

UNIT VII Pedagogy, Andragogy and Assessment

Concept of Pedagogy and Andragogy	5
Pedagogy	5
Definitions of Pedagogy	5
Principles of Pedagogy	6
Pedagogical Analysis	6
Stages of Pedagogical Analysis	6
Critical Pedagogy	7
Need of Critical Pedagogy	7
Characteristics of Critical Pedagogy	7
implications of Critical Pedagogy in Teacher Education	7
Levels of Teaching	8
Memory Level of Teaching	8
Herbartian Model of Memory Level of Teaching	8
Understanding Level of Teaching	10
Morrison's Model of Understanding Level of Teaching	10
Reflective Level of Teaching	12
Biggie and Hunt's Teaching Model of Reflective Level of Teaching	12
Focus	12
Syntax	13
Social System	13
Support System	13
Andragogy	13
Definitions of Andragogy	14
Characteristics of Andragogy	14
Principles of Andragogy	14

Theory of Andragogy	Error! Bookmark not defined.
Assumptions Underlying Andragogy	14
Critiques of Knowles' Theory	15
Difference between pedagogy and andragogy	16
Self-Directed Learning	16
Competencies of Self-Directed Learning	16
Key Assumptions of Self-Directed Learning	16
Characteristics of Self-Directed Learner	17
Dynamic Model of Learner's Autonomy	17
Concept of Assessment	19
Assessment	19
Definitions of Assessment	20
Nature of Assessment	20
Functions of Assessment	20
Importance of Assessment	21
Perspectives of Assessment	21
Assessment as Learning	22
Types of Assessment	22
Placement Assessment	23
Formative Assessment	23
Types of Formative Assessment	23
Summative Assessment	24
Types of Summative Assessment	24
Diagnostic Assessment	24
Types of Diagnostic Assessments	24
Relationship Between Objective and Outcome	24
Objective	24
Outcome	25
Three Domains of Learning	25

Cognitive Domain	25
Assessing Cognitive Learning	26
Objective Test	26
Types of Objective Tests	Error! Bookmark not defined.
Essay Tests	27
Affective Domain	27
Affective Assessment Tools	28
Psychomotor Domain	28
Tools to Assess Psychomotor Domain	29
Assessment in Pedagogy of Education	31
Feedback Devices	32
Types of Feedback devices	32
Criteria of Feedback Devices	33
Guidance as a Feedback Device	33
Assessment of Portfolio	33
Need for Assessment of Portfolio	34
Assessing Performance Through Portfolios	34
Characteristics of Portfolio	34
Reflective Journal	35
Structure of Reflective Journal	35
Designing a Good Reflective Journal Assessment	35
Possible Questions for a Reflective Journal	36
Advantages of Reflective Journal	36
Disadvantages of Reflective Journal	37
Rubrics	37
Field Engagement using Rubrics	37
Importance of Rubrics	38
Involving Students in Rubric	38
Usage of Rubric Effectively	39

Competency Based Evaluation	39
Assessment Tools in Competency Based Evaluation	40
Feedback	40
Competency Sampling	40
Observation	40
360° Review	40
Presentation and Papers	40
ICT Resources	41
Assessment of Teacher Prepared ICT Resources	41
Assessment in Andragogy of Education	42
Interaction Analysis	42
Classroom Interaction Analysis	42
Basic Theoretical Assumptions of Interaction Analysis	43
Flander's Interaction Analysis	44
Flander's Interaction Analysis Categories	44
Usage of Flander's Interaction Analysis	45
Observation or Recording of Classroom's Events	45
Ground Rules	46
Construction of Interaction Matrix	46
Interpretation of Interaction Matrix	48
Galloway's System of Interaction Analysis	49
Assumptions of Galloway's System	50
Characteristics of Interaction Analysis Techniques	51
Disadvantages of Interaction Analysis Technique	51
Criteria for Teacher's Evaluation	51
Product Criteria	52
Process Criteria	52
Presage Criteria	52
Rubrics	54

Types of Rubrics	54
Steps for Constructing Rubrics	55
Step 1: Define Your Goal	55
Step 2: Choose a Rubric Type	56
Step 3: Determine Your Criteria	56
Step 4: Create Your Performance Levels	56
Step 5: Write Descriptors for Each Level of Your Rubric	57
Step 6: Revise Your Rubric	57

Concept of Pedagogy and Andragogy

Pedagogy

Pedagogy is authority focused, where the teacher has complete control over a child's learning experience. Broadly, it refers to the theory and practice of education and how it influences the growth of learners. It is taken as an academic discipline, which is the study of how knowledge and skills are imparted in an educational context. It considers the interaction that takes place during learning.

