastic disciplines.

(5) **Maximum Flexibility and Freedom:** The teaching-learning level of thinking gives maximum flexibility and freedom in the design of courses, the selection of methods and procedures, etc. According to Bigge, "Inter-level teaching-learning allows

freedom from the difficult and rigorous creation of course material since it produces material based on a good teacher-student relationship rather than formal material.

(6) **Development of higher abilities:** Teaching-learning of the thinking level, in addition to providing the understanding of various facts, principles, rules, acts, concepts, and generalisations, also develops those high abilities in the students that are able to explore new relationships and aids in the development of new approaches to problem solving.

(7) **Exploration-focused:** Educating learning at the level of thought is beneficial for investigation-focused, problem-centered, and creation-fostering learning. In today's world of rapid change, these attributes are of utmost importance.

(8) **Transfer of training:** Teaching learning at the level of thinking enables the greatest transfer of learning, whereas it is insufficient at the level of memory and cognition. Problem-solving techniques can be translated to real-world circumstances (educational, occupational or personal).

(9) **Democratic and stimulating atmosphere:** The thinking level of the teaching-learning environment contributes to creating the environment democratic, stimulating, friendly, healthy, and alive. Such an environment fosters self-learning and productive interaction between teacher and student. The process of generating and resolving problems is conducted in a very intelligent, liberal, and democratic setting.

Limits of Reflective-Level Teaching-Learning

(1) **Not appropriate for small classrooms:** Teaching-learning of thinking level is better suited for older students in high schools, colleges, and universities, because problem-solving and 'thinking-thinking' need the application of highly developed intellectual capacities. Yet, it cannot be effectively implemented by young children and pupils in small courses due to the necessity of matured intellectual ability.

(2) The circumstances and course materials to be given at the thinking level are not organised. It does not adhere to a set schedule. It does not facilitate the methodical acquisition of organised school topic knowledge.

(3) **Sluggish and time-consuming:** Teaching-learning at the level of thought is slow and time-consuming. Owing to today's curriculum and administration's focus on results, there is no emphasis on the quality of learning promoted by thought-level instruction.

(4) **Weight of obligation on teachers:** The teaching-learning level of thinking may increase the burden of responsibility on school teachers. They are already carrying a

big load. Aside from this, it is difficult to perform teaching tasks at the level of thought. It demands special qualifications, experience and aptitude. In this form of instruction, the desired outcome cannot be attained without this.

(5) **Potential of becoming lost:** Due to freedom and flexibility, there is a chance that kids will go lost. In the absence of maturity and experience, students may squander time and energy on fact-finding, irrelevant queries, inquiry, and re-investigation of facts and theories. They can also incorrectly solve their problems.

(6) **No curriculum or textbook limits:** The teaching and development of higher-level thinking cannot be limited by curriculum and textbooks. It is problem-focused. Thus, it cannot be utilised in the current examination-based educational system.

(7) **Insufficient adaptability:** Huge claims are made about the adaptability of teaching-learning at the thinking level, but the fact is that this form of teaching-learning is only suitable for subjects and situations that demand an investigative or problem-solving approach.

Characteristics of Reflective Level of Instruction

Teaching at the level of thinking comprises memory and cognition learning.

The pupil is more engaged in this method of instruction.

The teacher generates unclear and difficult problems for the students to solve.

According to Hunt, the problems should be those that can be solved by the student's intellect.

Teaching Reflectively: Suggestions

Following are guidelines for teaching at the level of critical thinking:

Prior to this level of instruction, knowledge of memory and comprehension must exist.

All pertinent procedures must be followed.

The aspirations of the kids should be lofty.

They must have compassion, love, and awareness.

There must be an understanding of the issue.

The significance of thinking level instruction should be emphasised.

A focus should be placed on cognitive growth.

Pupils should be provided increasing opportunity for innovative and creative thought.

The learning atmosphere must continue to be democratic.

Kids should be encouraged to think more and more accurately.

Unit-III

CONCEPT OF ANDRAGOGY IN EDUCATION

Introduction:

The term was originally coined by German educator Alexander Kapp in 1833. Andragogy was developed into a theory of adult education by Eugen Rosenstock-Huessy. It later became very popular in the US by the American educator Malcolm Knowles. Knowles asserted that andragogy (Greek: “man-leading”) should be distinguished from the more commonly used term pedagogy (Greek: “child-leading”).

1.3.1: MEANING OF ANDRAGOGY

The word Andragogy derives from the Greek word means “adult-leading”. Andragogy refers to a theory of adult learning that details some of the ways in which adults learn differently than children. For example, adults tend to be more self-directed, internally motivated, and ready to learn. Teachers can draw on concepts of andragogy to increase the effectiveness of their adult education.

- ☐ The art teaching for adult
- ☐ The science of teaching for adult
- ☐ The profession of teaching adults
- ☐ Adult education practice
- ☐ Specific teaching methods
- ☐ Andragogy refers to methods and principles used in adult education.
- ☐ “Andragogy” was a term coined to refer to the art/science of teaching adults.

Definition of Andragogy:

Andragogy is the science of comprehending theory and facilitating practise the lifelong education of adults.

According to Malcolm Knowles, Andragogy is the art and science of adult learning; hence, andragogy encompasses all types of adult learning.

Hence, andragogy is the art and science of assisting adults to learn, as well as a learner centered approach for individuals of all ages.

Assumptions concerning Andragogy:

Knowles (1980) formulated four hypotheses regarding Andragogy:

1. Adults must understand why they must learn anything
2. Adults must learn by experience
3. Adults approach to learning as problem-solving
4. Adults learn most effectively when the issue is of immediate importance.

Nature of Andragogy:

- ☐ Adult learning
- ☐ Pragmatic
- ☐ Problem-centric
- ☐ Different Methodology
- ☐ Application Oriented
- ☐ Experience Based
- ☐ Individualistic
- ☐ Self-directed
- ☐ Intrinsic Motivation

1.3.2: PRINCIPLES OF ANDRAGOGY BY MALCOLM KNOWLES

(1) Adults need to know their purpose of Learning
(2) Development own experience
(3) To feel the responsible for their learning
(4) Readiness of Learning
(5) Problem Centric.
(6) Adults learn in a better way when they have intrinsic Motivation.

The Six Fundamental Principles of Andragogy:

1. **Need based Learning:** Adults must understand why they are being asked to learn. One method to accomplish this is through communicating learners about their aim

and objectives towards learning. Inform them in advance of why they should pay attention and how it will benefit them individually.

2. **Experience:** Adult students possess experience. This experience should serve as the foundation for the majority of learning activities. Your duty is to relate their prior knowledge to the new material.
3. **Self Concept:** Adults must be accountable for their educational choices. They thrive on independence. By providing some control over their learning, you can satisfy their demand for autonomy. Online training is a valuable instrument for achieving this control.
4. **Preparedness:** Adults learn most effectively when the instruction helps them solve an immediate, real-world issue.Adults are more motivated to study when there is an urgent purpose to do so.
5. **Problem Orientation:** Adults learn most effectively when content is problem-based. They prefer to acquire problem-solving-specific knowledge, skills, and/or abilities over generic content. Adults are significantly more likely to learn when they perceive that the instruction will benefit them immediately. To inspire them, assist them in identifying the issue the training would address. This will allow them to concentrate on studying as much as possible.
6. **Intrinsic Motivation:** People learn best when their drive comes from within rather than from beyond. Yet, this does not imply that adults cannot be externally driven; they can be. The most effective technique to encourage students is to identify their intrinsic motivation. These intrinsic motivators include the knowledge that a task improves their sense of self-worth or affords them greater prospects for professional advancement.

These types of motivators are more effective over the long run.

1.3.3: COMPETENCIES OF SELF-DIRECTED LEARNING

What it is actually?

Self-directed competency-based training requires learners to be accountable for their own education. A learner and the learning supervisor examine the gaps in the student's skill set together. Together, they determine the optimal strategies for bridging these gaps based on the learner's objectives and learning preferences, which may be characterised by the following perspectives:

1. **Competency Map:** To create a competency map that identifies the general areas of competency and the specific skills, knowledge, abilities, and behaviours needed to operate well in a particular occupation.
2. **Learning Module**: We create training modules based on the individual skills outlined in the competency map. These modules provide information on learning objectives, suggested learning activities, and further learning resources.
3. **Learning Plan:** he student evaluates the learning modules that address his or her ability deficiencies as part of the learning plan. In partnership with a learning supervisor, the learner uses the proposed learning activities to develop a learning plan that meets the module's learning objectives.
4. The learner completes the learning plan and a performance evaluation rating, which is then reviewed by the learning supervisor. • The learner, under the supervision of the learning supervisor, completes the modules that address his or her skill gaps.
5. **Skill-based:** The Competency Group's approach to building self-directed learning programmes stresses the development of real-world abilities that may be applied directly to activities or difficulties encountered on the job by the learner. Participation of the student in establishing an individualised learning plan increases his or her commitment to training.
6. **Outcome-based Approach**: As students go through the programme material, they hone their capacity to study new material in the future. Self-directed learning is an integral component of competency-based training and, as such, is advantageous for both the institution and the individual.

Four-Step Method for Self-Directed Learning

Independent study can be difficult, even for the most intelligent and determined pupils. As a means of gaining a better understanding of the processes involved in this mode of study, this Teaching Tip describes the four key stages of independent learning, also known as self-directed learning: being prepared to learn, establishing learning objectives, engaging in the learning process, and evaluating learning.

Step 1: Evaluate learning readiness

For successful independent study, students require a variety of abilities and attitudes towards learning. This step requires students to evaluate their current environment, study habits, family status, and support network at school and at home, as well as their prior experiences with independent learning. Read our Ready to Learn Teaching Tip for a thorough Learning Skills Assessment Instrument. Being independent, organised, self-

disciplined, able to communicate effectively, accepting constructive feedback, and engaging in self-evaluation and self-reflection are indicators of preparation for self-directed learning.

Step 2: Establish learning objectives

Communication between a student and their advisor regarding learning objectives is crucial. Our Unit Planning Decision Guide consists of a series of questions for students to consider as they map out their learning objectives. Learning contracts are also essential for building a clear understanding of learning objectives between students and teachers. • Goals for the unit of study • Structure and sequence of activities • Timeline for completion of activities • Details regarding resource materials for each goal • Details regarding grading procedures • Feedback and evaluation as each goal is completed • Meeting plan with the advising instructor • Agreement of unit policies, such as a policy on late assignments

Once contracts are drafted, the advising faculty member should evaluate them and pose concerns about their viability (e.g., What could go wrong? Is there an excessive amount of work? Are the evaluation schedule and criteria reasonable?

Step3: Participate in the educational procedure

Students must comprehend themselves as learners in order to comprehend their needs as self-directed learners; directing them to our resource on learning preferences may be useful. Also, students might consider responding to the following questions:

a) What are my instructional method requirements?

b) Who was my favourite instructor? Why?

c) What did they do differently than other educators? Throughout their programme, students should reflect on these questions.

Pupils must also comprehend their method to study by the following steps:

- **A Deep approach: It** involves transformation and is excellent for independent study. This strategy emphasises personal comprehension of concepts, application of knowledge to new contexts, the use of novel examples to demonstrate a concept, and the acquisition of knowledge beyond what is required for unit completion.
- **A Surface approach:** it incorporates reproduction what is necessary to successfully complete a unit, and a tendency to regurgitate examples and explanations from readings.
- **A strategic approach: It** entails organisation by attaining the greatest possible grades, understanding what is required to pass tests, memorising facts, and practising with previous exams.

Step 4: Evaluate learning

Students must be able to engage in self-reflection and self-evaluation of their learning goals and progress in a unit of study in order to be successful with self-directed learning. To help this self-evaluation process, they should:

- consult with the advising instructor on a regular basis;
- seek feedback; and
- reflect on their accomplishments by asking: How do I know I've learned?

Am I adaptable in my application of knowledge?

Are I confident in my ability to explain material?

When will I have learned enough?

When should students engage in self-reflection and when should they consult with their faculty advisor?

Accountabilities within the four-step procedure

Students and faculty advisors must share specific obligations or roles for independent study to be successful. This is a list of the most significant roles. It is beneficial for both students and faculty advisors to periodically check this list and discuss whether they believe the other party is meeting their responsibilities.

Students' roles

- Self-assess your readiness to learn
- Define your learning goals and develop a learning contract
- Monitor your learning process
- Take initiative for all stages of the learning process — be self-motivated
- Re-evaluate and alter goals as required during your unit of study
- Consult with your advising instructor as required

Advising instructors' roles

- Build a co-operative learning environment
- Help to motivate and direct the students' learning experience
- Facilitate students' initiatives for learning
- Be available for consultations as appropriate during the learning process
- Serve as an advisor rather than a formal instructor

1.3.4: THEORY OF ANDRAGOGY (MALCOLM KNOWLES)

Andragogy is a concept that was created less than two centuries ago. Several professions, including educators and philosophers, have disputed whether pedagogy and andragogy differ. The concept that adults require a unique approach to learning is less than a century old, which raises doubts about its findings and methodologies. Many criticisms of the idea exist, including the individualistic approach. Overemphasizing the learner's experiences has brought into doubt the validity of the processes and their very existence.

Knowles' Assumptions About Adult Learners

Knowles' Theory of Andragogy outlines the five assumptions below already mentioned previously but to explain its theoretical sequence it repeats:

1. **Self-concept:** Adults move from being dependent on others to self-direction as they mature.
2. **Experience:** Adults gain experience as they grow that, in turn, becomes a valuable tool in learning.
3. **Readiness to learn:** The priorities of adults shift as they begin to increasingly value and are therefore more ready to learn about his or her role in society.
4. **Orientation to learning:** Adults change their perspectives on learning as they grow, moving from procrastination to immediate application and from subject interest to problem-solving.
5. **Motivation to learn:** Adults move from extrinsic towards intrinsic motivation as they grow and mature.

Educators are inherently responsible for putting these assumptions into practice in the classroom. Knowles had 6 suggestions on how to do so:

1. Promote a positive classroom climate centered around cooperative learning;
2. Research the interests and the needs of each adult learner;
3. Create learning goals based on the interests and needs outlined above;
4. Build on each subsequent activity to achieve the learning objectives;
5. Co-create strategies, resources, and methods for instruction;
6. Review each activity and make modifications where necessary, while continually evaluating the next steps for learning.

Adult learners retain information best when it is relevant and useful. Therefore, it is imperative for teachers to explain the reason for learning a specific skill. As they possess a

mature mindset, adults are often better at creating solutions to real-life issues as opposed to simply memorizing information. Problem-solving, immediate application, and performance-based tasks are all pillars of effective instruction.

Desired Outcomes of Adult Learning

Our education system aims to create productive, contributing members of society. Knowles recognized that critical skills and abilities were ultimately formed in various educational settings, which, in turn, allowed for everyone to get along. These adults, also called "citizen-rulers," are necessary for a democracy. Knowles had seven desired outcomes:

1. **Self-knowledge**. Knowing their "needs, motivations, interests, capacities, and goals" allows adults to better understand themselves, which leads to personal growth, self-knowledge, and self-respect.
2. **Global citizenship**. Ideally, adults should learn to differentiate between people and ideas and learn to respect others while allowing for mutual disagreement. Ultimately, the goal is to promote acceptance, show empathy, and help others in need.
3. **Positive attitude**. Being open and accepting changes develops resilience in adults, which allows them to see each moment as a learning opportunity.
4. **Seeking truth**. Often people react to the outcome, or symptom, of a situation. Mature adults seek to understand the root of the behavior and, therefore, find a solution that addresses the cause of the behavior.
5. **Personality**. Everyone has strengths and weaknesses, and adults should capitalize on their strengths by learning skills that support their role. Education can offer many avenues that support each individual to their fullest potential in society.
6. **Essential values**. Adults should not only respect the common values of the society in which they live but understand that they are binding. Shared ideas and traditions are a key component of "the heritage of knowledge" and are collectively valued by each community.
7. **Social order**. Not only is it important to understand the rules and values of the society in which we live, but adults must also contribute as productive citizens. Demonstrating intelligence and being able to mobilize social change show that you are an effective contributor to that society.

Conclusion: Some applicability

- A safe environment that meets the individual needs of each person while recognising their uniqueness. This means that all ability levels are recognised, and the educator respects each student's life achievements.

- A setting that fosters innovation and experimentation while fostering intellectual liberty.
- A setting in which each adult is acknowledged, admired, and respected as an intelligent being. Each student is listened to as though by a peer, which demonstrates appreciation for their life experiences and enables reciprocal learning.
- An setting that encourages self-directed learning, as described above. Instructors co-create lessons with their students depending on the needs of each individual in order to assist them in achieving their maximum potential for success in their industry.
- An setting that provides intellectually stimulating activities for adults. Determining the optimal learning pace for each student is essential for classroom success. If it is too easy, they will become bored; if it is too difficult, they will give up.
- An setting that encourages active learning engagement. Synchronous activities, in which the educator and students collaborate equally in tasks and exercises, foster more progress than asynchronous activities, such as when the teacher delivers a lecture.
- An environment that incorporates student feedback. Instructors who take the time to listen to their students' input and apply the modifications create a classroom where kids are eager to learn.

If these crucial characteristics are not implemented, adult learning programmes are unlikely to be successful. Students' self-respect, confidence, and sense of self diminish if they do not feel welcomed, accepted, or safe. In research comparing adult participation in student-centered versus faculty-centered programmes, more personal development is reported in student-centered programmes.

1.3.5: THE DYNAMIC MODEL OF LEARNER AUTONOMY

The dynamic model for autonomy is based on a concept of autonomy as a complex construct of learner competences, as the Meta capability of the learner to regulate and self-direct their own learning in many ways based on their needs and the situation. As a multidimensional concept, autonomy comprises the following elements:

- Structuring Knowledge**:** A cognitive and meta cognitive components including cognitive and meta cognitive knowledge, awareness, learners' beliefs, represented in the model as structuring knowledge;
- Affective component considering feelings, emotions, represented in the model as affective domain.

- A motivational component: willingness, motivation, represented in the model as motivating myself;
- An action-oriented component: Skills, learning behaviours, decisions, represented in the model as ‘planning’, ‘choosing ‘materials and methods’, ‘completing tasks’, ‘monitoring’ and ‘evaluating;
- A social component :learning and negotiating learning with partners, advisors, teachers, within and outside the institutional context, represented in the model as cooperating;
- A meta strategic component (the capacity to orchestrate all components, represented in the model as ‘managing my learning’)

As shown in Figure, collected from the website: dynamic model takes the form of a sphere and entails all these dimensions, closely intertwined, as shown by the arrows connecting them. Although all these components closely interact with each other in the autonomous learning process, having these distinctions among them is useful to both learners and teachers or advisors, as actors of the learning and supporting process, so that they can better reflect on different competences, skills and strategies according to their needs and use opportunities that present themselves in the language learning context to improve and enhance them.

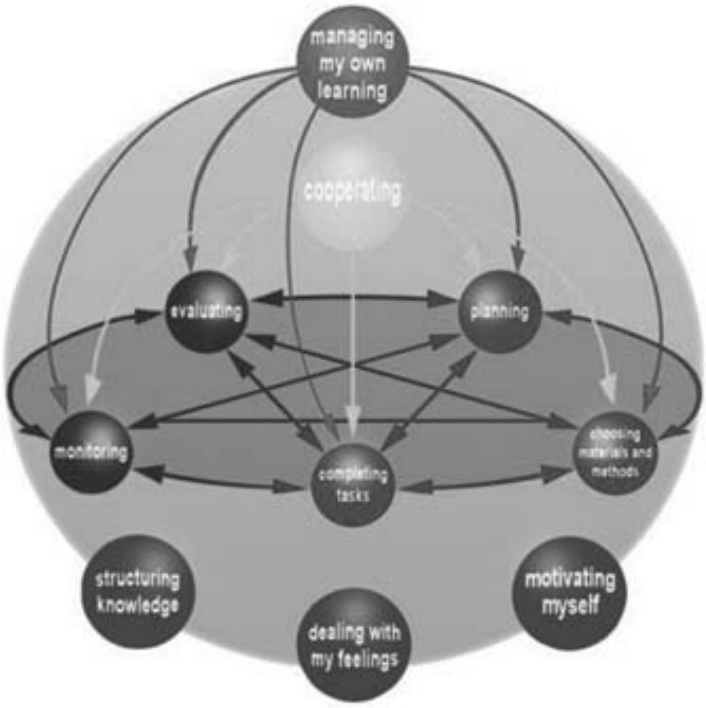


Figure 1. The Dynamic Model for Autonomy (Tassinari, 2010)

The descriptors:

Each component of the dynamic model includes a set of statements describing competences, skills, and behaviours. Collectively, these descriptors constitute a checklist covering numerous facets of autonomous language learning; however, they are not intended to be exhaustive or normative; rather, they serve as a spectrum of competencies that can be used to raise learners' awareness of learning processes. In addition, learners can create their own descriptors for each component. The entire list of descriptors is accessible through online.

Comparable to portfolio descriptors, these descriptors provide a qualitative response system. This means that there is no hierarchy between the components and descriptors, allowing learners to freely select the components and descriptors upon which they wish to reflect and evaluate themselves.

The dynamics:

This paradigm is dynamic both structurally and functionally. It has a dynamic structure since each component is closely related to the others. It is functionally dynamic because learners doing self-assessment can enter the model from any component and move freely from one component to another without following a predetermined path, based on their requirements and objectives. This crucial dynamic element of the model makes it possible to both account for the complexity of learner autonomy and operationalize the construct by decomposing it into smaller parts. On the online version of the dynamic model, hypertextual links represent the interrelationships between the components and descriptors.

A Dynamic and Dialogical Approach for Self-Assessment:

Self-assessment is contingent upon the learner's readiness or willingness to evaluate their own learning competencies. Little wood states that the willingness to conduct a reflection and self-evaluation process with the Dynamic Model involves "both the motivation and the confidence to assume responsibility."

Use of the dynamic model is therefore elective and not mandated. The self-evaluation can be administered in either advising or classroom contexts. In advising contexts, the advisor can offer self-assessment to the learner on an individual basis, but in classroom settings, the instructor can relate the self-assessment process to a series of peer and/or group activities aimed at fostering autonomy.

The steps of the self-assessment process are:

a) Getting started;

b) Selecting components and descriptors;

c) Evaluating one's own competences; and

d) Comparing perspectives.

1. **Reflection of own experiences :** Students are prompted to reflect on their prior experience and ideas regarding autonomous subject learning. This reflection can be conducted by the learner alone prior to the advising session as a written text using the prompts in the "Getting started" section The student may also discuss different contextual matters with the Instructor during the advising session. In the classroom, reflection can be undertaken with a peer or in small groups, followed by a discussion with the entire class. This process of reflection can be extremely beneficial, as learners' views, beliefs, and prior experiences can have a significant impact on their attitude towards learning acquisition, their decision-making, and ultimately the learning process itself

2. **Self-assessment process :** It is crucial that learners independently decide which aspects of their learning process they would like to reflect upon and thus select the focus of their self-assessment based on their needs, selecting one or more components and, for each component, the descriptors they believe are pertinent to their particular learning process. In the classroom, the instructor may also offer specific tasks, such as implementing an individual learning plan or selecting resources and assignments for individual objectives, and relate them to the student's reflection on the relevant components.

   The self-evaluation with the descriptors, which involves comparing the claims with one's own learning experience. In advising situations, this stage can be completed when the learner is alone, rather than during the advising session, so that they are not under time constraints and can answer the questions in a comfortable environment. In classroom situations, self-evaluation can be conducted with a classmate. Self-evaluation novices can benefit by exchanging thoughts with a peer.

3. **It is the real self-assessment** (evaluation of one's own competencies) with the descriptions, comparing the claims with one's own language-learning experience. In advising situations, this stage can be completed when the learner is alone, rather than during the advising session, so that they are not under time constraints and can answer the questions in a comfortable environment. In classroom situations, self-evaluation can be conducted with a classmate. Self-evaluation novices can benefit by exchanging thoughts with a peer.

4. **Comparison of Viewpoints:** It consists of discussing the results of the self-evaluation with the adviser and the teacher in classroom settings. This is a crucial component of the assessment for autonomy, as it incorporates the assessment into a

pedagogical dialogue in which the advisor and the learner reflect together and exchange their perspectives on the learner's competencies and the learning process. This pedagogical conversation is essential to the development of learner autonomy and constitutes the heart of the assessment procedure (Little, 1995). The reflective dialogue can be developed in accordance with the requirements and attitudes of the learner.

The pedagogical dialogue promotes reflection and assists learners with the self-assessment process, which may be quite difficult for learners who are not accustomed to it. While the descriptors allow the learner's inner perspective to interact with an external perspective on autonomous learning, the pedagogical dialogue with the teacher offers the learner an additional external perspective on their reflection, and has the potential to unleash meaningful interaction, bring to the surface, and elicit the learner's beliefs and understandings. With this method, learners are enabled to reflect on their learning in depth and without restriction.

By selecting the subject of their self-assessment, individuals can propose appropriate topics of conversation during the advising session, get insight into their own attitudes and competencies, and form the basis for future decision-making. This capacity for thought and subsequent action is both the objective and result of the evaluation procedure. This assessment is just formative and qualitative, resulting in the enhancement of meta-cognitive processes, and it can be repeated as needed, with the learner changing the focus if necessary. The characteristics of the dynamic model and the qualitative, recursive approach contributes to the dynamic nature of the self-assessment of autonomy.

The Attributes of the Model:

Each component of the dynamic model contains a set of assertions that describe competencies, abilities, and behaviours.

1. Constitute a checklist covering numerous aspects of autonomous learning;
2. They are neither exhaustive nor normative; rather, they serve as a spectrum of competencies that can be used to increase learners' awareness of autonomous learning processes.
3. Students can generate their own descriptors for each component. The whole list of descriptors can be seen online.
4. Portfolio descriptors: these descriptors provide a qualitative response system .This means that there is no hierarchy between the components and descriptors, allowing learners to freely choose the components and descriptors on which to reflect and evaluate themselves.

The pedagogical dialogue: The educational dialogue encourages reflection and supports learners with the self-evaluation process, which may be fairly challenging for learners who are unfamiliar with it.

While the descriptors allow the learner's inner perspective to interact with an external perspective on autonomous language learning, the pedagogical dialogue with the advisor offers the learner an additional external perspective on their reflection, and has the potential to unleash meaningful interaction, bring the learner's beliefs and understandings to the surface, and elicit them.

This strategy permits learners to reflect on their learning in-depth and unrestrictedly. By choosing the topic of their self-assessment, individuals can offer acceptable conversation topics for the advising session, get insight into their own attitudes and skills, and provide a foundation for future decisions.

Conclusion: This capacity for cognition and subsequent action is both the purpose of the evaluation system and its outcome. This assessment is merely formative and qualitative, resulting in the improvement of meta cognitive processes, and it can be repeated as necessary, with the learner altering the focus as needed. The qualities of the dynamic model and the qualitative recursive methodology contribute to the self-dynamic assessment's nature.

SUMMING UP

Pedagogy and Andragogy are two different approaches to teaching and learning. Pedagogy is the art and science of teaching children, while Andragogy is the art and science of teaching adults.

Pedagogy is characterized by structured curriculum, teacher-led instruction, and standardized testing. The teacher is seen as the expert who imparts knowledge, and the learners are seen as passive recipients. The primary goal of Pedagogy is to ensure that students have a solid foundation in the subjects they study, so they can successfully advance to the next level of education.

In this Unit several content has been enclosed as those are: concept of pedagogy, concept of critical pedagogy, Meaning, Need and its implications in Teacher Education. Beside this It also discussed that Memory Level, Understand Level and Reflective Level. Concept of Andragogy in Education: Meaning, Principles, Competencies of Self-directed Learning has briefly discussed in this unit.

Andragogy is characterized by self-directed learning, learner-centred instruction, and reflective practice. The teacher is perceived as a facilitator who provides guidance and support to the learners in their learning journey. The primary goal of Andragogy is to help learners to develop the skills and knowledge necessary to succeed in their personal and professional lives.

Both Pedagogy and Andragogy have their own strengths and limitations, and the choice of approach depends on the learners' needs, goals, and the context in which learning takes place. Ultimately, the most effective approach is one that takes into account the unique needs of the learners and provides a supportive learning environment that fosters their growth and development.

ASSIGNMENTS

1. Discuss the Meaning and Concept of Pedagogy.
2. Discuss different levels of teaching with their application in Teaching and Learning.
3. Discuss the concept of Critical Pedagogy of Freire and its social implications in our Education System.
4. Discuss the Memory Level, Understanding Level and Reflective Level of Teaching.
5. Discuss different steps of Pedagogical analysis with examples from a particular content area.
6. Discuss the Meaning and Concept of Andragogy.
7. Explain the Strategies of Self-directed Learning.
8. Elaborate the concept of Andragogy with the help of Malcom Knowles model and autonomy model of Andragogy.

SUGGESTED READING

Abdullah, M.H. (2001) Self-Directed Learning: Eric digests. Retrieved August 14, 2009, from http://www.ericdigests.org/2002-3/self.htm

Blaschke, L.M., Kenyon, C. &Hase, S. (2014). Experiences in self-determined learning. Amazon Digital Services.

Burns, S. M., Mendel, S., Fisher, R., Cooper, K., & Fisher, M. (2013). Critical thinking in nurse anesthesia education: Apilot study. Journal of Curriculum and Teaching

Education Measurement and Evaluation :J.Swarupa Rani, Discovery Publishing house.

Jenkins, A., Breen, R., Lindsay, R., & Brew, A. (2003) Reshaping Teaching in Higher Education: A Guide to Linking Teaching with Research. London: Kogan Page.

Knowles, M. (1988. The modern practice of adult education: From pedagogy to andragogy. Englewood Cliffs, New Jersey: Cambridge Publishing.

Knowles, M. (1975). Self-Directed Learning. Chicago: Follet.

Knowles, M. (1984). The Adult Learner: A Neglected Species (3rd Ed.). Houston, TX: Gulf Publishing.

Knowles, M. (1984). Andragogy in Action. San Francisco: Jossey-Bass.

Smith, M. K. (2002) ‘Malcolm Knowles, informal adult education, self-direction and andragogy’, the encyclopedia of informal education.

Block – 2
Assessment in Learning

Unit – 1
Concept of Assessment

CONTENT STRUCTURE:

INTRODUCTION

Assessment in education is closely associated with formal testing for purposes associated with the placement of students, the award of qualifications, monitoring achievement and progress, and holding teachers, schools, school districts, states, and nations accountable for the quality of the public services they provide. The validity and reliability of such measures are paramount tomaking useful and fair comparisons between individuals, groups, and organizations. The basis for this is provided by the theory and techniques of the well-developed science of psychometrics, which offers criteria for the evaluation of tests, their results, and their uses. These are sophisticated procedures and require considerable expertise, time, and other resources to develop and implement properly.

LEARNING OBJECTIVES

After going through this Unit, you will be able to —

1. Understand the concept and importance of assessment in education;
2. Conceptualize the different perspectives of assessment;
3. Recognize the different types of assessment;
4. Analyze and understand the difference between assessment and evaluation.

2.1.1: ASSESSMENT: MEANING AND CONCEPT

The word ‘assessment’ has its roots in the Latin verb “assidere” meaning ‘to sit beside’, a notion somewhat remote from familiar images of examination halls with students writing silently at separated desks. This word origin implies that in assessment the teacher sits with the learner and assessment is something teachers do with and for students rather than to students (Green, 1998).According to Brown, (1990) assessment refers to a related series of measures used to determine a complex attribute of an individual or group of individuals. This involves gathering and interpreting information about the student’s level of attainment of learning goals. In recent years the idea that assessment might have something important to do with the teacher sitting beside the student (literally or metaphorically), and gaining an understanding of what the student knows and can do to help them move on in their learning, has begun to gain new ground.

Assessment has two meanings-”an amount that a person is officially required to pay” and “the act of making a judgment about something”. It is the process of gathering and discussing information from multiple and diverse sources to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning.Assessment of learning is the snapshot in time that lets the teacher, students, and their parents know how well each student has completed the learning tasks and activities. It provides information about student achievement through-

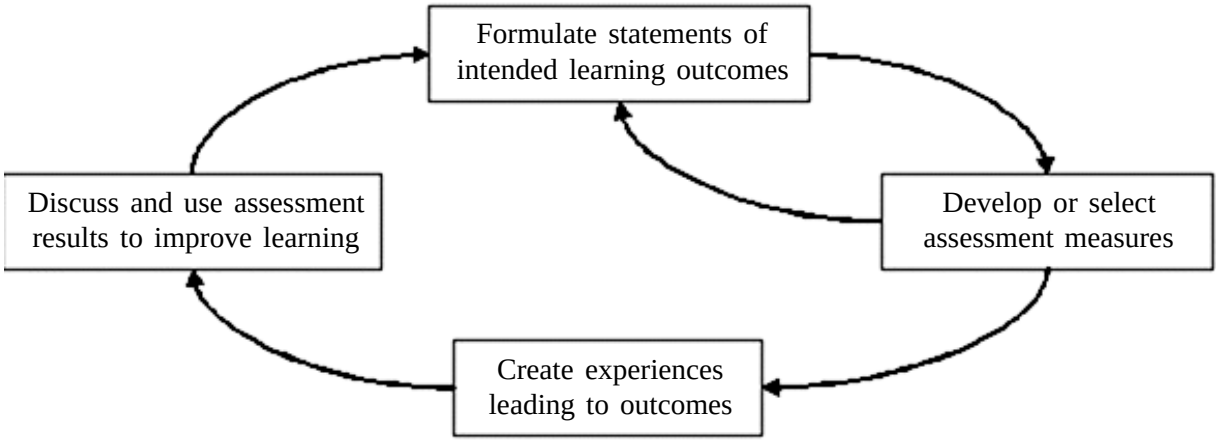
- ❖ Analyzing individual strengths and needs
- ❖ Strategically plan for each learner to improve and excel
- ❖ Setting new learning objectives
- ❖ Exploringthe abilities of the learners
- ❖ Monitoring for intervention

- ❖ Empowering with self–directed assessment strategies
- ❖ Nurturingthe students with supportive efforts
- ❖ Translating the needs and strengths of learners into active learning

In classroom assessment, since teachers themselves develop, administer and analyze the questions, they are more likely to apply the results of the assessment to their teaching. Therefore, it provides feedback on the effectiveness of instruction and gives students a measure of their progress. As Brown (1990) maintains, two major functions can be pointed out for classroom assessment: One is to show whether or not the learning has been successful, and the other one is to clarify the expectations of the teachers from the students (Brown, 1990).

2.1.2: NATURE OF ASSESSMENT

Assessment is embedded in the learning process. It is tightly interconnected with curriculum and instruction. As teachers and students work towards the achievement of curriculum outcomes, assessment plays a constant role in informing instruction, guiding the student's next steps, and checking progress and achievement. The four fundamental elements of learner-centered assessment could be diagrammatically represented:



The nature of classroom assessment is listed as follows:

- Classroom assessment involves students and teachers in continuous monitoring of students' learning.
- It gives students a measure of their progress as learners.
- It provides an opportunity for close observation of students in the process of learning.
- It helps in the collection of frequent feedback on students' learning and how they respond to particular teaching approaches.

- It has a profound impact on the self-esteem of pupils, which has a critical influence on learning.
- Uses a variety of strategies

Thus, the assessment includes all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged.

2.1.3: PERSPECTIVES AND FORMS OF ASSESSMENT

The various perspectives and forms of assessment are:

Assessment of Learning Processes (Formative)

This perspective serves to improve, control, and check on a student's learning process, or the student's and teacher's activities to achieve a certain objective.The main goal in the assessment of learning processes (or formative assessment) is to support the individual student. Thus, the efficiency of teaching is improved. Instead of fighting the symptoms the underlying reasons for learning difficulties are being investigated and are being tackled (these reasons can be cognitive as well as emotional). Mistakes are not corrected but analyzed. In this way, the ideas and mindset of a student can be understood and supported in a goal-oriented way. Difficulties have to be discussed together with the student and can be dealt with by using special support measures or tasks. By analyzing the source of mistakes, students do not have to adapt superficially. By analyzing these sources of mistakes, students do not feel at the mercy of their difficulties. Instead, they learn how to develop individual strategies for facing their problems.

In this respect successful learning means continuous steering of the learning process and working on mistakes by both – teacher and student – and not merely the search for the best methods.

Possibilities of assessment of learning processes:

- observations;
- small, everyday tests;
- tests after a long working phase.

Tests that assess learning processes act as an indicator of the teaching and learning process. They enable the students as well as the teachers to check their level of achievement. Gaps and insecurities can be filled with additional tasks.

Possibilities of testing:

- observing students while solving a task;
- accurate viewing and analysis of the completed tasks;
- individual conversations about completed tasks;
- asking questions about the way a problem was resolved;
- short tests.

Out of observations and conversations about the way of working on tasks and about the sources of mistakes individual goals arise that the students set themselves, that they work out together with the teacher, or that the teacher can set for them.

When applying this kind of assessment in our teaching, the logical consequence is also a shift towards:

- goal-oriented learning instead of purely content-oriented learning;
- individualized teaching instead of teaching where everybody works on the same task.

Assessment of Learning Achievements (Summative)

At a certain point in time, a conclusive assessment sums up the knowledge and skills that a student has acquired. Its main purpose is to inform, for example, the student or parents about the student's level of performance.

Assessment of learning achievements (or summative assessment) gives an evaluation of a student's achievement in a nutshell. It sums up all acquired knowledge and competencies. It acts as an instrument of feedback to the parents, the students, and the teachers. It can be the basis of goal-oriented support.

These kinds of assessments are used after long sequences of teaching and learning through observation and tests. They inform the different addressees to what degree the students have reached the different goals. Examples of assessment of learning achievements are all kinds of tests that ask for the student's accumulated knowledge or competencies of a certain subject area over a certain period (for example, democracy quizzes, maths tests, vocabulary tests, and social studies tests). Assessment of learning achievements is commonly used in schools in all subjects. Even though they are necessary for grading the students and giving the teacher selective information about the student's overall performance, they bear various problems.

As a means of feedback grades are used. In connection with grades there are several unsolved problems:

- Different teachers evaluate the same student's product differently. Assessment is not objective. In this respect, it is not relevant which subject it is. A maths test will be

evaluated differently by different teachers as a written story. Thus, assessment is strongly influenced by the teacher who evaluates. It can be a question of faith for a student and his or her future school career in which class and with which teacher he or she spends his/her school time. It can be stated that objectivity is not fulfilled as a criterion.

- A teacher tends to evaluate the same work of a student differently at different points in time. Assessment is not reliable. No matter which subject is the object of assessment, a teacher will evaluate differently at different points in time. It can be stated that the criterion of reliability is not fulfilled.
- It is not clearly defined what is expressed through a grade (skills, competencies, knowledge, attitudes). When teachers use grades in their assessment of achievements they integrate various aspects into the given grade, such as effective achievement in the past semester, estimated achievement ability, learning progress or deterioration in comparison to the class average, and motivational, as well as disciplinary aspects. It is very difficult for the student to find out what the given grade stands for. Usually, students do not know about the different assessment strategies of their teachers. Contents can be multidimensional and the space for interpretation can be big. Bearing in mind the different functions of grades in our society such as qualification, selection, and allocation, interpreting given grades gets even more complex. It can be stated that the criterion of validity is not fulfilled. For most of the above functions grades according to an assessment of learning achievements are not usable indicators for future school, study, or professional success.
- The common practice of grading according to an assessment of learning achievements has got a very important undesired effect: giving grades within a class according to a normal distribution lead to even more experiences of failure for the academically weaker students. Because the few places in a normal distribution for the very good and good ones are reserved for the same students, the same students will always remain on the other end of the scale. Even if they improve their academic achievement they will remain at that end. Therefore, ranking the students according to their measured performance within the class will only lead to demotivation and loss of interest as situations remain unchangeable, especially for the weaker ones.
- Grades do not apply to certain situations or phenomena: it may be simpler in subjects like mathematics to come to a right or wrong answer but it becomes more difficult in arts subjects or any other creative area of learning as well as language. This is due to missing or unclear criteria for evaluation and because different subjects trigger

different competencies or skills. In Humanities, the discussion of different forms of solving a problem may lead to very creative or innovative ideas whereas in other subjects only one answer can be viewed as the correct one. So, there is the danger that grades, and the wish to be able to grade everything in an assessment of learning achievements method, can lead to uniformity. A creative search for new ways of solving the task cannot take place.