Literally, pedagogy is both an art and a science of teaching children. The word "Pedagogy" comes from the ancient Greek word 'paidagogos', a compound composed of 'paidos' (child) and 'agogos' (leader) means 'to lead a child'..

- It was considered a form of art in the beginning. The art of teaching and leading children to knowledge.
- With the advent of scientific fields, like sociology and psychology, pedagogy was counted as true science. Thus, the function of pedagogy was to guide the process of teaching and learning.
- It is now accepted as applied science. It is a discipline that is geared towards the practical applications of acquired knowledge.

Simply, it is the method and practice of teaching. It includes different types of teaching styles, feedback, assessments and teacher's theory. When people talk about the pedagogy of teaching, they refer to the way in which the teacher delivers the content of the curriculum to the class.

Definitions of Pedagogy

According to **Watkins** and **Mortimore**, "Pedagogy is any conscious activity, by one person designed to enhance learning in another".

According to **Bernstein**, "Pedagogy is a sustained process where by somebody acquires new forms or develops existing forms of conduct, knowledge, practice and criteria from somebody or something deemed to be an appropriate provider and evaluator".

According to **Durkheim**. "Pedagogy is a practical theory, focused on the attainment of the educational phenomenon, counter-pointed to the Scientific Theory, which is focused on the knowledge of the educational fact, a task which is up to the sociology of education to undertake".

According to **Givanni Genovesi**. "Pedagogy is autonomous science because it has its own language and is aware of how to use it, according to its own methods and its own ends and by this language, pedagogy generates a body of knowledge and a series of experiments, without which any construction of education models would be impossible".

Principles of Pedagogy

- It equips learners for life in its broader sense.
- It engages with valued forms of knowledge.
- It recognises the importance of prior experience and learning
- It requires learning to be scaffolded.
- It needs assessment to be in harmony with learning.
- It promotes the active engagement of the learner.
- It fosters both individual and social processes and outcomes.
- It recognises the significance of informal learning.
- It depends on the learning of all those who support the learning of others.
- It demands consistent policy frameworks with support for learning as their primary focus.

Pedagogical Analysis

It means the logical and systematical breaking of the curriculum from the point of view of a pedagogue for the purpose of its effective transaction. Pedagogical Analysis is selection of an appropriate objectives and strategies in various instructional situations to access the level of actual teaching at the end. It involves various logical steps to arrive at logical inference and it also helps the students to understand the concepts, principles and phenomenon.

Stages of Pedagogical Analysis

Stage 1 Divide the content of the selected unit into suitable sub-unit and arrange the selected subunits into a number of required periods.

Stage 2 Briefly write the essence of the content of the selected sub-unit.

Stage 3 Write an appropriate previous knowledge, required for the sub-unit.

Stage 4 Write an appropriate instructional objective, to be selected for the sub-unit.

Stage 5 Select appropriate teaching strategies for the sub-unit, according to the given instruction.

- Write the name of the methods applied.
- Mention the teaching aids required,
- Briefly illustrate the necessary demonstration and/or experimentation required.
- Mention the necessary board work required,

- Write probing questions related to the sub-unit answer for them, and provide for them.
- Prepare a worksheet for the sub-unit,

Stage 6 Give suitable examples/illustrations/analogies for the sub-unit.

Stage 7 Prepare a table of specification, for the sub-unit Write at least six criterion referenced test items each with specific criteria for the sub-unit.

Critical Pedagogy

Critical Pedagogy is a philosophy of education and social movement that combines education with critical theory First described by **Paulo Freire**, it has since been developed by **Henry Giroux** and other praxis oriented, "Educational movement guided by passion and principle, to help students, to develop consciousness of freedom, recognise authoritarian tendencies and connect knowledge to power and the ability to take constructive actions".