- Grading Arithmetic is mathematically not valid: ideally, grades can be not more than rough estimates for an approximate rank of a student within his or her class. In this respect, even very accurate mathematical methods cannot serve as a means for improving this situation. Calculating the average of a grade by adding different grades and dividing again by the number of grades given can only serve as an additional source of security in a superficial way. It also depends on the time a grade was given. A student who started off the semester with a rather low grade and improved during that time should be evaluated differently from a student whose grades deteriorated during the semester. Even though the calculated average might be the same, the status of achievement and learning progress of these two students are not.

Prognostic Assessment

Prognostic assessments act as a means of estimation and prediction of the future career. Prognostic assessment combines basic aspects taken from an assessment of learning processes and an assessment of learning achievements and tries to formulate a diagnosis for the student's future. This type looks at a student's future development. At different stages during a student's school career, people involved in a student's education process (students, teachers, parents, and in some cases school psychologists and authorities) recommend how a student should continue his or her school career.

Prognostic assessments become very important at different stages in a student's academic life:

- school enrolment;
- repetition of a year;
- switching classes/schools;
- transfer to a different type of school (for example, special education);
- transfer to a higher school.

In this respect, discussions have been going on for the past decades as to whether the prognostic assessment can really be described as a form of assessment or can rather be viewed as a function of assessment.

2.1.4: TYPES OF ASSESSMENT

Based on how it is used and how the results are interpreted, assessment is classified into different types:

1. **Placement Assessment**
2. **Formative Assessment**
3. **Diagnostic Assessment**
4. **Summative Assessment**

1. Placement Assessment - In this type of assessment, the learner's entry behavior or capability is assessed to find out whether the student possessesthe knowledge, skills, and attitude needed to begin the course of instruction.

- It is used to find out to what extent the student has already mastered the objectives of the planned instruction.
- assessment made to determine what a student does and does not know about a topic.
- assessment made to determine a student's learning style or preferences.
- used to determine how well a student can perform a certain set of skills related to a particular subject or group of subjects.
- occurs at the beginning of a unit of study.
- used to inform instruction: makes up the initial phase of assessment for learning.
- attempts to quantify what students already know about a topic.

2. Formative assessment - It is an assessment used to monitor students' learning progress during instruction to provideongoing feedback to students and teachers regarding the success and failure of teaching and learning.

- Formative assessment is an integral part of teaching and learning.
- It does not contribute to the final mark given for the module; instead, it contributes to learning by providing feedback.
- Focuses on modular analysis of the content and instruction
- Seeks to identify influential variables
- Design is quite flexible
- Monitors teaching-learning strategy during instruction

- Aims at the attainment of specific objectives from different domains of development.
- Feedback to the learner is immediate (or nearly so), to enable the learner to change his/her behavior and understandings right away.
- Formative Assessment also enables the teacher to rethink instructional strategies, activities, and content based on student understanding and performance. His/her role here is comparable to that of a coach.
- Formative Assessment can be as informal as observing the learner's work or as formal as a written test.
- Formative Assessment is the most powerful type of assessment for improving student understanding and performance.

3. Summative assessment - Summative assessment demonstrates the extent of a learner's success in meeting the assessment criteria used to gauge the intended learning outcomes of a module or program, and which contributes to the final mark given for the module. It is normally, though not always, used at the end of a unit of teaching. Summative assessment is used to quantify achievement, reward achievement, to provide data for selection (to the next stage in education or to employment. For all these reasons the validity and reliability of summative assessment are of the greatest importance. Summative assessment can provide information that has formative/diagnostic value.

- Concerned with judgments on the merits of an already completed program at the end of a course or term.
- Terminal assessment of the learners' performance.
- Determines the extent to which broad objectives are achieved.
- Feedback to the classroom teacher for the success or failure of the program of instruction.

4. Diagnostic assessment - Like formative assessment, diagnostic assessment is intended to improve the learner's experience and level of achievement. This type of assessment is concerned with finding out the reasons for students' persistent or recurring learning difficulties and planningremedial actions. However, it assesses backward rather than forwards.

- It assesses what the learner already knows and/or the nature of difficulties that the learner might have, which, if undiagnosed, might limit their engagement in new learning.
- It is often used before teaching or when a problem arises.

- Observational techniques or specially prepared diagnostic techniques can be used to diagnose problems.
- Feedback as diagnostic information is of great importance to students.
- The diagnostic feedback can help students in understanding what learning objectives have not been achieved and need additional work.
- Such types of feedback enable students to set specific learning goals and improve their learner autonomy.
- This feedback can help teachers better attain teaching objectives and make relevant instructional adjustments.

2.1.5: DIFFERENCE BETWEEN ASSESSMENT AND EVALUATION

An assessment is a systematic process for measuring an individual's abilities based on empirical data. When you assess a person, you simply match their skills, and behaviors against certain parameters, to give you a fair sense of their strengths and weaknesses. Assessments can be standardized or fluid, depending on the context. For example, formative assessments happen throughout the learning process and provide real-time feedback. On the other hand, summative assessments compare what a person knows to the expected level of knowledge required for a specific context.

An evaluation is one step further from traditional assessments. The Canadian Evaluation Society describes it as the systematic assessment of the design, implementation, or results of an initiative for learning or decision-making. For example, when you evaluate a program, you critically analyze its different outcomes and characteristics, to help you measure its success. An evaluation aims to make an objective judgment on the value, quality, or significance of a subject using a set of well-defined criteria. In this sense, evaluations are high-stakes and have a huge impact on the individuals involved.

Difference between Assessment and Evaluation

Assessment is defined as a process of appraising something or someone, i.e. the act of gauging the quality, value, or importance. Against this, the **evaluation** focuses on making a judgment about values, numbers, or the performance of someone or something. Assessment is made to identify the level of performance of an individual, whereas evaluation is performed to determine the degree to which goals are attained.

The basic difference between assessment and evaluation lies in the orientation, i.e. while the assessment is process oriented, evaluation is product oriented. The article presented to you describes all the distinguishing points between these two.

Comparison Chart

BASIS FOR COMPARISON	ASSESSMENT	EVALUATION
Meaning	Assessment is a process of collecting, reviewing, and using data, for the purpose of improvement in the current performance.	Evaluation is described as an act of passing judgment on the basis of a set of standards.
Nature	Diagnostic	Judgemental
What it does?	Provides feedback on performance and areas of improvement.	Determines the extent to which objectives are achieved.
Purpose Orientation	Formative Process Oriented	Summative Product Oriented
Feedback	Based on observation and positive & negative points.	Based on the level of quality as per set standard.
Relationship between parties	Reflective	Prescriptive
Criteria	Set by both parties jointly.	Set by the evaluator.
Measurement Standards	Absolute	Comparative

Key Differences between Assessment and Evaluation

The significant differences between assessment and evaluation are discussed in the points given below:

1. **Definitions:** An assessment is a systematic method of measuring an individual's abilities while an evaluation is an objective judgment of the skills and values of a person using well-defined criteria. As we mentioned earlier, an evaluation is one step away from standardized testing.

   During an assessment, the instructor pays attention to the strengths and weaknesses of an individual, and it also aims to provide feedback that improves the indicator. On

the other hand, an evaluation critically examines a subject and then assigns a grade or some other type of formal result based on how well they performed.

2. **Characteristics:** A good evaluation process is valid, reliable, and practical. Validity means that the evaluation must measure the subject using well-defined criteria that are tailored to the subject. Reliability means that the process must be consistent while practicality suggests that every evaluation should be realistic and achievable within its context of usage.

   One of the most important characteristics of an assessment is it is an ongoing process. This means at various points in the learning process, the instructor uses different tools to measure the individual's abilities and level of knowledge. Also, assessments are collaborative, consistent, reliable, and tailored to a specific context.

3. **Types:** Common types of assessments include formative assessments, summative assessments, and diagnostic assessments. A diagnostic assessment provides factual data to help you understand the level of a learner's knowledge and engage them accordingly. A formative assessment aims to provide ongoing feedback that improves both the individual and instructor throughout the learning process. Summative assessment happens at the of an instructional unit, and its results determine whether the learner unlocks the next milestone.

   On the other hand, process evaluation, outcome evaluation, and impact evaluation are the most common types of evaluation used for objective judgment. A process evaluation helps you to answer questions related to the quality of an individual's knowledge. Outcome evaluation measures the long-term results of a program, and the extent to which it aligns with the original goals and objectives. While impact evaluation analyses the immediate effects of a specific subject.

4. **Example:** A good example of an evaluation is peer review. In education, a peer review is a process of validating the information contained in a research paper before the paper gets published. It is done by people who have the same level of knowledge and competencies as the researcher.

   An example of an assessment is the exit survey that the teacher uses to gauge students' level of knowledge at the end of a lesson. Outside of the classroom, a good example of an assessment is an appraisal document that contains information like your property's monetary worth.

5. **When to Use**: You should use an assessment when you want to gather relevant information about an individual's skills, strengths, and weaknesses. Also, if you want to provide feedback on an individual's progress and performance, then an assessment is your best bet.

On the other hand, an evaluation is best-suited for contexts where one needs to make judgments about a program or an individual, to improve its effectiveness, and/or to inform programming decisions. Also, you should conduct an evaluation when you need empirical data to determine whether a person is qualified for the next phase in a learning process.

6. **Industry:** To a large extent, both assessments and evaluations are used in similar industries. Like evaluations, assessments are very popular in educational research and human resources. They are used during employee engagement surveys to gather feedback from workers on how to improve the workplace. Evaluations are also used in the accounting/finance industries to determine the viability of a business. For example, before an investor gives money to an organization, they conduct a company evaluation to know if the business can provide returns on time.
7. **Tools:** Different tools come in handy during assessments including concept maps, straw polls, surveys, questionnaires, and PowerPoint presentations. Meanwhile, common tools for evaluation include a rubric or some other standard grading criteria, focus groups, case studies, observation, and interviews.
8. **Uses:** Researchers use assessments to gather qualitative data while evaluation results in quantitative responses. Qualitative data is a type of data that is non-numerical in nature. In other words, it can be observed and recorded but it cannot be counted. Quantitative data, as the name suggests, is data that can be quantified or assigned a specific numerical value

CONCLUSION

An effective, goal-oriented, teaching-learning sequence contains clearly understood objectives, productive classroom activities, and a sufficient amount of feedback to make students aware of the strengths and weaknesses of their performances. Assessment and evaluation are related to both instructional objectives and classroom learning activities and are indispensable elements in the learning process. They are useful for gathering data/information needed for various interests. The data can be used to make a decision about the content and methods of instruction, to make decisions aboutclassroom climate, to help communicate what is important, and to assign grades. Among other techniques to do evaluation and assessment, The teachers can use tests to evaluate and assess, starting from the small one, incorporating evaluation into the class routine, setting up an easy and efficient record-keeping system, establishing an evaluation plan, and personalizing the evaluation plan.

LET US SUM UP

According to Brown, (1990) assessment refers to a related series of measures used to determine a complex attribute of an individual or group of individuals. This involves gathering and interpreting information about the student's level of attainment of learning goals.

The various perspectives and forms of assessment are- Assessment of learning processes (Formative), Assessment of Learning Achievements (Summative), and Prognostic Assessment.

Based on how it is used and how the results are interpreted, assessment is classified into different types: 1. Placement Assessment, 2. Formative Assessment, 3. Diagnostic Assessment, 4. Summative Assessment

The process of collecting, reviewing, and using data, for improvement in the current performance, is called assessment. A process of passing judgment, based on defined criteria and evidence is called evaluation. Assessment is diagnostic in nature as it tends to identify areas of improvement. On the other hand, evaluation is judgemental, because it aims at providing an overall grade.

ASSIGNMENT

1. Define Assessment in education.
2. Why it is important to assess the students?
3. State the different types of Assessments.
4. What is the difference between Placement Assessment and Diagnostic Assessment.

SUGGESTED READINGS

Anderson, L. W. and Krathwohl, D. R., et al (Eds.) (2001) A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Allyn & Bacon. Boston, MA (Pearson Education Group)

Bloom, B.S. and Krathwohl, D. R. (1956) Taxonomy of Educational Objectives: The Classification of Educational Goals, by a committee of college and university examiners. Handbook I: Cognitive Domain. NY, NY: Longmans, Green

Krathwohl, D. R. (2002) A Revision of Bloom's Taxonomy. (PDF) in Theory into Practice. V 41. #4. Autumn, 2002. Ohio State University.

Krathwohl, D.R., Bloom, B.S., Masia, B.B. (1964*). Taxonomy of Educational Objectives, the Classification of Educational Goals. Handbook II: Affective Domain.* New York: David McKay Co., Inc.

Dave, R.H. (1970). Psychomotor levels in *Developing and Writing Behavioral Objectives.* R.J. Armstrong, ed. Tucson, Arizona: Educational Innovators Press.

ShikhanerMulyayan- By.Dr.Kamal Krishna Dey, Dr. Khagendranath Chattopadhyay, Dr. Subhas Chandra Bhate.

ShikhonerMulyayon– By. Dr. Debashis Paul, Dr.Debashis Dhar.

Block – 2
Assessment in Learning

Unit-II
Domain-specific Assessment

CONTENT STRUCTURE:

INTRODUCTION

A Learning Objective describes a study's purpose and what should be done at the end of the course. The course should be pre-decided on what should be covered in the study materials. The activity, learning, or course goal should be decided and completed through assignments and assessments for learning. The objectives must be clear to students so that they can concentrate on their goals.

Concentration for students is very important to complete their course and get the desired outcome. When the focus is clear, the learners and lecturer can both achieve their goals.

Articulated Learning Objectives are important because they provide students with a clear vision for studying and putting in learning efforts. It guides them through assessment strategies and homework.Learning Objective is a way to establish the expectations for students to have clarity of what is expected of them. If communicated properly, students can easily achieve their goals in time with an effective approach. They will define the scope and sequence of work before starting it. If not, then students don't have any clarity of work and the way to work. Aligning Learning Objectives, instructional material, and assessment dynamically is important. It should be cleared by instructors what is wanted from the learners.

LEARNING OBJECTIVES

After going through this Unit, you will be able to —

1. Conceptualize and differentiate between Objectives of Learning and Outcomes of Learning;
2. Apprehend the relations between them;
3. Recognize the assessment of learners in the Cognitive Domain;
4. Recognize the assessment of learners in the Affective Domain;
5. Recognize the assessment of learners in the Psychomotor Domain;
6. Analyze the various aspects of assessment in different domains.

2.2.1: WHAT ARE THE OBJECTIVES OF LEARNING?

Learning goals are broad statements written from an instructor's or institution's perspective that give the general content and direction of a learning experience. They generally describe what an instructor or program aims to do; i.e., "The curriculum will introduce students to the major research methods of the discipline."

Learning objectives are statements of what you intend to teach or cover in a learning experience. They tend to be-

- More specific than learning goals
- Not necessarily observable nor measurable
- Instructor-centered rather than student-centered
- Useful in helping you formulate more specific learning outcomes

For example—

- We will cover historical perspectives and debates about the role of mass communication in the 20th century.
- Students will understand the impacts and effects of new media on identity formation.

Learning objectives can introduce unintended complexity because sometimes they are written in terms of what you intend to teach (the first example above) and sometimes they are written in terms of what you expect students will learn (the latter example). In contrast, learning outcomes should always be written with a focus on the learner and how the learner will demonstrate achievement, which makes it easier to assess students' learning.

2.2.2: WHAT ARE THE OUTCOMES OF LEARNING?

Identifying the desired results of a learning experience is the first step of backward design. Learning outcomes are used for this purpose. Learning outcomes are also valuable in these ways:

Learning outcomes help instructors to-

- describe to students what is expected of them
- plan appropriate teaching strategies, materials, and assessments
- learn from and make changes to the curriculum to improve student learning
- assess how the outcomes of a single course align with larger outcomes for an entire program

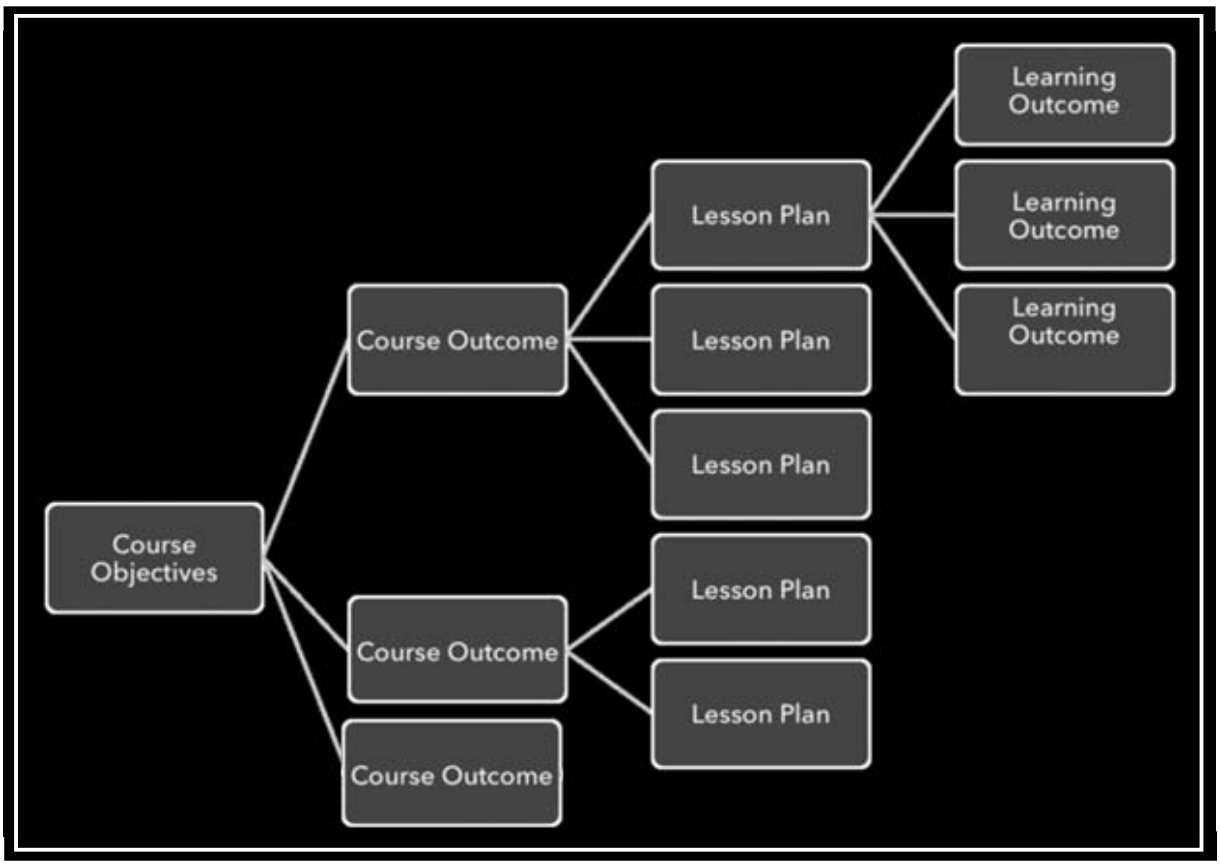
Learning outcomes help students to-

- anticipate what they will gain from an educational experience
- track their progress and know where they stand
- know in advance how they'll be assessed

2.2.3: RELATIONS BETWEEN OBJECTIVES AND OUTCOMES OF LEARNING

Written course-level and module-level outcomes are the foundation upon which effective courses are designed. Outcomes inform both the way students are evaluated in a course and the way a course will be organized. Effective learning outcomes are student-centered, measurable, concise, meaningful, achievable, and outcome-based (rather than task-based).

Relations between objectives and outcomes



These terms are often used interchangeably and they are all related to the teaching and learning that is expected to take place in the classroom. However, the difference between goals or objectives and outcomes lies in the emphasis on who will be performing the activities. Learning goals and objectives generally describe what an instructor, program, or institution aims to do, whereas, a learning outcome describes in observable and measurable terms what a student can do as a result of completing a learning experience (e.g., course, project, or unit).

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- ❖ learn from and make changes to the curriculum to improve student learning
- ❖ assess how the outcomes of a single course align with larger outcomes for an entire program

Learning outcomes help students to-

- ❖ anticipate what they will gain from an educational experience
- ❖ track their progress and know where they stand
- ❖ know in advance how they'll be assessed

2.2.4: ASSESSMENT OF COGNITIVE (ANDERSON & KRATHWOHL) DOMAIN OF LEARNING

In 1956, Benjamin. S. Bloom classified domains of human learning into three parts – cognitive (knowing or head), affective (feeling or heart), and psychomotor (doing or kinesthetic, tactile or hand/body) as the educational objectives. Bloom's taxonomy dealt with the varied aspects of human learning and was arranged hierarchically, preceding from the simplest functions to those that are more complex.

Anderson and Krathwohlare the primary authors of the revisions to what had become known as Bloom's Taxonomy — an ordering of cognitive skills. This taxonomy had permeated teaching and instructional planning for almost 50 years before it was revised in 2001. And although these crucial revisions were published in 2001, surprisingly there are still educators who have never heard of Anderson and Krathwohl or their important work about Bloom's Cognitive Taxonomy. Both of these primary authors were in a perfect position to

orchestrate looking at the classic taxonomy critically. They called together a group of educational psychologists and educators to help them with the revisions. Lorin Anderson was once a student of the famed Benjamin Bloom, and David Krathwohl was one of Bloom's partners as he devised his classic cognitive taxonomy.

In the United States, from the late 1950s into the early 1970s, there were attempts to dissect and classify the varied domains of human learning – cognitive (knowing, or head), affective (emotions, feelings, or heart), and psychomotor (doing, or kinesthetic, tactile, haptic or hand/body). The resulting efforts yielded a series of taxonomies for each area. The aforementioned taxonomies deal with the varied aspects of human learning and were arranged hierarchically, proceeding from the simplest functions to those that are more complex. Bloom's Cognitive Taxonomy had been a staple in teacher training and professional preparation for almost 40 years before Anderson and Krathwohl instituted an updated version.

While all of the taxonomies above have been defined and used for many years, there came about at the beginning of the 21st century a new version of the cognitive taxonomy, known commonly before as Bloom's Taxonomy. While David Krathwohl was one of the original authors ofthis taxonomy the work was named after the senior or first author Benjamin Bloom. The affective domain was not categorized until 1964 and as David Krathwohl was the lead author of this endeavor, it should bear his name, not Bloom's. Bloom had nothing to do with the psychomotor domain and it was not described or named until the first part of the 1970s. There are 3 versions of this taxonomy by 3 different authors — Harrow (1972); Simpson (1972); and Dave (1970).

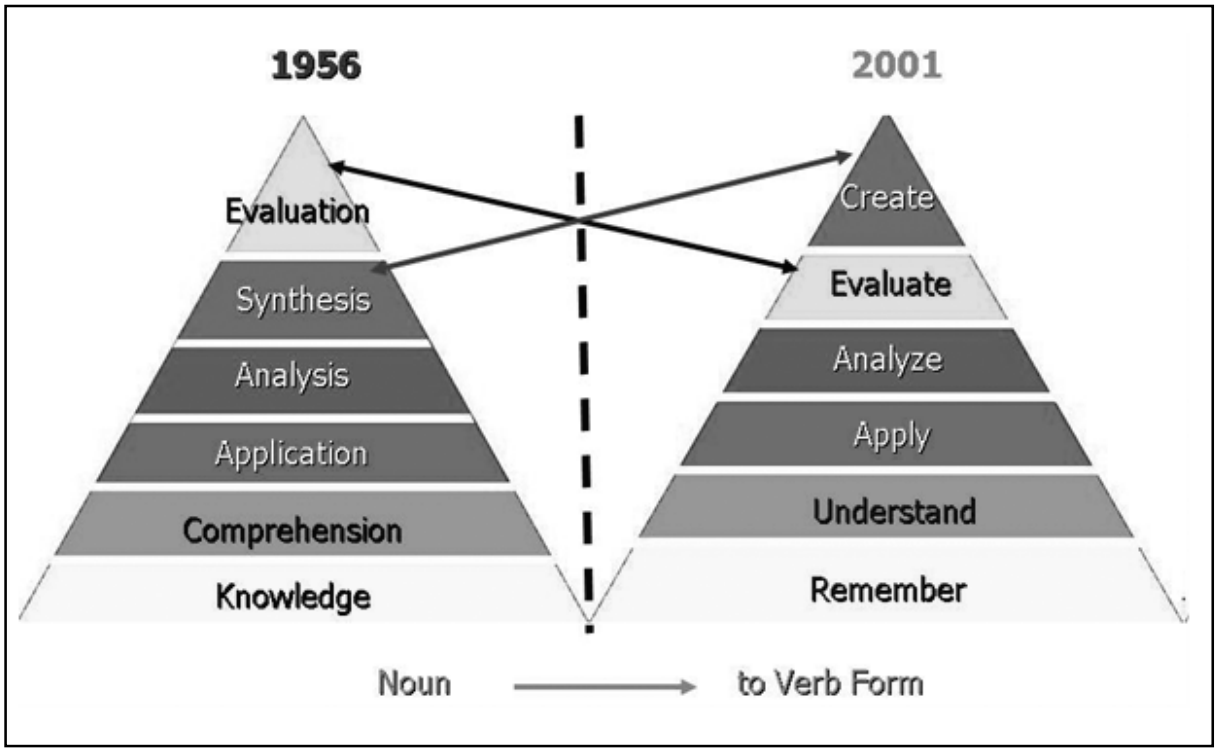
The Cognitive Domain:

The following chart includes the two primary existing taxonomies of cognition. Please note in the table below, the one on the left, entitled Bloom's, is based on the original work of Benjamin Bloom and others as they attempted in 1956 to define the functions of thought, coming to know, or cognition. This taxonomy is almost 60 years old. The taxonomy on the right is the more recent adaptation and is the redefined work of Bloom in 2000-01. That one is labeled Anderson and Krathwohl. The group redefining Bloom's original concepts worked from 1995-2000. As indicated above, this group was assembled by Lorin Anderson and David Krathwohl and included people with expertise in the areas of cognitive psychology, curriculum and instruction, and educational testing, measurement, and assessment. The new adaptation also took into consideration many of Bloom's concerns and criticisms of his original taxonomy.

As you will see the primary differences are not in the listings or rewordings from nouns to verbs, the renaming of some of the components, or even in the re-positioning of the last two categories. The major differences lie in the more useful and comprehensive additions of how the taxonomy intersects and acts upon different types and levels of knowledge — factual, conceptual, procedural, and metacognitive. This melding can be charted to see how one is teaching at both knowledge and cognitive process levels. Please remember the chart goes from simple to more complex and challenging types of thinking.

However, over some time, new ideas and insights emerged about teaching-learning processes. To reflect their changed insight and yield of research and to meet the needs of the teaching-learning scenario of the twenty-first-century learners, Lorin. W. Anderson, a former student of Bloom and David. R. Krathwohl, one of the co-authors of Bloom's book, led a team of experts in revising Bloom's taxonomy.

The result was published in 2001 in the form of a book- *A Taxonomy of Learning, Teaching and Assessing- A Revision of Bloom's Taxonomy of educational objectives* (New York- Allyn and Bacon). The revised taxonomy appears similar, yet with significant changes.



Source: Wilson, Leslie, O. 2001

Taxonomies of the Cognitive Domain

Bloom's Taxonomy 1956	Anderson and Krathwohl's Taxonomy 2001
1. Knowledge: Remembering or retrieving previouslylearned material. Examples of verbs that relate to this actionare:Identify, record name, relate list, define, recall, recognize, acquire, memorize, repeat	1. Remembering: Recognizing or recalling knowledge from memory. Remembering iswhen memory is used to produceor retrieve definitions, facts, orlists, or to recite previouslylearned information.
2. Comprehension: The ability to grasp or construct meaning from material. Examples of verbs that relate to this function are:restate, locate, report, identify, discuss, illustrate, interpret, recognize, explain, describe, discuss, draw, represent,	2. Understanding:Construct meaning from different types of functions be they written or graphic messages or activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing, or explaining.
3. Application: The ability to use learned material, or to implement the material in new and concrete situations. Examples of verbs that relate to this function are:Apply, relate, organize, employ, practice calculate, develop, translate, restructure, interpret, exhibit, use, operate, demonstrate, illustrate, dramatize	3. Applying:Carrying out or using a procedure through executing, or implementing. Applying relates to or refers to situations where learned material is used through products like models, presentations, interviews, or simulations.
4. Analysis: The ability to break down or distinguish the parts of material into its components so that its organizational structure may be better understood. Examples of verbs that relate to this function are:analyze, compare, differentiate, contrast, experiment, probe, inquire, investigate, detect, scrutinize, discover, examine, contrast, survey, classify, inspect, dissect, categorize, deduce, discriminate, separate	4. Analyzing:Breaking materials or concepts into parts, determining how the parts relate to one another or how they interrelate, or how the parts relate to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing, he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations.

5. Synthesis: The ability to put parts together to form a coherent or unique new whole. Examples of verbs that relate to this function are:Compose, produce, plan, invent, propose, develop, create, prepare, set up, generalize, organize, originate, predict, modify, tell, document, combine, derive, write, relate, propose	5. Evaluating:Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy, evaluating comes before creating as it is often a necessary part of the precursory behavior before one creates something.
6. Evaluation: The ability to judge, check, and even critique the value of material for a given purpose. Examples of verbs that relate to this function are:judge, assess, argue, decide to validate, consider, compare, evaluate,choose, rate, select,appraise the value, conclude, measure, estimate, criticize, infer, deduce	6. Creating:Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way, or synthesize parts into something new and different creating a new form or product. This process is the most difficult mental function in the new taxonomy.

The Revised Taxonomy is Different in Three Ways-

Bloom vs. Anderson/Krathwohl

(i) Terminology:

1. It is a shift from a noun to a verb.

2. The word knowledge was considered as a category of thinking and is replaced by remembering. Thinking is an active process and knowledge is the product of thinking. Knowledge is not viewed as a form of thinking.

3. Comprehension is revised as understanding.

4. Evaluating has replaced evaluation. The word synthesis was not very communicative about the learning actions. Therefore, it is replaced by creating and putting learned things together in a novel way.

5. The subcategories of the six categories are all in the form of verbs.

(ii) Structure:

In Bloom's taxonomy, one has to find some ways to cut across different subject areas as the nature and contents of each subject area are different. Based on the theory of cognitive psychology, Anderson and Krathwohl came up with four dimensions of knowledge.

The intersection of the knowledge dimension and cognitive process dimensions gives 24 cells making the taxonomy table a two-dimensional crossing of rows and columns showingknowledge and the cognitive process are equally important. Let us see the meaning of different dimensions of knowledge in the context of biological science.

Knowledge Dimension	*Cognitive Process Dimension*					
	Remembering	*Understanding*	*Applying*	*Analysing*	*Evaluating*	*Creating*
Facutal knowledge						
Conceptual knowledge						
Procedural knowledge						
Metacognitive knowledge						

Two-dimensional Taxonomy of Anderson & Krathwohl

1. Factual knowledge-

The basic elements that students must know to be acquainted with a discipline or solve a problem in it. (a) Knowledge of terminology (b) knowledge of specific details and elements.

2. Conceptual knowledge-

The interrelationship among the basic elements within a layer structure that enable them to function together, (a) knowledge of classification (b) knowledge of principles and generalization (c) knowledge of theories, models, and structures.

3. Procedural knowledge:

It deals with how to do something- methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.

(a) Knowledge of subject-specific skills and algorithms.

(b) Knowledge of techniques and methods.

(c) Knowledge of criteria for determining when to use appropriate procedures.

4. Metacognitive Knowledge:

Knowledge of cognition in general as well as awareness of one’s cognition.

(a) Strategic knowledge (b) cognitive tasks, including appropriate contextual and conditional knowledge, (c) self-knowledge

E.g. Knowing how to describe the formation of the rainbow, so, that it is approved by the teacher can be one of the aspects of metacognitive learning.

Let us now see how procedural knowledge can be matched with the cognitive process dimension with the help of the following example.

The structure is different in the following ways:

- One-dimensional taxonomy is revised in two-dimensional forms.

The order of synthesis and evaluation is interchanged as the taxonomy is considered to reflect thinking levels in increasing order of complexities. Creative thinking (synthesis) is a more complex form of thinking than critical thinking (evaluation). One can have critical thinking (judging and justifying ideas or things) without being creative (accepting or rejecting ideas to create new ideas or things).

- In Bloom's taxonomy, evaluation was the uppermost level of thinking. In the revised taxonomy creating is at the top of the hierarchy.
- The revised taxonomy is a more authentic tool for curriculum planning, and developing materials for theteaching and assessment process.
- Bloom's taxonomy was viewed as the tool best applied for earlier years of schooling. Anderson and Krathwohl's taxonomy can easily be used for higher levels also. In this sense, it is broader in use.
- Emphasis is more on the description of the subcategories of learning.

For example-

(i) Recognizing- Locating knowledge in memory that is consistent with the presented material.

(ii) Recalling- Retrieving relevant knowledge from long-term memory.

The subcategories of the cognitive process provide the form of learning actions and the possible learning products as a result of the teaching-learning process.Thus, we see that the revised Bloom's taxonomy has several subcategories of cognitive processes. It is more explicit and provides a powerful tool to help structure teaching-learning strategies and processes.

2.2.5: ASSESSMENT OF AFFECTIVE (KRATHWOHL) DOMAIN OF LEARNING

Affective learning is demonstrated by behaviors indicating attitudes of awareness, interest, attention, concern, and responsibility, the ability to listen and respond in interactions with others, and the ability to demonstrate those attitudinal characteristics or values which are appropriate to the test situation and the field of study.

It was prepared in 1964 by Dr.Bloom, Krathwohl, and Masia. It emphasizes the development of the heart. It deals with values, attitudes, interests, appreciation, and social and emotional adjustment. If the objectives of the affective domain are attended to and achieved, the evaluator will be in a position to predict the behavior of an individual.

Affective taxonomy is divided into five major classes arranged in a hierarchical order based on the level of involvement:

Characterization
Organization
Valuating
Responding
Receiving

1. Receiving

Receiving refers to the student's willingness to attend to particular phenomena of stimuli (classroom activities, textbook, music, etc.). Learning outcomes in this area range from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving represents the lowest level of learning outcomes in the affective domain.

The learner should be sensitized to the existence of certain phenomena and stimuli in their environment. This includes awareness, and willingness to receive and give controlled or selected attention. (Ability to discriminate the stimuli)

For example,

- ❖ Listening to discussions of controversial issues with an open mind.
- ❖ Respecting the rights of others.
- ❖ Listen for and remember the name of newly introduced people.

Action Verbs Used

asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits erect, replies, uses

2. Responding

Responding refers to active participation on the part of the student. At this level, he or she not only attends to a particular phenomenon but also reacts to it in some way. Learning outcomes in this area may emphasize acquiescence in responding (reads assigned material), willingness to respond (voluntarily reads beyond assignment), or satisfaction in responding

(reads for pleasure or enjoyment). The higher levels of this category include those instructional objectives that are commonly classified under “interest”; that is, those that stress the seeking out and enjoyment of particular activities.

This is with the response that goes beyond merely attending to phenomena. A person is actively involved in attending to them. This involves responding, willingness to respond, and satisfaction in response. The person attaches emotional significance to the stimuli.

For example,

- ❖ Completing homework assignments.
- ❖ Participating in team problem-solving activities.
- ❖ Questions new ideas, concepts, models, etc. to fully understand them

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Action Verbs Used

answers, assists, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes

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3. Valuing

Valuing is concerned with the worth or value a studentattaches to a particular object, phenomenon, or behavior. This ranges in degree from the simpler acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group). Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student’s overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value identifiable. Instructional objectives that are commonly classified under “attitudes” and “appreciation” would fall into this category.

Stage of internalization-becomes part of the person. This includes acceptance of a value, preference for a value, commitment to a goal,idea, or bef, or conviction regarding a point of view. Consistency in behavior can be predicted. Forms principles of life and behavior are based on it.

For example,

- ❖ Accepting the idea that integrated curricula are a good way to learn.
- ❖ Participating in a campus blood drive.

- ❖ Demonstrates belief in the democratic process.
- ❖ Shows the ability to solve problems.
- ❖ Informs management on matters that one feels strongly about.

Action Verbs Used

completes, describes, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works

4. Organization

The organization is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus, the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value (recognizes the responsibility of each individual for improving human relations) or with the organization of a value system (develops a vocational plan that satisfies his or her need for both economic security and social service). Instructional objectives relating to the development of a philosophy of life would fall into this category.

For situations where more than one value is relevant, the need arises for the organization of the value into a system. The determination of the interrelationship among them and the establishment of the dominant and pervasive value.

For example,

- ❖ Recognizing own abilities, limitations, and values and developing realistic aspirations.
- ❖ Explains the role of systematic planning in solving problems.
- ❖ Accepts professional ethical standards.
- ❖ Prioritizes time effectively to meet the needs of the organization, family, and self.

Action Verbs Used

adheres, alters, arranges, combines, compares, completes, defends, explains, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes

5. Characterization by a value or value set

At this level, the already existing values are organized into some kind of an internally consistent system and control the behavior of an individual who attains an integration of his beliefs and attitudes into a total philosophy. This organization of values that control his behavior is called value complex/set. Values like honesty, truthfulness, and friendship develop through these levels of the affective domain. A child first receives a variety of stimuli from his environment. He begins to respond to those that interest and attract him. He always speaks the truth and is honest. He may like to interact with friends. He then evaluates these emotions, feelings, and values based on his experiences and the rewards and punishments received. The values of truthfulness, honesty, and friendship will be assigned some significance. The values which are of importance to him will be placed higher up on the hierarchy and those which are of less value go down, thus creating an organization of values. The individual will then behave in different situations according to his / her value organization. So much so that gradually they become a part of his personality and define his/her character.

Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student. Instructional objectives that are concerned with the student's general patterns of adjustment (personal, social, emotional) would be appropriate here. For example,

- A person's lifestyle influences reactions to many different kinds of situations.
- Shows self-reliance when working independently.
- Displays a professional commitment to ethical practice daily.
- Revises judgments and changes behavior in light of new evidence.

Action Verbs Used

acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, uses, verifies

2.2.6: ASSESSMENT OF PSYCHOMOTOR (R.H. DAVE) DOMAIN OF LEARNING

Dave's taxonomy of the psychomotor domain includes utilizing motor skills and the ability to coordinate them. This psychomotor domain includes physical movement, coordination,

and use of the motor-skill areas. Development of these skills requires practice and is measured in terms of speed, strength, endurance, coordination, precision, distance, procedures, or techniques in execution. Dave's psychomotor domain is the simplest and generally easiest to apply in the corporate development environment.The psychomotor domain is divided into five major classes arranged in a hierarchical order based on the level of proficiency.

Naturalization
Articulation
Precision
Manipulation
Imitation

Assessment of Psychomotor Domain of Learning

Dave's Psychomotor domain (1970) is probably the most commonly referenced and used psychomotor domain interpretation. Dave's five levels of motor skills represent different degrees of competence in performing a skill. It captures the levels of competence in the stages of learning from initial exposure to final mastery. Imitation is the simplest level while Naturalization is the most complex level.

1. Imitation

Imitation involves the ability to learn and pattern your behavior after someone else. The learner observes a skill and attempts to repeat it or sees a finished product and attempts to replicate it while attending to an exemplar. At this level, the performance may be of low quality. For example, the learner will be able to-

- Copy a work of art
- Perform a skill while observing a demonstrator.

Action Verbs Used

Attempt, Copy, Imitate, Mimic, Follow, Repeat, Duplicate, Replicate, Reproduce

2. Manipulation

Manipulation involves the ability to perform certain tasks by memory or following instructions. The learner performs the skill or recognizably produces the product by following general instructions rather than observation.

For example, the learner will be able to-

- Perform a skill on one's own after taking lessons or reading about it
- Follow the instructions to build a model.

Action Verbs Used

Act, Build, Execute, Perform, Complete, Accomplish, Follow, Play, Produce

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3. Precision

Precision involves the ability to perform certain tasks with some level of expertise and without help or intervention from others. The learner independently performs the skill or produces the product, with accuracy, proportion, and exactness; at an expert level. At this level, the performance becomes more exact and refined.