According to **Ira Shor**, "Critical pedagogy as habits of thought, reading, writing and speaking which go beneath surface meaning, first impressions, dominant myths, official pronouncements, received wisdom and mere opinions, to understand the deep meaning, social context, ideology and personal consequences of any action, event, object, process, organization, subject matter or discourse".

Need of Critical Pedagogy

- It advocates the necessity for 'skilled critical questioning' for teaching practitioners and learners.
- It believes that it is essential to develop in the learners, the ability to see through the beliefs and practices in a society either for appreciating and accepting them.
- By adopting this approach, students sections can be equipped with the knowledge and skills required to effectively encounter the challenges posed by the hidden curriculum.

Characteristics of Critical Pedagogy

- It centers its practice on community and collaboration.
- Must remain open to diverse voices and thus requires invention to reimagine the ways that communication and collaboration happen across cultural and political boundaries.
- The objective of this pedagogy is to empower students and help them to help themselves.
- Promotes emancipation and intellectual growth.
- The aim is to liberate students from oppression.

Implications of Critical Pedagogy in Teacher Education

Attention to Traditional and Indigenous Context of Society: It is necessary to include the rural population in education planning, in order to uplift the country. It has been observed that education

plans are based on the higher class of the society. The designer of educational content should include the minorities as well.

Coaches and Student's Mutual Participants in Educational Plan Development: Elite and senior are not the only officers of educational plan development. managers But the professors, experts, parents, teachers, local groups and leaders should contribute in educational planning.

Attention to the Political Position of Education in Curriculum Planning: Important characteristic of critical pedagogy is its attention towards the political aspect of education. Critical pedagogy believes that education is a political activity and its mission is to analyse social relations.

Role of Cultural Segment: From a critical pedagogical perspective, literacy helps in bridging the cultural barriers. Cultural segment plays an important role in the teaching-learning process.

The Importance of Adult Education: Many comprehensive plans can be formulated to teach the adults. The adults need to understand the lesson and critically analyze it.

Levels of Teaching

Teacher can organize the content at three levels that are discussed below-

- Memory level of teaching.
- Understanding level of teaching.
- Reflective level of teaching.

Memory Level of Teaching

At this level, the situation of thoughtlessness is found. It is concerned with memory or mental ability that exists in all living beings. Teaching at memory level is considered to be the lowest level of teaching. At this level,

- The thinking ability doesn't play a role.
- Students only cram the facts, information, formulas and laws that are taught to them.
- Teaching is nothing, but learning the subject matter by rote.
- The role of the teacher is prominent and the student is secondary.
- The study material is organized and pre-planned. The study material in árqential order.

Memory level teaching lacks insight Psychological, it is cognitive level of teaching.

Herbartian Model of Memory Level of Teaching

Herbart was the exponent of memory level teaching.

Herhart described the following steps for presenting the Model of Memory Level of Teaching-

- Focus
- Social system
- Syntax
- Support system

Focus

It emphasizes on cramming of facts and development of following capacities i.e.

- Training of mental aspects
- Providing knowledge of facts
- Retaining the learnt facts
- Recalling and representing the learnt facts

Syntax

Preparation The pupils are prepared to acquire new knowledge by testing their previous knowledge. Statement of Aim Topic is made clear to the pupils and the teacher writes the topic on the blackboard.

Presentation: The pupils are provided with opportunities for self-learning. Teacher tries to derive most of the information from the pupils, so that a relationship may be established between the new and the previous knowledge.

Comparison of Association Teacher establishes a relationship between two subjects i.e. facts and events of the same subject. By comparison, the new knowledge may be clarified and made permanent in the minds of the pupils.

Generalisation After explaining the basics of the lesson, the pupils are given an opportunity to think on that lesson. Pupils formulate some principles and laws which can be used in future life situations.

Application Observe, whether these new learnt knowledge can be used in new situations or not. This is verified through questioning or new opportunities, to make use of learnt knowledge. It makes the knowledge permanent and laws can be verified.

Social System

The process of teaching is both social and professional. Pupils and teachers are members of this social system. The teacher occupies the primary phase and the students occupies the secondary phase.

Thus, the function of the teacher includes:

- Presenting the content
- Controlling the student's activities
- Providing motivation

Support System

- More emphasis is laid on the power of learning by rote.
- To evaluate the pupil, both oral and written tests are conducted
- This essay type test is more useful.