For example, the learner will be able to-

- Perform a skill or task without assistance
- Demonstrate a task to a beginner
- Work and rework something, so it will be "just right."

Action Verbs Used

Achieve automatically. Excel expertly, Perform masterfully, Demonstrate skilfully, Calibrate perfectly

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4. Articulation

Articulation involves the ability to adapt and integrate multiple actions to develop methods to meet varying and novel requirements. The learner modifies the skill or the product to fit new situations; combines more than one skill in sequence with harmony and consistency.

For example, the learner will be able to-

- Combine a series of skills to produce a video that involves music, drama, color, sound, etc.
- Combine a series of skills or activities to meet a novel requirement.

Action Verbs Used

Adapt, Construct, Combine, Create, Customize, Modify, Formulate, Alter, Originate

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5. Naturalization

Naturalization is the ability to perform actions in an automatic, intuitive, or unconscious way. The learner accomplishes one or more skills with ease and makes the skill automatic with limited physical or mental exertion. At this level, the performance has become second nature or natural, without needing to think much about it.

For example, the learner will be able to-

- Manage a car into a tight parallel parking spot.
- Operate a computer quickly and accurately.
- Display competence while playing the piano. For example, Michael Jordan playing basketball or Nancy Lopez hitting a golf ball.

Action Verbs Used

Create, Design, Develop, Invent, Manage naturally

Different skills like dancing, cooking, dramatics, driving, writing, reading, computer, swimming, etc. are learned through these stages. For instance, when learning to write children initially simply imitate the adults in their surroundings and scribble on paper. Later they learn to hold the pencil straight, position the book properly and learn to write. Initially, their writing may not be clear but gradually they learn to write clearly. They then develop precision in writing. As they grow, theycan listen and write or think and write on their own. Soon writing becomes naturally a part of them which does not require any extra effort.

For the development of personality, the development of all three domains is important. When all three domains interact, **it is called the 'tripartite structure'**. However, in education very often we emphasize the cognitive domain more than the affective and psychomotor domains. For the development of a learner's personality, all three domains must have equal dominance.

Uses of Taxonomies in Evaluation

- Analyzes and classify objectives
- Achieves all-round development
- Serves as a basis for comparison of the syllabus
- Decides the levels of objectives for different classes
- Provides reliable and valid evaluation procedures
- Provides guidelines to report the progress of a child

CONCLUSION

Learning objectives or targets are statements that define what students are expected to learn. Since the early 1990s the term *standards* have been used to designate what students should learn at different grade levels in each subject. These statements need to be clear and reflect the range of content and skills to be emphasized, as well as the level of cognition required to demonstrate what has been learned. States have identified standards that are the basis for accountability tests. They tend to be broad, covering an entire year of learning. Objectives and learning targets are more specific and refer to what is to be achieved over short units of instruction.

The level of cognition or thinking needed for meeting learning objectives is a critical part of classroom assessment. Cognition can be very simple and consist of recalling or remembering something, or more complex in requiring knowledge utilization with skills such as application, analysis, reasoning, critical thinking, or evaluation of something (these are often called *higher-order* skills) (Marzano and Kendall, 2007). Educators often use Bloom's taxonomies to define levels of skills (Anderson and Krathwohl, 2001; Bloom, 1956), although others reflect more recent research (e.g., Marzano and Kendall, 2007). As long as the objective is clear it will provide a sound basis for the assessments and how results will be scored.

LET US SUM UP

Learning goals are broad statements written from an instructor's or institution's perspective that give the general content and direction of a learning experience. They generally describe what an instructor or program aims to do.Identifying the desired results of a learning experience is the first step of backward design. Learning outcomes are used for this purpose.

In 1956, Benjamin. S. Bloom classified domains of human learning into three parts – cognitive (knowing or head), affective (feeling or heart), and psychomotor (doing or kinesthetic, tactile or hand/body) as the educational objectives. Bloom's taxonomy dealt with the varied aspects of human learning and was arranged hierarchically, preceding from the simplest functions to those that are more complex.

Based on the theory of cognitive psychology, Anderson and Krathwohl came up with four dimensions of knowledge.

1. Factual knowledge-

The basic elements that students must know to be acquainted with a discipline or solve a problem in it. (a) Knowledge of terminology (b) knowledge of specific details and elements.

2. Conceptual knowledge-

The interrelationship among the basic elements within a layer structure that enable them to function together, (a) knowledge of classification (b) knowledge of principles and generalization (c) knowledge of theories, models, and structures.

3. Procedural knowledge:

It deals with how to do something- methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.

4. Metacognitive Knowledge:

Knowledge of cognition in general as well as awareness of one's cognition.

(a) Strategic knowledge (b) cognitive tasks, including appropriate contextual and conditional knowledge, (c) self-knowledge

Affective learning is demonstrated by behaviors indicating attitudes of awareness, interest, attention, concern, and responsibility, the ability to listen and respond in interactions with others, and the ability to demonstrate those attitudinal characteristics or values which are appropriate to the test situation and the field of study.

Dave's Psychomotor domain (1970) is probably the most commonly referenced and used psychomotor domain interpretation. Dave's five levels of motor skills represent different degrees of competence in performing a skill. It captures the levels of competence in the stages of learning from initial exposure to final mastery. Imitation is the simplest level while Naturalization is the most complex level.

ASSIGNMENT

1. Differentiate between Objectives of Learning and Outcomes of Learning.
2. Discuss Anderson & Krathwohl's (2021) taxonomy of the Cognitive Domain. How is it different from Bloom's?
3. What are the sub-categories of the Affective Domain? How "Organization" could be assessed?
4. State the assessment process of the Psycho-motor domain of learners.

SUGGESTED READINGS

Dave, R.H. (1970). Psychomotor levels in *Developing and Writing Behavioral Objectives, pp.20-21*. R.J. Armstrong, ed. Tucson, Arizona: Educational Innovators Press.

Alberta Education. (2003). Types of classroom Assessment http://www.learnalberta.ca/content/mewa/html/assessment/types.html

Assessment for Learning - S. K. Mangal& Shubhra Mangal

ASSESSMENTFOR LEARNING – Prasanth Venpakal

Earl, Lorna (2003) Assessment as Learning: Using Classroom Assessment to Maximise Student Learning. Thousand Oaks, CA, Corwin Press.

Assessment and Learning: The Learner's Perspective - Louise Hayward

Block - 3
Assessment in Pedagogy of Education

Unit – I
Feedback Devices

CONTENT STRUCTURE:

INTRODUCTION

Feedback is crucial in learning because it helps learners identify their strengths and weaknesses, and provides guidance on how to improve their performance. Overall, feedback plays a critical role in the learning process. It provides learners with the information needed to improve their performance, develop metacognitive skills, and achieve their goals. Feedback is essential in the learning process because it helps individuals to understand their strengths and weaknesses, make adjustments, and improve their performance. Here are some reasons why feedback is important in learning:

1. **Clarification:** Feedback provides clarity on what is expected and what needs to be improved. This clarity helps learners focus their efforts on specific areas that require improvement.

2. **Motivation:** Feedback can be a source of motivation, as it recognizes learners' accomplishments and encourages them to continue to improve. It can also provide a sense of accomplishment and boost confidence, which can motivate learners to work harder and achieve more.
3. **Self-Reflection:** Feedback helps learners reflect on their own learning process, which is essential to developing metacognitive skills. Metacognition is the ability to monitor and regulate one's own learning, and feedback provides the information needed to do this effectively.
4. **Course Correction:** Feedback enables learners to make course corrections, addressing misconceptions and errors in their understanding. This helps learners avoid further mistakes and ensures that they are progressing in the right direction.

In summary, feedback is crucial in the learning process as it helps learners to identify their areas of improvement, encourages self-reflection, enhances motivation, provides guidance, and fosters communication.

LEARNING OBJECTIVES

After going through this Unit, you will be able to —

1. Conceptualize the idea of Feedback and Feedback Devices in learning;
2. Understand the different types of Feedback Devices;
3. Apprehend the concept of Portfolio and Reflective Journal;
4. Analyse and understand the difference between assessment and evaluation.

3.1.1: WHAT ARE FEEDBACK DEVICES?

Feedback devices are tools that provide feedback to the learner through auditory, visual, or physical cues. For example, there are devices that give feedback on the depth and rate of chest compressions. These devices are most useful when tailored to how a learner best receives feedback.

Feedback devices are used in teaching for controlling, reinforcing, modifying, and improving the performance and behavior of teachers. Feedback devices are quite effective for bringing desirable changes and improvement in the teaching behavior of the individual teacher or group of teachers whether in-service or under training.

A feedback device is a process or mechanism with the help of which an individual or assistant receives information (feedback) about its working in terms of its strength and

weakness in order to bring decidable improvement. The teacher can teach well and strategy can work well with the help of appropriate feedback devices simply because it is able to receive timely and appropriate knowledge of the strength and weaknesses of its working.

TYPES OF FEEDBACK

Feedback can serve several purposes. It can be provided as a single entity – ie: informal feedback on a student's grasp of a concept in class – or a combination of multiple entities – formal, formative, peer feedback on stage one of an assessment task. Each has its place in enhancing and maximizing learning, thus where possible, courses should provide opportunities for a range of feedback types.

Informal feedback

Informal feedback can occur at any time as it is something that emerges spontaneously in the moment or during the action. Therefore, informal feedback requires the building of rapport with students to effectively encourage, coach, or guide them in daily management and decision-making for learning. This might occur in the classroom, over the phone, in an online forum, or virtual classroom.

Formal feedback

Formal feedback is planned and systematically scheduled into the process. Usually associated with assessment tasks, formal feedback includes the likes of marking criteria, competencies, or achievement of standards, and is recorded for both the student and organization as evidence.

Formative feedback

The goal of formative assessment is to *monitor student learning* to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. Therefore formative feedback is best given early in the course, and before summative assessments. Formative feedback helps students to improve and prevents them from making the same mistakes again. In some cases, feedback is required before students can progress, or feel capable of progressing, to the next stage of the assessment.

Summative feedback

The goal of summative assessment is to *evaluate student learning* at the end of an instructional unit by comparing it against some standard or benchmark. Therefore summative feedback consists of detailed comments that are related to specific aspects of their work, clearly explaining how the mark was derived from the criteria provided, and additional constructive comments on how the work could be improved.

Student peer feedback

There is no longer a need for teachers to be the only expertsin a course. With basic instruction and ongoing support, students can learn to give quality feedback, which is highly valued by peers. Providing students with regular opportunities to give and receive peer feedback enrinrichir learning experiences and develops their professional skill set.

Student self-feedback

This is the ultimate goal of feedback for learning. During the provision of feedback, teachers have the opportunity not only to provide direction for the students but to teach them, through explicit modeling and instruction, the skills of self-assessment and goal setting, leading them to become more independent (Sackstein, 2017). To help students reach autonomy teachers can explicitly identify, share, and clarify learning goals and success criteria; model the application of criteria using samples; provide guided opportunities for self-feedback; teach students how to use feedback to determine next steps and set goals; and allow time for self-feedback/reflection.

Constructive feedback

This type of feedback is specific, issue-focused, and based on observations. There are four types of constructive feedback:

- **Negative feedback** – corrective comments about past behavior. Focuses on behavior that wasn't successful and shouldn't be repeated.
- **Positive feedback** – affirming comments about past behavior. Focuses on behavior that was successful and should be continued.
- **Negative feed-forward** – corrective comments about future performance. Focuses on behavior that should be avoided in the future.
- **Positive feed-forward** – affirming comments about future behavior. Focused on behavior that will improve performance in the future.

CRITERIA OF FEEDBACK DEVICES

Immediate: Presented while the event is still fresh in the student's mind. This also entails feedback to be provided to the person who attended the encounter, which further increases its credibility.

Specific: Addresses certain points of performance and not be based on generalizations. Thus, feedback information such as, 'your physical examination skills of the patient's abdomen needs some revision', is rarely helpful to the student who performed the task because he will not know which part of his/her performance particularly requires attention.

Instead, it would be more useful to the student if you said, ‘how you put your hand on the abdomen for superficial palpation requires improvement, your wrist should be straight. Try to kneel’ explaining why his/her performance is not correct and suggesting a correction method; feedback should concentrate on behaviors that can be changed. Learners found feedback most effective when it focuses on specific performance, especially when it is accompanied by reasons of performance was inadequate.

- **Non-judgemental:** Phrased in non-evaluative language, which could hamper the defensive attitude of some students; for example, information such as, ‘your history of the patient’s illness did not cover the possibilities of pancreatitis and peptic ulcer disease, non-judgemental sentence, is much better than when you say, ‘your history was so deficient’, judgemental sentence
- **Based on first-hand data:** Provided by the same person who attended the event so that the learners are likely to believe in it. Altmiller asserted that speaking in the first person using I instead of he/she would enhance the teacher’s credibility and shows the information provided as factual.
- **Accurate:** Based on real observation and assessment of performance; it should report events as they have occurred and avoid bias. Kuvaas et al., have indicated that when feedback is not seen as accurate and acceptable, it would generate disagreement between the feedback provider and receiver, and on that occasion, it is less likely to be taken and acted upon to improve performance. Ruscher et al., have pointed out overly positive feedback time may be viewed by learners as a kind of pity and sympathy that could result in the feedback being disregarded.
- **Suggest improvement plans:** Not limited to one situation and advises actions for future improvement. A key feature of constructive feedback that is commonly mentioned is that it provides options for improvement in future tasks, which increases its effectiveness and allows the students to view it as an opportunity for learning.
- **Seen as ‘helpful’:** Not embarrassing, respectful, focuses on behavior, not personal,y, and balances positive and negative comments. In this way, it is less likely to elicit a negative emotional reaction in learners. Beginning with caring statements is a useful strategy that reflects teachers’ motivation and his/her concern about his/her learners and allows the students to feel safe during the process; an example is, ‘I am saying this because my ambition is to see you an excellent doctor in the future’. Beginning with caring statements encourages the students to accept and work on the feedback and should be assembled in every feedback message. Mo moreover, Murdoch-Eaton in 2012 indicated that negative feedback tends to generate responses of avoidance, prevention, and, obligation that would likely jeopardize the role of feedback in learning.

- **Solicited rather than imposed:** Benefit from formal and informal occasions to arise and endorse the active role of students in seeking information regarding their performance. Fong et al. mentioned that feedback-seeking attitudes are encouraged in learning environments in which ‘informational feedback’ the feedback that involves information on goal progress and how to accomplish it - is provided. Delva et al. pointed to the interplay of other factors in shaping the feedback-seeking habit of learners. They recommended the establishment of a learning climate that encourages feedback and building comfortable relationships between teachers and learners to foster feedback-seeking behavior.

- **Relevant:** Targets specific learning performance tailored to the individual needs and interests of learners. Ibrahim et al. elaborated on interns’ dissatisfaction with performance appraisal in their study and reasoned that to the lack of perceived relevance of many of the appraisal domains. He recommended the involvement of immediate supervisors, who work with interndailyis in the delivery of performance feedback and more, with emphasis on personal feedback addressing one’s strengths and weaknesses. Hauer and Kogan have asserted the need to address the vision of feedback in areas in which the students are most interested, for example, their bedside clinical skills, rather than commenting on their written assignments and verbal presentations.

- **Balanced:** The amount of information delivered is neither scanty nor overwhelming. Ramani and Krackov have advocated that the amount of feedback presented in an encounter should be limited to what the learner can absorb.

- **Understandable:** So that learners can act upon it, and the feedback loop could be closed. The feedback that is not understood and not followed by advice on how performance can be improved is unlikely to enhance learning.

- **Of multiple cycles:** Provided sequentially over an extended time, which could display what the students have done with previous feedback messages? This correlates with the concept of ‘feed forward,’ in which the students are enabled to show how they translate the feedback taken from one task into another subsequent task.

- **Tailored:** Pitched at the appropriate level of learners and balance the amount of instruction versus the amount of feedback according to the learners’ capabilities. According to Hauer and Kogan, the credibility of feedback is augmented when the task being assessed is relevant, meaningful to patient care, and appropriate to learners’ abilities.

Confidential: Provided without intermediary and privately in suitable situations. Provision of feedback, particularly that one which highlights underperformance, to learners in front of patients and their peers may embarrass the learner and limit the usefulness of the feedback.

Various types of Feedback Devices are-

- Optical Sensors. Color & Contrast Sensors. Distance Sensors. Photoelectric Sensors.
- Inductive Sensors.
- Tilt Sensors.
- Ultrasonic Sensors.
- Vision Sensors.
- Draw Wire Encoders.
- Hollow Shaft Rotary Encoders. Shafted Rotary Encoders.

3.1.2: GUIDANCE AS A FEEDBACK DEVICE

Effective Feedback devices shoot target individual needs, be a link to specific assessment criteria, and be received by a student in time to benefit subsequent work. It-

- Guide students to adapt and adjust their learning strategies.
- Guide teachers to adapt and adjust their teaching to accommodate students' learning needs.
- Guide students to become independent and self-reflective learners for better critics of their own work.
- Stimulate reflection, interaction, and dialogue about learning improvement.
- Are constructive, so that students feel encouraged and motivate to improve.

Have consequences, so that it engages students by requiring them to attend to the feedback as a part of the assessment.

Are efficient, so that staff can manage it effectively.

Guidance as a feedback devicecan speeds up the learning process and provides feedback as well. Feedback exerts a strong influence on learning and achievement. However, the type of feedback provided and the way instructors deliver it results in varying degrees of effectiveness. Teacher feedback is a powerful pedagogical tool for promoting interaction in educational guidance between teachers and students. Guidance as a feedback device generally has a positive effect on classroom interventions, as it focuses on ways to improve performance.

3.1.3: ASSESSMENT OF PORTFOLIOS

Portfolio assessment is a term with many meanings, and it is a process that can serve a variety of purposes. A portfolio is a collection of student work that can exhibit a student's

efforts, progress, and achievements in various areas of the curriculum. A portfolio assessment can be an examination of student-selected samples of work experiences and documents related to outcomes being assessed, and it can address and support progress toward achieving academic goals, including student efficacy. Portfolio assessments have been used for large-scale assessment and accountability purposes (e.g., the Vermont and Kentucky statewide assessment systems), for purposes of school-to-work transitions, and for purposes of certification. For example, portfolio assessments are used as part of the National Board for Professional Teaching Standards assessment of expert teachers.

The Development of Portfolio Assessment

Portfolio assessments grew in popularity in the United States in the 1990s as part of widespread interest in alternative assessment. Because of high-stakes accountability, the 1980s saw an increase in norm-referenced, multiple-choice tests designed to measure academic achievement. By the end of the decade, however, there were increased criticisms over the reliance on these tests, which opponents believed assessed only a very limited range of knowledge and encouraged a "drill and kill" multiple-choice curriculum. Advocates of alternative assessment argued that teachers and schools modeled their curriculum to match the limited norm-referenced tests to try to assure that their students did well, "teaching to the test" rather than teaching content relevant to the subject matter. Therefore, assessments needed to be worth teaching to model the types of significant teaching and learning activities that were worthwhile educational experiences and would prepare students for future, real-world success.

Involving a wide variety of learning products and artifacts, such assessments would also enable teachers and researchers to examine the wide array of complex thinking and problem-solving skills required for subject-matter accomplishment. More likely than traditional assessments to be multidimensional, these assessments also could reveal various aspects of the learning process, including the development of cognitive skills, strategies, and decision-making processes. By providing feedback to schools and districts about the strengths and weaknesses of their performance, and influencing what and how teachers teach, it was thought portfolio assessment could support the goals of school reform. By engaging students more deeply in the instructional and assessment process, furthermore, portfolios could also benefit student learning.

Types of Portfolios

While portfolios have broad potential and can be useful for the assessments of student's performance for a variety of purposes in core curriculum areas, the contents and criteria used

to assess portfolios must be designed to serve those purposes. For example, *showcase portfolios* exhibit the best of student performance, while *working portfolios* may contain drafts that students and teachers use to reflect on the process. *Progress portfolios* contain multiple examples of the same type of work done over time and are used to assess progress. If cognitive processes are intended for assessment, con, tent, and rubrics must be designed to capture those processes.

Portfolio assessments can provide both formative and summative opportunities for monitoring progress toward reaching identified outcomes. By setting criteria for content and outcomes, portfolios can communicate concrete information about what is expected of students in terms of the content and quality of performance in specific curriculum areas, while also providing a way of assessing their progress along the way. Depending on content and criteria, portfolios can provide teachers and researchers with information relevant to the cognitive processes that students use to achieve academic outcomes.

Uses of Portfolios

Much of the literature on portfolio assessment has focused on portfolios as a way to integrate assessment and instruction and to promote meaningful classroom learning. Many advocates of this function believe that a successful portfolio assessment program requires the ongoing involvement of students in the creation and assessment process. Portfolio design should provide students with opportunities to become more reflective about their work while demonstrating their abilities to learn and achieve in academics.

For example, some feel it is important for teachers and students to work together to prioritize the criteria that will be used as a basis for assessing and evaluating student progress. During the instructional process, students and teachers work together to identify significant pieces of work and the processes required for the portfolio. As students develop their portfolios, they can receive feedback from peers and teachers about their work. Because of the greater amount of time required for portfolio projects, there is a greater opportunity for introspection and collaborative reflection. This allows students to reflect and report on their thinking processes as they monitor their comprehension and observe their emerging understanding of subjects and skills. The portfolio process is dynamic and is affected by the interaction between students and teachers.

Portfolio assessments can also serve summative assessment purposes in the classroom, serving as the basis for letter grades. Student conferences at key points during the year can also be part of the summative process. Such conferences involve the student and teacher (and perhaps the parent) in a joint review of the completion of the portfolio components, in

querying the cognitive processes related to artifact selection, and in dealing with other relevant issues, such as students' perceptions of individual progress in reaching academic outcomes.

The use of portfolios for large-scale assessment and accountability purposes poses vexing measurement challenges. Portfolios typically require complex production and writing, tasks that can be costly to score and for which reliability problems have occurred. Generalizability and comparability can also be an issue in portfolio assessment, as portfolio tasks are unique and can vary in topic and difficulty from one classroom to the next. For example, Maryl Gearhart and Joan Herman have raised the question of comparability of scores because of differences in the help students may receive from their teachers, parents, and peers within and across classrooms. To the extent student choice is involved, contents may even be different from one student to the next. Conditions of, and opportunities for, performance thus vary from one student to another.

These measurement issues take portfolio assessment outside of the domain of conventional psychometrics. The qualities of the most useful portfolios for instructional purposes–deeply embedded in instruction, involving student choice, and unique to each classroom and student–seem to contradict the requirements of sound psychometrics. However, this does not mean that psychometric methodology should be ignored, but rather that new ways should be created to further develop measurement theory to address reliability, validity, and generalizability.

3.1.4: CONCEPT OF REFLECTIVE JOURNAL

In simple words, the Reflective Journal is a place to write down your daily reflection entries. It can be something good or bad that has happened to you that you can self-reflect on and learn from past experiences. Reflective journals are personal records of students' learning experiences. Students typically are asked by their instructors to record learning-related incidents, sometimes during the learning process but more often just after they occur.

A reflective journal can help you to identify important learning events that had happened in your life. The events include your relationships, careers, and personal life. By writing a reflective diary, you can find the source of your inspiration that defines you today. A reflective journal also provides a better understanding of your thought process. They are most often used to record detailed descriptions of certain aspects of an event or thought. For example, who was there, what was the purpose of the event, what do you think about it, how does it make you feel, etc.So, it is a space where a learner can record and reflect upon their observations and responses to situations, which can then be used to explore and analyze ways of thinking. Journals, although generally written, can also contain images, drawings, and other types of reference materials.

Purpose of Reflective journals

The purposes are-

1. To understand the things that has happened.
2. To reflect on why it happened this way.
3. To align future actions with your values and lessons learned from your past experiences.
4. To share and get your thoughts and ideas out of your head.
5. Record the development of learners' ideas and insights and/or those of a group in a given context and can include concepts, ideas, and main points from experience and theory;
6. Reflect upon the subject content and personal experiences as a means to increase learners' understanding;
7. Analyzethe learning process for self-development.

What are the ways of reflecting effectively?

According to Schön, there are two types of reflection, one during and one after an activity or event. They are-

1. Reflection In Action- When you are thinking about or reflecting while you are in an activity, you are using reflection in action. Some reflections include:

- Experiencing
- Thinking on your feet
- Thinking about what to do next
- Acting straight away

2. Reflection on-Action- You can do reflect-on-action once the activity has finished based on what you can remember about it. Step back into the experience, explore your memory, and retrieve what you can recall. Reflect and understand what has happened and draw lessons from the experience.

- Thinking about something that has happened
- Thinking what you would do differently next time
- Taking your time

How to Write Reflectively?

Use the three "W"s to write reflectively. The three "W"s are *What, So What*, and *What next*.

1. What (Description)- Recall an event and write it down descriptively.
   - What happened?
   - Who was involved?
2. So what? (Interpretation)- Take a few minutes to reflect on and interpret the event.
   - What is the most important/interesting/relevant/useful aspect of the event, idea, or situation?
   - How can it be explained?
   - How is it similar to/different from others?
3. What's next? (Outcome)- Conclude what you can learn from the event and how you can apply it next time.
   - What have I learned?
   - How can it be applied in the future

What is the difference between journal and reflective writing?

Reflective writing is an opportunity to sort through learning and experience. On the other hand, Journals provide space for examining your readings and thoughts in great detail, following through on your observations in whichever way strikes you as appropriate.

Usage of Reflective journals

Reflective journals are used to explore situations from a personal perspective, but generally within the context of learning from students' own experiences. They are used to reflect on, in, and for action. Common questions arising from 'reflection' are:

- What happened? (Reflecting in actions)
- Why did it happen? (Reflecting on actions)
- What can be learned from this for future actions? (Reflecting for actions).

Merits of Reflective Journal

- Reflective writing can enable students to demonstrate complex learning outcomes including critical thinking;
- Students can develop good working habits and routines through regular engagement;
- Students can demonstrate analysis, creativity, and originality;
- Reflection in and of itself can be a powerful learning process;
- As this is highly personal, the likelihood of plagiarism is reduced;
- Regular engagement from staff allows them to gain a good idea of the student's progress and where additional support is required;
- Encourages autonomous learning and increased learner autonomy.

Demerits of Reflective Journal

- Students may not fully understand what is required of them in reflective writing reflection
- It is common to dislike forced reflection (staff often feel the same) and some may not allocate much consideration to it.
- Tendency to write what they think you want to read; i.e. fiction.
- Potential difficulties in verifying content and timing of when reflective notes were actually written (all in one go or throughout the expected time span);
- Difficult to mark fairly. Specific criteria need to be established and communicated.

CONCLUSION

Feedback helps learners identify areas where they need to improve and develop a plan to achieve those goals. This creates a cycle of continuous improvement, where learners strive to enhance their skills and knowledge. It provides learners with guidance on how to improve their performance and reach their goals. Moreover, it encourages communication between learners and their instructors or peers, which facilitates the exchange of ideas and perspectives.

LET US SUM UP

Feedback plays a critical role in the learning process. It provides learners with the information needed to improve their performance, develop metacognitive skills, and achieve their goals. Feedback devices are tools that provide feedback to the learner through auditory, visual, or physical cues. For example, there are devices that give feedback on the depth and rate of chest compressions. These devices are most useful when tailored to how a learner best receives feedback.

Guidance as a feedback devicecan speed up the learning process and provide feedback as well. Feedback exerts a strong influence on learning and achievement. However, the type of feedback provided and the way instructors deliver it results in varying degrees of effectiveness.

A portfolio assessment is a systematic and organized collection of evidence used by the teacher and student to monitor the growth of the student's knowledge, skills, and attitudes in a specific subject area. The portfolio is a collection of students' work representing a selection of performances.

Reflective journals are personal records of students' learning experiences. Students typically are asked by their instructors to record learning-related incidents, sometimes during the learning process but more often just after them occur.A reflective journal can help you to identify important learning events that had happened in your life. The events include your relationships, careers, and personal life.

ASSIGNMENT

1. Define Feedback Devices. Illustrate its different types.
2. What is meant by Portfolio? What are its uses?
3. Elucidate the concept of a Reflective Journal.What are its merits and demerits?
4. Discuss the key differences between Assessment and Evaluation.

SUGGESTED READINGS

Gielen, S, Peeters, E., Dochy, F. Onghena, P. &Struyven, K. (2010) Improving the effectiveness of peer feedback for learning. Learning Instruction.

Sackstein, S., (2017). *Peer feedback in the classroom: Empowering students to be the experts*. Alexandria, Virginia: ASCD.

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UQx: LEARNx Deep Learning through Transformative Pedagogy (2017). The University of Queensland, Australia (CC BY NC)

The SAGE Handbook of Curriculum, Pedagogy, and Assessment, Dominic Wyse, Louise Hayward & Jessica Pandya, SAGE Publications Ltd

Chappuis, J. (2012, September). Leadership for Learning: How am I doing? Educational Leadership, 70(1), 36-41.

Block - 3
Assessment in Pedagogy of Education

UNIT – II
Advanced Assessment in Pedagogy of Education

CONTENT STRUCTURE:

INTRODUCTION

Advanced assessment refers to a comprehensive and in-depth evaluation process that is designed to gather information about an individual's cognitive, emotional, social, and behavioral functioning. Advanced assessment techniques are typically used by mental health professionals, educational psychologists, and other professionals to identify the strengths and weaknesses of an individual, diagnose psychological disorders or learning disabilities, and develop treatment plans.

Advanced assessment typically involves the use of standardized tests, interviews, observations, and other assessment tools to gather information about the individual's abilities, personality, and behavior. The results of the assessment are used to guide treatment planning

and to make recommendations for accommodations or interventions that can help the individual improve their functioning.

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LEARNING OBJECTIVES

After going through this Unit, you will be able to —

1. Apprehend the concept, types, and importance of Rubrics in assessment;
2. Conceptualize the procedure to develop rubrics for assessment;
3. Define Competency-based evaluation and recognize its benefits;
4. Develop an overview of how to assess teacher-prepared ICT resources.

3.2.1: RUBRICS: MEANING AND CONCEPT

A rubric is "a scoring guide used to evaluate the quality of students' constructed responses".Put simply; it is a set of criteria for grading assignments.

Rubrics usually contain evaluative criteria, quality definitions for those criteria at particular levels of achievement, and a scoring strategy. They are often presented in table format and can be used by teachers when marking, and by students when planning their work.

In other words, a rubric is typically an evaluation tool or set of guidelines used to promote the consistent application of learning expectations, learning objectives, or learning standards in the classroom, or to measure their attainment against a consistent set of criteria.

Rubrics are used for both **formative assessment** (in-process feedback to be used for improvement) and **summative assessment** (evaluation of student learning after an assignment or project). Essentially, a rubric is a tool for communication between instructor and

student.Rubrics can be excellent tools to use when assessing students' work for several reasons. You might consider developing and using rubrics if:

- You find yourself re-writing the same comments on several different students' assignments.
- Your marking load is high, and writing out comments takes up a lot of your time.
- Students repeatedly question you about the assignment requirements, even after you've handed back the marked assignment.
- You want to address the specific components of your marking scheme for student and instructor use both before and following the assignment submission.
- You find yourself wondering if you are grading or commenting equitably at the beginning, middle, and end of a grading session.
- You have a team of graders and wish to ensure validity and inter-rater reliability.

Types of Rubrics

Two types of rubrics are Holistic and Analytical. Holistic Rubrics group several assessment criteria and classify them together under achievement levels whereas analytics rubrics separate different assessment criteria and address them comprehensively.It is a great tool for teachers because it is a simple way to set up grading criteria for assignments. This tool is also useful for both teachers and students. A rubric defines in writing what is expected of students, to get a particular grade on an assignment.

1. **Holistic rubrics**

Holistic rubrics group several different assessment criteria and classify them together under grade headings or achievement levels.

2. **Analytic rubrics**

Analytic rubrics separate different assessment criteria and address them comprehensively. In a horizontal assessment rubric, the top axis includes values that can be expressed either numerically or by a letter grade or a scale from Exceptional to Poor. The side axis includes the assessment criteria for each component. Analytic rubrics can also permit different weightings for different components.

How to make a rubric

You can enhance students' learning experience by involving them in the rubric development process. Either as a class or in small groups, students decide upon criteria for grading the

assignment. It would be helpful to provide students with samples of exemplary work so they could identify the criteria with greater ease. In such an activity, the instructor functions as a facilitator, guiding the students toward the final goal of a rubric that can be used on their assignment. This activity not only results in a greater learning experience but also enables students to feel a greater sense of ownership and inclusion in the decision-making process.

1. Decide what criteria or essential elements must be present in the student's work to ensure that it is high in quality. At this stage, you might even consider selecting samples of exemplary student work that can be shown to students when setting assignments.
2. Decide how many levels of achievement you will include on the rubric and how they will relate to your institution's definition of grades as well as your grading scheme.
3. For each criterion, component, or essential element of quality, describe in detail what the performance at each achievement level looks like.
4. Leave space for additional, tailored comments or overall impressions and a final grade.

3.2.2: FIELD ENGAGEMENT USING RUBRICS

A rubric is an assessment tool that indicates achievement criteria across all the components of any kind of student work, from retain to oral to visual.

Field engagement using rubrics involves creating a set of criteria or standards that can be used to assess and evaluate the quality of engagement in a particular field. Rubrics can be used to evaluate fieldwork, research projects, community engagement initiatives, and other activities that involve interactions with stakeholders in a particular field.

The use of rubrics in field engagement provides several benefits. First, it helps to establish clear expectations for what constitutes quality engagement in a particular field. This can be especially important when working with diverse stakeholders who may have different expectations or priorities. Rubrics can help to ensure that everyone is on the same page and working towards the same goals.

Second, rubrics provide a structured and consistent way to evaluate engagement activities. This can help to ensure that all activities are evaluated fairly and consistently and that the same standards are applied to all projects.

To develop a rubric for field engagement, it is important to start by identifying the key components of engagement in the particular field. This might include factors such as communication skills, cultural competency, project management skills, stakeholder involvement, and community impact.

Once the key components have been identified, the next step is to develop specific criteria or standards for each component. For example, under the component of communication skills, criteria might include factors such as clarity, responsiveness, and respect for diverse perspectives.

Once the rubric has been developed, it can be used to evaluate engagement activities in the field. This might involve assigning scores or ratings to each criterion or simply using the rubric as a guide for evaluating the overall quality of the engagement activity.

Overall, using rubrics in field engagement can help to ensure that engagement activities are of high quality and that stakeholders are engaged in a meaningful and productive way.

Rubrics can be an excellent tool to use when assessing students' work for several reasons as given below:

- No rewriting option comments on several different students' assignment
- No wasting Of. Time on writing up comments.
- No repeated questions about the assignment requirement event after handing back the marked assignment.
- Addressing the specific components of the marking scheme for students and instructors, before the assignment submission.
- Grading equally at the beginning, middle, and end of the grading season.

How to use rubrics effectively

❖ **Develop a different rubric for each assignment**

Although this takes time in the beginning, you'll find that rubrics can be changed slightly or reused later. If you are seeking pre-existing rubrics, consider Rhodes (2009) for the AAC&U VALUE rubrics, cited below, or Facione and Facione (1994). Whether you develop your own or use an existing rubric, practice with any other graders in your course to achieve inter-rater reliability.

❖ **Be transparent**

Give students a copy of the rubric when you assign the performance task. These are not meant to be surprise criteria. Hand the rubric back with the assignment.

❖ **Integrate rubrics into assignments**

Require students to attach the rubric to the assignment when they hand it in. Some instructors ask students to self-assess or give peer feedback using the rubric before handing in the work.

❖ **Leverage rubrics to manage your time**

When you mark the assignment, circle or highlight the achieved level of performance for each criterion on the rubric. This is where you will save a great deal of time, as no comments are required.Include any additional specific or overall comments that do not fit within the rubric's criteria.

❖ **Be prepared to revise your rubrics**

Decide upon a final grade for the assignment based on the rubric. If you find, as some do, that the presented work meets its criteria on the rubric but seems to have exceeded or not met the overall qualities you're seeking, revise the rubric accordingly for the next time you teach the course. If the work achieves highly in some areas of the rubric but not in others, decide in advance how the assignment grade is derived. Some use a formula, or multiplier, to give different weightings to various components; be explicit about this right on the rubric.

❖ **Consider developing online rubrics**

If an assignment is being submitted to an electronic drop box you may be able to develop and use an online rubric. The scores from these rubrics are automatically entered in the online grade book in the course management system.

3.2.3: COMPETENCY-BASED EVALUATION

Competencies are **combinations of attitudes, skills, and knowledge that students develop and apply for successful learning, living, and working.**Competency-based evaluationis an approach to evaluating an individual's knowledge, skills, and abilities based on specific competencies or job requirements. It focuses on measuring an individual's ability to perform a task or function and their potential for success in a particular role.

Competency-based evaluation typically involves identifying the key competencies required for a particular job or role and designing assessments or evaluations that measure an individual's proficiency in these areas. This can involve a variety of methods, such as performance-based assessments, simulations, and observations of job-related tasks.

The benefits of using competency-based assessments include increased objectivity, reliability, and validity in evaluating an individual's potential for success in a particular role. Competency-based assessments can also help individuals identify areas for development and improvement, which can be used to guide training and professional development plans.

So, Competency-based Education (CBE) is an outcome based approach to education to ensure proficiency in learning by students through the demonstration of the knowledge, skills, values, and attitudes required for dealing with real-life situations at the age and grade-appropriatelevels.

General features of competency-based evaluation:

- **Criterion based –** on standards of practice.
- **Evidence-based** – accumulation of informal verbal/written assessment/feedback, assignments, logs, critique, and self-assessments.
- **Participatory based** – the learner is involved in the process and consults with the assessor.

A competency-based evaluation may include a range of assessment tools and activities, such as feedback, competency sampling, observation, 360 review, presentations, and papers. No matter what method or tool is utilized, four paramount features must be incorporated. These are validity, reliability, fairness, and flexibility.

Feedback	• Informal • Formal • Formative • Summative
Competency Sampling	• Sample of work for assessment • Follows learning period/schedule • Reflects competency in the practice • Permits the inclusion of patient feedback (as inpatient management assessment) • identify which units will be utilized in the assessment (upper extremity, chest, etc)
O, observation	• Focused on behavioral markers. What are you looking for? How will you know when you see it? • Conduct the observation personally and /or utilize the observations of colleagues that have had training. Reliability of rating from colleague to colleague must be consistent and acceptable.
360° Review	• Multiple informants • Evaluation from the perspectives of the clinical educator, mentor, team members, other students, administrators, and the learner themselves. • Best method as a survey format via anonymous respondents.
Presentations & Papers	• Some student benefit from the opportunity to present at a lunch & learn, rounds, etc. • Encourage students to include their own experiences from the viewpoint of a clinical student. • Ensure relevancy • Topics may be specific to pathology, adverse events, or case reviews.

Benefits of Competency-Based Evaluation

1. Improved clarity & transparency

Greater clarity allows teachers and families to identify areas of strength and areas where students may need additional support. In all cases, these assessments provide teachers with detailed knowledge about student progress that can be used to build individualized goals and educational plans.

In addition to evaluating proficiency in these domains, teachers should regularly share comprehensive feedback on individual student accomplishments and struggles. For example, UCDS teachers provide narrative commentary to families where they focus on how a student engages within each domain, as well as notable accomplishments and struggles.

Focusing on comprehensive feedback brings clarity to the learner, and clarity to the family about what's happening in the classroom. Letter grades don't show the full picture, and a competency-based model is better equipped to provide students, families, and future schools with clear information about each student's social and academic progress.

2. More seamless personalization of learning

Through Competency-Based Learning, educators have a better chance to provide a deeper view into each student's learning attitudes and strategies and can provide resources that best support individual needs. This type of information is key to understanding the unique modes, strategies, and coaching to which each student responds best. This is the foundation of personalized learning.

3. It helps shift towards a culture of assessment

To successfully adopt competency-based strategies, teachers and administrators must first re-evaluate assessment. While traditional forms of assessment (i.e., exams and quizzes) are valuable when placing students on a general scale of progress, they don't show the whole picture. Making changes to assessment can be daunting for some educators, especially those who have been using traditional assessment practices throughout their careers. It can also be a shift for parents to evaluate their student's performance without a grade.

Teachers must pursue resources and professional development that introduce different methods of assessing student progress, and why they hold value. As every teacher knows, learning never stops – and by staying on top of current trends, the curriculum can be adapted to meet every student's needs.

4. Students better understand their learning profile

Through comprehensive, competency-based assessment methods, teachers can help students to reach college and career readiness with greater self-knowledge about their learning

approaches and needs. Working from a continuum of skills ensures that every student is being challenged in a way that is appropriate to what they want and needs to learn and that educators can give individualized support as needed to help them move forward.

Removing the stress of being placed on a tiered grading scale shifts the focus back to learning while building the confidence to make mistakes. Students take ownership of their learning. They feel empowered when mastering a skill and learn to identify what's next.

Pre-requisites of Competency-based Evaluation

1. Diagnostic activity - pre-assessment

The competency level assessment is incomplete without the pre-assessment.

This helps to assess the prior learning of any learner. The learner gets assessed in terms of competencies, which allows for personalizing the teaching approach for individual profiles learner. While pre-assessing, any trainer applying for training should have his potential competency profile created. This is a very important step and cannot be evaded.

2. Instructional Design

The competency-based assessment in education is completely different from the traditional models. Making it unique is its instructional design.

An effective CBE program should have an instructional design. It starts with identifying the learning outcomes for a given course even before commencing. The next stage is to develop assessment activities for those outcomes.

3. Assessment activities

Most competency-based assessment methods are effective. With them comes an end to the question of how to assess skills and competencies.

While automated grading of quizzes best suits low-level cognitive domain concepts (Bloom's Taxonomy levels to remember and understand), for a higher-level cognitive skill, direct assessment types (analysis, synthesis, and evaluation) could be more appropriate. This could include descriptive written essays, observational grading, and case study analyses. These assessments are faculty evaluated.

Before the assessment happens, the students should be made to feel confident that they would succeed with the preparation given to them.

4. Outcomes, a mandate in CBE's Assessment Learning Cycle

Defining the outcomes tops the learning cycle.Learning gets purposeful when the learners understand what their goals are. Hence the first step in designing the assessment learning cycle is defining the outcomes.Outcomes are similar to the foundation one lays down to erect his building. It means the knowledge, skills, abilities, the level of learning required.

5. Competency-based assessment tools

The competency-based assessment tools are becoming the high-performing choice to manage performance development.The competency tools can extract the successful performance of the learner through proper demonstration, and clear and tangible actions.

Some of the competency-based assessment tools could be interviews, case studies, assessment centers, questionnaires, tests, questionnaires, etc.

Projects and assignments are the two well-known competency-based assessments that well suit engineering education's practical scenario. It goes on to test the ability of a professional's output. Fastré et al in one of their professional articles state that the competence-based assessment reflects all the industry-standard criteria related to work, and gives information about the learner's strengths, and weaknesses. In short, it is used to measure the competency level of all industry experts.

6. Choosing the kind of assessment - Authentic assessment or evidence-based assessment?

"Authentic assessment" also means evidence-based assessment.

The very idea that CBE prepares its students for the workforce, stresses the fact that the assessments planned should be in line with real-life experiences. Choosing the type of assessment is a very crucial element in achieving the learning outcome.

7. Building student-friendly rubrics

The rubric is almost similar to a working guide both for teachers and students, which is usually handed out before the commencement of assessments to let the students know the criteria on what their work will be judged.

In competency-based learning, the rubric helps to evaluate student's performance based on the total range of criteria rather than a numerical score.

The essentials of competency-based learning rubrics

- Rubrics should have articulated competencies and learning outcomes as their base
- They are intended to give clarity to students about what and why they're learning
- A well-written rubric should essentially be a tool for teachers to understand the quality performance of the student work collaboratively
- Rubrics should ultimately measure performance, reflect on learning, and plan the next steps

Since competency-based learning is not time-bound, it lets learners revisit the learning activities and get reassessed, and be supported by a routine metacognitive reflection of learning and formative feedback.The best-fitting rubric for CBE could be a single-point rubric, which encourages an ongoing conversation between the student and the faculty about learning

rather than merely delivering points. Some of its strong points are it is streamlined, focused, and student-centered.

The single-point rubric can have concerns, criteria, and the exceeding standards of the students within. Under the criteria (middle column), are the shortlisted learning targets or outcomes.

8. Role of the feedback

Feedback is a pivotal component of the assessment strategy. It helps faculty to guide their students in the learning path. Competency-based training and assessment are two essential criteria the faculty are trained at.

By giving instant feedback on time, there are chances for reduced risks of inequalities. In addition, students get to plan the next step of their learning path.

9. Measuring success

The competency-based approach in education is highlighted by its success criteria, which is the best practice of any form of education.

It is even more crucial concerning a CBE model of instruction. Students are informed that they succeed only upon the demonstration of mastery, thus making learning explicit.

10. Results and further analysis

This step is where the faculty's professional judgment comes into focus. With technology, this happens in the form of learning analytics. The competency-based approach in education is the culmination of quantitative and qualitative student assessment. Results obtained should help to arrive at the areas for student improvement and encouragement.

Competency-Based Assessments: The Benefits

1. Improved clarity & transparency

Greater clarity allows teachers and families to identify areas of strength and areas where students may need additional support. In all cases, these assessments provide teachers with detailed knowledge about student progress that can be used to build individualized goals and educational plans.

In addition to evaluating proficiency in these domains, teachers should regularly share comprehensive feedback on individual student accomplishments and struggles. For example, UCDS teachers provide narrative commentary to families where they focus on how a student engages within each domain, as well as notable accomplishments and struggles.Focusing on comprehensive feedback brings clarity to the learner, and clarity to the family about what's happening in the classroom. Letter grades don't show the full picture), and a competency-

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Teachers must pursue resources and professional development that introduce different methods of assessing student progress, and why they hold value. As every teacher knows, learning never stops – and by staying on top of current trends, the curriculum can be adapted to meet every student's needs.

4. Students better understand their learning profile

Through comprehensive, competency-based assessment methods, teachers can help students to reach college and career readiness with greater self-knowledge about their learning approaches and needs. Working from a continuum of skills ensures that every student is being challenged in a way that is appropriate to what they want and needs to learn and that educators can give individualized support as needed to help them move forward.

Removing the stress of being placed on a tiered grading scale shifts the focus back to learning while building the confidence to make mistakes. Students take ownership of their learning. They feel empowered when mastering a skill and learn to identify what's next.

For teachers, competency-based assessment brings depth and value to the curriculum. With the focus shifted away from letters and percentages, students become more involved in long-term progress and are more apt to become engaged and take risks while learning.

Ranking students based on undefined competencies and then using that rank to determine their prospects and contributions is a practice best left to past eras. A competency-based assessment provides more detailed information that promotes better-targeted teaching and learning for all parties involved.

3.2.4: ASSESSMENT OF TEACHER-PREPARED ICT RESOURCES

ICT resources mean generally all hardware devices (laptops, workstations, mobile phones, periphery devices, interactive whiteboards, etc.), networking services, as well as all software resources (applications, databases) locally or remotely accessible made available, and administrated by the ES.

Information and Communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into the curriculum. Schools use a diverse set of ICT tools **to communicate, create, disseminate, store, and manage information.**

ICT enables the use of innovative educational resources and the renewal of learning methods, establishing a more active collaboration of students and the simultaneous acquisition of technological knowledge.

ICT resources offer the possibility of acquiring knowledge, attitudes, and procedures during the teaching process. It also offers various forms of work with content and activities. An integrated design of learning resources is an important part of the instructional process that help to achieve the expected learning outcomes. There is a growing body of evidence that says the use of ICT in the classroom can enhance learning. Thus, it is essential that the contemporary teacher has good ICT skills and can integrate ICT into the teaching and learning processes.

Assessment of teachers' prepared ICT resources

ICT can act as a tool to help teachers and create a learner-centric environment a teacher needs to be trained to be able to use ICT resources being used by the teacher and its result is very important.Assessment of teacher ICT resources is as follows:

- Learn about the integration of ICT and developing ICT capability.
- Planning and identifying opportunities for assessments.
- Determining the progressions.
- Unlock barriers to access ICT capabilities.
- Establishing relevant and meaningful learning environments.
- Gathering strong empirical evidence of attainment.

Assessing teachers' prepared ICT resources can involve evaluating several aspects, including the quality, relevance, and effectiveness of the resources. Here are some key considerations for assessing teachers' prepared ICT resources:

Quality: The quality of ICT resources is essential in determining their effectiveness in teaching. Quality can be assessed by evaluating the accuracy of the information, clarity of presentation, and appropriateness of the resources for the intended audience.

Relevance: The relevance of the resources to the curriculum and the learning objectives is critical. Teachers should ensure that the resources they prepare are aligned with the curriculum and are useful for students to achieve the learning objectives.

Effectiveness: The effectiveness of ICT resources can be evaluated by determining whether they improve learning outcomes, engage students, and enhance the overall learning experience. Teachers can assess effectiveness through feedback from students and the results of assessments.

Accessibility: The accessibility of ICT resources is important, particularly for students with disabilities. Teachers should ensure that their resources are accessible to all students and comply with accessibility guidelines.

Usability: The usability of ICT resources refers to how easy they are to use and navigate. Teachers should ensure that their resources are user-friendly and intuitive to use, especially for students who may not be familiar with the technology.Overall, assessing teachers' prepared ICT resources involves evaluating several aspects, including quality, relevance, effectiveness, accessibility, and usability. By evaluating these aspects, teachers can ensure that their ICT resources are effective in enhancing student learning and achieving learning objectives.

CONCLUSION

Assessment is the act of determining something's current status/condition. Assessment is a phase in the assessment process. Assessment is an essential component of the teaching-learning process. These assist you in determining how far you can transact education and support children's learning. The use of ICT in the teaching-learning and assessment processes is not an isolated activity, but it is much appreciated when ICT becomes an integrated component of the process. Assessment of the ICT resources being used by teachers and its result is very important.

For teachers, competency-based assessment brings depth and value to the curriculum. With the focus shifted away from letters and percentages, students become more involved in long-term progress and are more apt to become engaged and take risks while learning.CBE's pathway leads to success.

The first way is using the formative assessment with lots of activities that help students to demonstrate their mastery level, irrespective of the time/place/pace of learning. On

achieving this with confidence, they then continue with the summative assessment.By taking up both the formative and summative assessments, the student becomes a master. Committing mistakes is accepted here as students are given pertinent feedback, continuously.

Ranking students based on undefined competencies and then using that rank to determine their prospects and contributions is a practice best left to past eras. The competency-based assessment provides more detailed information that promotes better-targeted teaching and learning for all parties involved.

LET US SUM UP

Rubrics usually contain evaluative criteria, quality definitions for those criteria at particular levels of achievement, and a scoring strategy. They are often presented in table format and can be used by teachers when marking, and by students when planning their work. It is an assessment tool that indicates achievement criteria across all the components of any kind of student work, from written to oral to visual. It can be used for marking assignments, class participation, or overall grades. There are two types of rubrics: holistic and analytical.

Competency-based assessment is the process of collecting evidence and establishing conclusions on the character and scope of the learner's progress toward professional standards. Competence goes beyond mere mastery of information but is an expectation to skillfully organize factual knowledge within the framework comprised of communications skills, clinical reasoning, professional ethics, social engagement, interpersonal conduct, and cross-cultural awareness.

ICT can act as a tool to help teachers and create a learner-centric environment a teacher needs to be trained to be able to use ICT resources being used by the teacher and its result is very important.

ASSIGNMENT

1. Define Rubrics. What are its different types?
2. Why Rubric is considered an advanced assessment in learning? How will you develop it?
3. Elucidate the idea behind Competency-based evaluation.
4. What is the procedure to assess teacher-prepared ICT resources?

SUGGESTED READINGS

Gielen, S, Peeters, E., Dochy, F. Onghena, P. &Struyven, K. (2010) Improving the effectiveness of peer feedback for learning. Learning Instruction.

Sackstein, S., (2017). *Peer feedback in the classroom: Empowering students to be the experts*. Alexandria, Virginia: ASCD.

Feedback Guidance by Heather Collis & Mano Sivantharajah

UQx: LEARNx Deep Learning through Transformative Pedagogy (2017). The University of Queensland, Australia (CC BY NC)

The SAGE Handbook of Curriculum, Pedagogy, and Assessment, Dominic Wyse, Louise Hayward & Jessica Pandya, SAGE Publications Ltd

Chappuis, J. (2012, September). Leadership for Learning: How am I doing? Educational Leadership, 70(1), 36-41.

Block-4
Assessment in Andragogy of Education

Unit-I
Assessment in Andragogy of Education

Content Structure

4.1.1: INTRODUCTION

In the educational and teaching learning process in the school set up classroom communication is a significant component. An essential component of successful classroom instruction is the number and quality of teacher-student interaction. The term "interaction" suggests an action-reaction or a mutual or reciprocal influence, which may be between persons, such as students and students or students and teachers in a classroom, or involving materials, people, or groups may be used as assessing Andragogy both in terms of Verbal Communication and Non Verbal Communication.

Usually, one can deduce an interaction from the way people behave in the setting they are studying. The major modes of this behaviour, which may be verbal or nonverbal.

The non-verbal dimensional characteristics of teaching can be used in conjunction with the Flanders system's categories, time intervals, and ground rules in the Charles Galloway, approach of interaction analysis. Proximity, stance, touch, eye contact, and hand motion and facial emotions are examples of non-verbal dimensional qualities. Nonverbal cues can also be strategically used to create an impression, achieve a goal, or express an attitude.

4.1.2: OBJECTIVES

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

1. Understand the concept of assessment in Andragogy of Education
2. Study the significance of Andragogy of Education.
3. Analyze Flanders's Interaction analysis for assessing andragogy.
5. Conceptualize Galloway's model forassessing Andragogy.

4.1.3: FLANDERS' INTERACTION ANALYSIS

Interaction Analysis (IA) is a method of analytical observation that analyse the actions a teacher takes while delivering a lesson. It is a methodical observation that serves as a beneficial tool for discovering, researching, categorising, and measuring particular factors while a teacher and his or her pupils interact in a learning environment that is intended to be educational.

It employs a system of categories to quantify and codify instructor and student conduct in the classroom. The observational system was developed so that a teacher could be trained to utilise it for behaviour analysis in the classroom, lesson planning, and evaluation in order to improve learning in the classroom.

The verbal behaviour of teachers and students that is closely tied to the social-emotional atmosphere of the classroom is captured by interaction analysis as an observing system. Interaction encoding and decoding procedures the teaching and learning study pattern is called analysis. Using the coding process, a trained analyst decodes the display of encoded data and reconstructs the actual events using the encoded data, which establishes categories of classifying statements and assigns a code symbol to each category, even though he may not have been present when the data were collected. As a method for collecting the qualitative and quantitative aspects of teachers' verbal behaviour in the classroom, interaction analysis is used.

The Basic Theoretical Assumptions of Interaction Analysis:

The following are the numerous theoretical presumptions that underlie every concept in interaction analysis:

- In a typical classroom setting, verbal communication predominates.
- Although non-verbal gestures may be used in place of spoken language in the classroom, verbal behaviour may still be observed more reliably than the majority of nonverbal communication and can ostensibly serve as a representative sample of classroom behaviour as a whole.
- We can typically believe that a teacher's nonverbal cues, as well as his overall behaviour, are compatible with his vocal comments.
- The impact of the teacher on the students is significant. This type of teaching behaviour is extremely detrimental to student behaviour.
- The relationship between the teacher and students is essential to the learning process and must be taken into consideration when developing methods.
- It is well known that social atmosphere influences both output and the communication of interpersonal relationships. It has been demonstrated that a democratic environment tends to retain work at a reasonably high level even when the teacher is not there.
- Children frequently express their greatest affection for democratic teachers and are aware of their enthusiastic acceptance of them.
- The learning process depends greatly on the environment in the classroom.
- By using an observational technique intended to "capture" the natural forms of behaviour, which will also allow the process of measurement with the least amount of disruption to the usual activities of the group of individuals, the teacher's classroom verbal conduct can be observed objectively.
- It is possible to influence a teacher's classroom behaviour through feedback, but further research will be needed to determine how much can change and whether these improvements will last.
- The main vocal statements used by teachers to influence students. Although they do happen, non-verbal influencing acts are not captured by interaction analysis. The claim that the quality of nonverbal actions is comparable to verbal actions, which makes verbal influence the most simple of all influences to analyse, supports the legitimacy of this statement.

Flanders Interaction Analysis Categories (FIAC)

Because verbal behaviour can be observed more reliably than non-verbal behaviour and because it is presumed that verbal behaviour is a representative sample of an individual's overall behaviour, Flanders Interaction Analysis is a system of classroom interaction analysis that only focuses on verbal behaviour. The ten categories of the Flanders Interaction Analysis Categories (FIAC) system of communication are thought to cover all possible communication scenarios. There are 10 categories used, including seven for instructor discourse (Teacher talk), two for student talk (Pupil talk), and one for quiet or (Silence).

Description of Flanders Verbal Interaction Categories:- (FIAC)

Category: FIAC

Sl. No.	Category	Nature	Specifications
1.	Accepts feeling Teacher Talk	Response Indirect Influence	Accepts feeling. Accepts and clarifies an attitude or the feeling tone of a pupil in a nonthreatening manner. Feeling may be either positive or negative. [Predicting and recalling included.]
2.	Praises or encourages Teacher Talk	Response Indirect Influence	Praises or encourages Praises or encourages pupil action or behaviour jokes that releases tension but not at the expense of another individual, nodding head or saying "Um Uhm' or 'Go On'.
3.	Accepts or uses ideas Teacher Talk	Response Indirect Influence	Accepts or uses ideas suggested by a pupil. Clarifying, building or developing ideas suggested by a pupil; [Teacher's help in building pupil's ideas but not teacher's addition in idea formation is deleted].
4.	Asks questions Teacher Talk	Response Indirect Influence	Asks questions:- Asking questions about content/ or procedures based on his/her ideas with intent that a pupil will give answer.
5.	Lecturing Teacher Talk	Initiation Direct Influence	Lecturing: Giving deliberation about facts or opinions about content or procedures; expressing his/ her own ideas, giving his/ her own explanation or citing and authority other than a pupil.

6.	Giving directions Teacher Talk	Initiation Direct Influence	Giving Directions:- Directions, commands or orders to which a pupil is expected to comply.
7.	Criticizing or Justifying Teacher Talk	Initiation Direct Influence	Criticizing for exploring truth.
8.	Response to teacher	Pupil talk	Pupil talk response:- Talk by pupil in response to teacher. Teacher initiates the contact or solicits pupil statements Situation express limited. or structures. freedom Own ideas to is limited.
9.	Initiation.	Pupil talk	Pupil-talk initiation:- talk by pupils which they initiate expressing ideas initiating a own new topic; freedom to develop opinions and a line of thought, like asking thoughtful questions; going beyond the existing structure.
10.	Silence	Silence	Silence or Confusion: Pauses, Short period of confusion in which communication cannot be understood by the observer.

Category 1 to 7 belongs to Teacher Talk out of which 1 to 4 stands for Indirect Influence and 5 to 7 stands for Direct influence. Category 8 and 9 referred to Student Talk. Category 10 stands for Silence.

Ground Rules

Rule 1

When not certain to which two or more categories a statement belongs. choose the category that is numerically farthest from category 5.

Rule 2

If the primary tone of the teacher's behavior has been consistently direct or consistently indirect, do not shift into the opposite classification unless a clear indication of shift is given by the teacher.

Rule 3

The observer must not be concerned with his own biases or with the teacher's intent.

Rule 4

If more than one category occurs during the three second interval, then all categories used in that interval are recorded; therefore, record each change in category. If no change occurs within three seconds, repeat that category number.

Rule 5

If a silence is longer than three seconds, it is recorded as 10.

Rule 6

When the teacher calls a child by his name, the observer ordinarily records.

Rule 7

When the teacher repeats a student's answer and if the answer is correct one, this is recorded as 7.

Rule 8

When the teacher repeats a student's idea and communicates that the idea will be considered or accepted as something to be discussed, a 3 is used.

Rule 9

If a student begins to talk after another student, a 10 is inserted between 9's and 8's to indicate the change of student.

Rule 10

Reactions such as 'All Right', 'Okay' and 'Yes' etc, are recorded as 9.

Rule 11

A teacher's joke which is not made at the expense of children is 2., but if the joke makes fun of a child then it is recorded as 7.

Rule 12

Rhetorical questions are recorded as 5.

Rule 13

If the student gives a specific predictable answers to a narrow question, this is recorded as 8.

Rule 14

An 8 is recorded when several students respond in answer to a narrow question.

Constructing an Interaction Matrix

It is done during observation of a teaching session.

The numbers that an observer writes down are tabulated in a matrix 10 row by 10 column

table. It is in sequence pairs, that is, a separate tabulation is made for each overlapping pair of numbers. An illustration will explain this procedure. Suppose, the observer has written down 6,10,7,5,1,4,8 and 4. As the interaction proceeds, the observer will continue to write down numbers. To tabulate these

Observation is a 10x10 matrix, the first step is to make sure that entire series begin and ends with the same number. The convention is to add a 10 at the beginning and end of the series unless it is already present. Our series now become

1st	2nd	3rd	4th	5th	6th	7th	8th
10,6	6,10	10,7	7,5	5,1	1,4	4,8	4,10
Pair	Pair	Pair	Pair	Pair	Pair	Pair	Pair

These numbers are tabulated in a matrix one pair at a time. The column is indicated by the second number and row id indicated by the first number. The first pair is 10-6,the tally is placed in row ten and column six cell. The second pair is 6-10, this tally is the row six, columns ten cell. The third pair is 10-7, the fourth pair is 7-5, and so on. Each pair overlaps with the next. and the total number of observations, “N” always will be tabulated by ‘n-l tallies in the matrix. In this example, we started a series of ten numbers, and the series produced nine tallies in the matrix

The location of these tallies is shown in the following Table:

Sl. No.	1	2	3	4	5	6	7	8	9	10	Total
1				1							1
2											0
3											0
4								1		1	2
5	1										1
6										1	1
7					1						1
8				1							1
9											0
10						1	1				2
Total	1	0	0	2	1	1	1	1	0	2	9

It is a tabulated matrix and the some of the corresponding rows and columns are equal.

Construction of Interaction Matrix : Encoding

For every three-second period, one of the ten categories is recorded by a trained observer. The sequence of observation that results is shown on a 10x10 matrix, whose rows and columns correspondents the categories. Observations and tabulated on this matrix by pairs

SAMPLE MATRIX (Reproduced from Flanders)

Sl. No.	1	2	3	4	5	6	7	8	9	10	Total
1	-	-	-	1	-	-	-	-	-	-	1
2	1	-	-	6	5	-	-	-	-	-	12
3	-	-	8	17	4	1	-	1	1	-	32
4	-	-	-	14	3	-	1	38	48	-	104
5	-	1	-	26	62	8	5	-	1	2	105
6	-	-	-	5	5	13	-	-	1	3	27
7	-	1	-	2	4	-	3	1	-	2	13
8	-	5	9	15	6	-	3	4	2	-	44
9	-	4	14	17	13	2	1	-	13	2	66
10	-	1	1	1	3	3	-	-	-	8	17
Total	1	12	32	104	105	27	13	44	66	17	421

Interpreting a matrix. This teacher talk is the sum of first 7 categories 1 to 7 i.e. 1+12+32+104+105+27+13=294

Student talk is the sum of categories 8 and 9 i.e. 44+66-100. This means that out of 421 talks, teacher talks are 294 and students talk 110 which comes to 69.8% and 26.2% respectively.

Following conclusions may be draw from above:

1. The teacher is active.
2. The control of interaction rests with the teacher.
3. 50-70% of teacher's statements are indirect i.e., sum of first four categories 1 + 12 + 32 + 104 – 149 out of 294.
4. The flow of communication between the teacher and the student is flexible and shift from one category to another.
5. The class is business like and words rapidly.

Flanders has observed, “It will be the responsibility of the education instructor to help prospective teachers discover what their teaching intention should be and then create training situation in which behavior gradually matches intention with practice. Teaching will remain an art but it will be studied scientifically.”

Use of the Flanders’ Verbal Interaction Category Systems

1) The category system can be used for research in verbal interaction for pre-service and in-service education of teachers.
2) The concept of flexibility of teacher influence can be investigated.
3) The techniques may help in the grouping of students.

Procedures for observation-Encoding Process

1) The observer sits in a class room in the best position for hear and see the participants.
2) At the end of each three - second period he decides which category best represents the communication events just completed.
3) He writes down the category number while simultaneously assessing communication in the next period and continues at a rate of 20 to 25 observations per minute, keeping his tempo as steady as possible.
4) His notes are merely a series of numbers written in a column top to bottom so that the original sequence of events is preserved.
5) Occasionally marginal notes are used to explain the class formation of any unusual circumstances.
6) When there is a major change in the class formation the communication pattern or the subject under discussion, a double line is draw and the time indicated.
7) As soon as the total observation is completed, the observer retries to a nearby room and completes a general description of each separate activity period separated by the double line including the nature of activities, the class formation and the position of the teacher.

Principle of Observation: Flanders has suggested the following principles for classroom observation:

1. No interaction analysis data should be collected unless the person is familiar with the entire process and knows its limitations.
2. Questions to be answered by inspecting the matrix should be developed before the observation taken place.
3. Value judgments about good and bad teaching behavior are to be avoided.

4. Emphasis is to be given to the problem being investigated so that cause and effect relationship can be discovered.
5. A consultation based on two observations or at least two matrices helps to eliminate value judgment or at least control them. Comparisons between the matrices are more likely to lead to principles.

Decoding: The decoding of the interaction matrix is the interpretation stage.

The decoding may be done at two levels; i) Quantitative analysis of teacher behavior, and ii) Qualitative analysis of teacher behaviour**.**

Conclusion: It helps the teacher in the grouping of students for their betterment by finding out student talk. It provides feedback to the teacher and thus helps him in modifying his pattern to teaching and behavior. It helps in understanding analytically what goes on in the classroom and what should be done to improve teaching- leaning environment.

The FIAC takes note of verbal teaching behaviours only although teaching involves both verbal and non-verbal interactions. Secondly, this system does not provide any information about content. Thirdly, it has considered only ten categories; teaching may have other interactions too. Fourthly, it analyses only the verbal interaction when the class is supposed to be basically teacher centred. Fifthly, use of this system requires expertise on the part of the observer.

This research examines Flanders Interaction Analysis as a method for collecting the qualitative and quantitative elements of teachers' verbal interaction. The goal is to advocate for the use of this method throughout our primary and secondary schools teaching and learning processes.

Adoption of it will have a favourable effect on the learning environment's social climate, which is unfortunately lacking in most public primary and secondary schools. It is well known that social atmosphere influences both output and the calibre of interpersonal relationships. The development of students' social and interactional skills is a key educational goal, and Flanders' Interaction Analysis method stands out as a daring step in the right direction to raise the bar on educational excellence.

A technique called interaction analysis should be used in teacher education in a way that is in line with the idea of personal inquiry. Transforming knowledge into action as part of the teaching process is what inquiry in teacher education entails. To achieve self-insight while functioning as a teacher, it entails one who experiments with their own behaviour, gathering objective knowledge about one's behaviour, and assessing this information in light of the teacher's role.

According to Flanders, there is an average of 80% instructor discourse, 20% student talk, and 11–12% silence in classrooms. In fact, this is the typical situation in our current educational system at all three levels—primary, secondary, and postsecondary. It is very necessary to turn this situation around. In a traditional classroom setting, it is expected that the teacher will take the lead more frequently than the students.

The percentage of student speaking that involves an act of initiating is measured by the Pupil Initiation Ratio (PIR). A high PIR demonstrates that students take the initiative to contribute their own ideas to the class discussion. This energises the intellectual environment of the teaching and learning process, geared toward a robust growth of the person into a sound and productive citizen, crucial for the development of the nation.

The interpersonal connection between educators and students are connected interaction analysis. The teacher's control over classroom engagement and his instructional authority are clearly interrelated. The benefit of verbal engagement is building a relationship between the instructor and children so that the learnerfeel comfortable confiding in the teacher about their feelings, ideas, and early learning difficulties. The bad influences that are the scourge of our current educational system reduced when a "free discourse" environment is formed within the school system.

4.1.4: GALLOWAY'S SYSTEM OF INTERACTION ANALYSIS

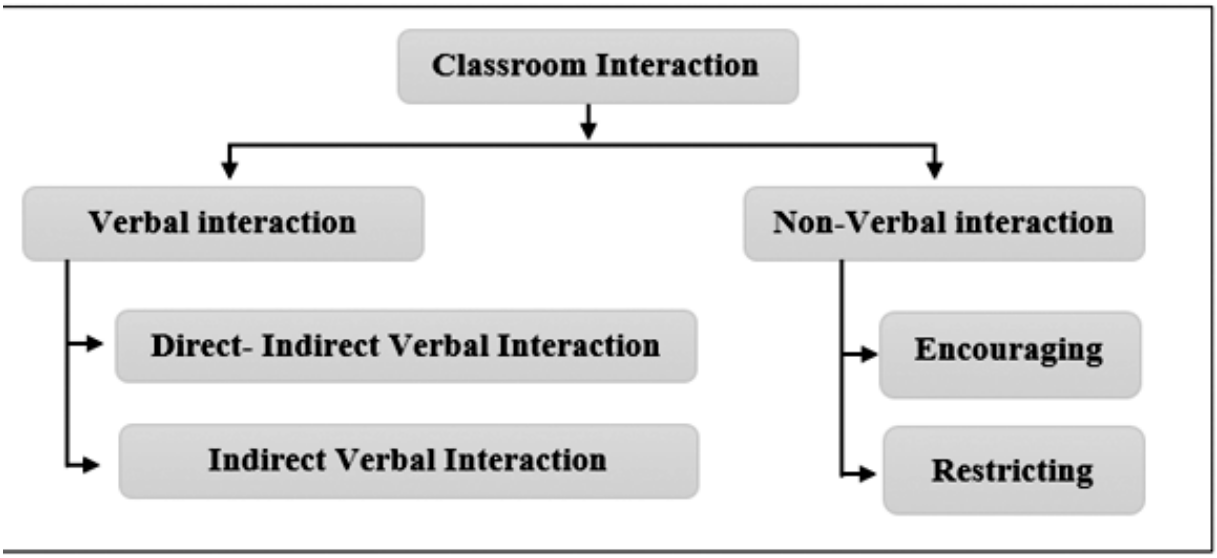
Nonverbal communication is the exchange of messages or actions without the use of words. Eye contact, body postures, gestures, touches, and conversational silences. Symbols and non-symbols, etc. can all be used to convey it. When a teacher is giving instructions to students in a classroom, the students can also be effectively instructed by the teacher's nonverbal behavior.

The non-verbal dimensional characteristics of teaching can be used in conjunction with the Flanders system's categories, time intervals, and ground rules in the Charles Galloway, approach of interaction analysis.

The discipline in the classroom is frequently managed by the teacher maintaining different physical postures and also by some nonverbal cues. Non-verbal cues are always present while speaking face to face. It is impossible to avoid this situation due to physical presence. This study takes into account significant non-verbal characteristics of teacher-centered activities such lecturing, delivering instructions, and teaching from a board, as well as teacher mobility in the classroom, body posture, gestures, and facial emotions. For student-centered activities, it may account a set of non-verbal cues such hand gestures, face expressions, and face movements that can be linked with the verbal cues of interactions.

Galloway Supervision System : I.D.E.R. System

It is based on both verbal and nonverbal communicationdevelopedby Charles M. Globe. Globe in the teaching of both verbal and nonverbal behaviors of the system is measured. He follows standard interconnection process is displayed—



The interconnection of both verbal and nonverbal processes in the system shown in Figure above four components are used, Therefore these components on the basis of the fi rst letter of the name of the system is placed IDER system—

I = Indirect (Verbal) Interaction,

D = Direct (Verbal) Interaction,

E = Encouraging (Non-Verbal Interacting)

R = Restricting (Non-Verbal Interaction)

Inspected the following classes in his system kept Globe—

Galloway inspection system (IDER) category or categories

(A) Indirect Direct Interconnection Process class literal-The following 10 components placed—

1. Accepting students' feelings.
2. To encourage.
3. Students use display ideas.
4. Questioning.
5. Preaching.
6. To provide guidance.

7. Criticism and to show the authority.
8. Student talks.
9. Students Initiation.
10. Silence or confusion.

(B) Incentives, disincentives class nonverbal inter-process class- The following 10 components placed—

1. Acceptance / rejection
2. Agreement / disagreement.
3. Show implementation or neglect.
4. Personal or general.
5. Responsible / Non-Responsible.
6. Be passion or remain neutral.
7. Be determined or to be rude.
8. To rejection or neglect.
9. Ignore.
10. Pleasant or annoying.

Charles Galloway has used direct-indirect and encouraging restricting components. The observer encodes the teacher- pupil's verbal and non-verbal behaviour. This system of classroom observation involves the following categories

Direct-indirect (verbal)	**Encouraging restricting(non-verbal)**
Accepts students feelings	Acceptance or indifference
Praises or encourages	Congruent or incongruent
Use student ideas	Implement or perfunctory
Ask questions	Personal or impersonal
Lecturing gives information	Responsive and unresponsive
Giving directions	Involve or dismiss
Criticizing or justifying authority	Receptive or attentive
Students talk (Response)	Receptive or attentive
Student talk (Initiation)	Firm or harsh
Silence or confusion	Comfort of distress

Encoding Procedure

In this system, both verbal and nonverbal classroom are inter-process inspection. Flanders in this system is similar to the rules of inspection. There is also a class interval is 10 seconds and the total observation time of 20 minutes. In this system each class. Through verbal and nonverbal interconnection points in the process of terminating the rail line marking and signs are used by fi re. Inspection of the article is added to the class start and end.

Decoding Process

Verbal and nonverbal behavior of the system for the 20 × 20 matrix table is used. It also explains how the matrix is followed by action. This table is prepared on the basis of inspection of class system. The verbal and nonverbal sections separated pairs are depicted in the table of frequency given below-

Category	Representative Keys		
	Verbal Behaviour	Non-Verbal Behaviour	
		Desirable	Undesirable
1	1	Q	A
2	2	W	S
3	3	E	D
4	4	R	F
5	5	T	G
6	6	Y	H
7	7	U	J
8	8	-	-
9	9	-	-
10	0 (Zero)	(Zero)	(Zero)

The frequencies listed in the table above procedure IDER table are crafted pieces. The IDER table is classified into four parts and components of the practice are to calculate the percentage.

Verbal and non-verbal features for interaction

Category	Features	
	Verbal	**Non-verbal**
Accept feeling	Yes, hmm, ok,	Nodding head, eye blink, hand-movement,
Praises or encourages	Good, fine, excellent, not bad, go on , continue, go ahead , tell us more	Hand clap, head nodding, smile, iris expansion, heptic
Accepts or uses ideas of students	Fine, ok, well that's interesting..., repeating student's statement.	Interaction through board, writing on board
Ask questions	Tell me, Why, how, when, where, what, is this, do you, board content	Pause, pointing to board,
Lectures	Explaining the topic	Hand movement, pointing to board, writing over board, maximized focus of class
Give directions	Stand-up, sit-down, keep quiet, raise your hand, calling by name	Pointing to student
Criticize or justifies authority	Listen, repeating own sentences,	
Pupil's response	Answering the question	Head nodding, writing, smile
Student talk-initiation	Asking question	Hand-raise, standing
Silence or confusion	Pause	

Features of Charles Galloway System:

- The teacher's nonverbal communication is crucial to classroom interaction. .
- Since one cannot observe how one behaves, feedback for behaviour is important.
- The non-verbal cues are crucial since they can bolster and inspire a student.
- Interaction in the classroom might be more successful when nonverbal communication is used.
- One can develop a better awareness of himself by becoming aware of the non-verbal activities taking place all around them.
- Teachers who have received training have better nonverbal communication skills.
- The principle of changing the teacher's behaviour serves as the foundation for the system.

Hence, Non-verbal communication can be more effective during interaction in the classroom is the main assumption of Charles Galloway system of observation.

Advantages of Charles Galloway System

- The teachers are continuously provided with the feedback such that the modification of behaviour is done.

- It provides an opportunity to a teacher to improve upon his/her non-verbal behaviour.
- Negative Reinforcement-i.e.punishment is avoided.
- It is a reliable and objective technique of observing and analysing the verbal and non-verbal behaviour of a teacher in classroom.
- It helps in determining the patern and flow of teaching behaviour.
- It adds and supplements the training techniques like microteaching and team teaching.
- It can be used for carrying out research in the means of teaching, teacher behaviour, Pre-service and in-service education of teachers

Limitations of Charles Galloway System

- The teacher may hesitate in the presence of video camera or supervisor.
- The teachers may find it difficult to handle it in the classroom as both the verbal and the non-verbal behaviours could not be prominently marked.
- A single aspect of non-verbal behaviour, do comprise of various small behaviour, which could not be properly categorized.
- The process is time consuming.
- Requirement of costly sophisticated media of educational technology i.e. video camera or other device.
- The system concentrates on both the verbal and non-verbal behaviour. It does not describe the classroom behaviour totally as some are always over looked which might be important too.
- Classroom interaction in the form of pupil-pupil interaction does not find place in this system

4.1.5: SUMMING UP

Interaction Analysis (IA) both verbal and nonverbal are methods of analytical observation related to the actions of a teacher takes place while delivering a lesson and simultaneously nonverbal cues of learners in terms of Flander and Galloway for assessing Andragogy of Education. Bothare methodical observationsand performances that serves as a beneficial tool for discovering, researching, categorising, and measuring particular factors while a teacher and theirlearners interact in a learning environment that is intended to be educational.

The non-verbal dimensional characteristics of teaching can be used in conjunction with the Flanders system's categories, time intervals, and ground rules in the Charles Galloway, approach of interaction analysis. Proximity, stance, touch, eye contact, and hand motion and

facial emotions are examples of non-verbal dimensional qualities. Nonverbal cues can also be strategically used to create an impression, achieve a goal, or express an attitude.

4.1.6: ASSIGNMENTS

1. Discuss the Meaning and Concept of Flanders's Interaction Analysis(FIAC).
2. Discuss different Category of FIAC.
3. Discuss the concept of Verbal Interaction and Non Verbal Interaction in a classroom situation as proposed by Flander and Galloway.
4. As the interaction proceeds, the observer will continue to write down the following numbers: 5,7,7,5,1,4,9 and 4 in a classroom Verbal Interaction Procedure. Prepare and tabulate a 10x10 FIAC Matrix by interpreting different proportional possibility of Teacher Talk and Student Talk.

4.1.7: SUGGESTED READING

1. "Interaction Analysis: Theory, Research, and Application" by Robert E. Galloway - This is the original book written by Galloway himself that outlines the theory, research, and application of interaction analysis.
2. "Interaction Analysis: A Guide for Conducting Observational Research in Second Language Classrooms" by Hossein Nassaji - This book applies Galloway's Interaction Analysis to the context of second language classrooms and provides guidance on how to conduct observational research.
3. "Analyzing Interactions in Childhood: Insights from Conversation Analysis and Discourse Analysis" by Amanda Bateman - This book uses Galloway's Interaction Analysis in combination with conversation analysis and discourse analysis to examine interactions in childhood.
4. "Interactional Competences in Institutional Settings: From School to the Workplace" edited by LorenzaMondada and Florence Oloff - This book discusses Galloway's Interaction Analysis as a tool for examining interactional competences in institutional settings such as schools and workplaces.
5. "Assessing Speaking" by Sari Luoma - This book uses Galloway's Interaction Analysis to develop a framework for assessing speaking in second language classrooms.

6. “Interaction Process Analysis: A Method for the Study of Small Groups” by Robert F. Bales and Fred A. Strodtbeck - This book introduces Interaction Process Analysis (IPA), which includes Flanders Interaction Analysis as one of its components.
7. “Teacher Talk: A Post-Formal Inquiry into Educational Change” by Peter M. Senge and Nelda H. Cambron-McCabe - This book applies Flanders Interaction Analysis to classroom interactions to investigate changes in teaching practices.
8. “A Guide to Classroom Observation” by Gordon W. Allport and James M. Ross - This book provides guidance on how to conduct classroom observations, including the use of Flanders Interaction Analysis.
9. Education Technology—S.K. Mangal, P.H.I. Learning.
10. The basic premise of Technical Education—Yogesh Kumar Singh.

NOTES

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