- Recall and recognition are used successfully, through the objective type examination.

Understanding Level of Teaching

Understanding is something to perceive the meaning, grasp the idea and comprehend the meaning.

In the field of education and psychology, the meaning of understanding can be classified as-

- Seeing the total use of facts
- Seeing relationship
- A generalised insight

The teaching at the understanding level is of a higher quality than the one at the memory level. It is more useful and thoughtful from the viewpoint of mental capabilities. At this level of teaching, the teacher explains to the student about the relationship between principles and facts.

Teachers teach them, how these principles can be applied. Memory level teaching barrier is essential to be crossed for this level of teaching. As compared to memory level teaching, the understanding level teaching has greater merit. This enable students to have complete command over subject material. In the understanding level, role of the teacher is more active.

At this level also, students are secondary. At this level, no cramming is encouraged. The new knowledge acquired at this level is related to the earlier knowledge gained. A generalisation is made on the basis of facts and the facts are used in the new situations.

Morrison's Model of Understanding Level of Teaching

Morrison very clearly stated that understanding is not simply being able to recall something, it is not a mere generalization deduced from specific facts, it is insight into how it may be used in future situations. Morrison asserted that the outcome of all teaching is 'mastery' and not memorization of facts. He proposed a unit plan, each unit representing an insight which is relatively in itself.

Morrison described the following stops for presenting the Model of Understanding Level of Teaching

Focus

The pupil should achieve the mastery of the concept Teacher stresses upon the mastery of the content, so that a desirable change may occur in the personality of the pupils

Syntax

Syntax is divided into five following steps-

Exploration: Previous knowledge is tested by questioning. After analysing the content, the elements are arranged in a logical sequence from a psychological point of view. Then, it is determined by how the units of content or new knowledge should be presented.

Presentation: Teacher remains more active. He forms the following activities for the presentation of the contents

- Presents the content in small units, maintain the sequence of these units and a relationship with the pupil's establishments.
- Teacher diagnoses whether the content has been understood by the pupils or not.
- Teacher repeats the content, until most of the pupil does not acquire the knowledge.

Assimilation: Teacher provides opportunities to pupils for assimilation.

Assimilation has the following characteristics

- Pupils are provided with occasions for generation, through assimilation.
- Opportunities are provided, in order to stress upon the depth of the content.
- At the time of assimilation, every pupil studies in accordance with his requirement.
- In assimilation, the pupils work themselves in laboratories and libraries.
- Supervised study occurs.
- Both pupils and teachers remain active.
- The pupils perform individual activities and teachers guide them according to their need, during supervision.
- During the assimilation period, the teacher tests whether the pupils have achieved mastery over the content or not.

Organisation: Pupils are provided with the occasions for representation, all the pupil write contents in their own language. The teacher comes to the conclusion, whether the pupils can write the content without anybody's help or not. The representation in the subjects, like mathematics, grammar and arithmetic has no importance.

Recitation This is the last step of understanding the level of teaching. The pupils present the contents orally in front of the teacher and his mates.

Social System By providing motivation, the teacher controls the behaviour of the pupils. Both intrinsic and extrinsic motivation is used. Thus, the teacher imparts instructions to the pupils and works with full involvement

Support System It does not remain constant, it keeps on changing. In assimilation, the pupils have to pass the exam to enter into organisation and recitation. At the end of the organisation period, a written test takes place. Then after recitation, an oral test takes place. Both oral and written tests occur during various steps of understanding the level of teaching.

Reflective Level of Teaching

This level is also known as introspective level. Reflecting on something means giving a careful thought to something, over a period of time. It also means thinking deeply about a particular thing.

Reflective level of teaching is significant due to the following reasons

- it is considered to be the highest level of teaching.
- It is highly thoughtful and useful.
- A student can attain this level, only after going through previous levels.
- Teaching at the reflective level, enables the students to solve the real problems of life.
- At this level, the student is made to face a real problematic situation. The student, by understanding the situation and using his critical abilities, succeeds in solving the problem.
- At this level, emphasis is laid on identifying the problem, defining it and finding a solution to it. The student's original thinking and creative abilities develop at this level.
- The role of teacher at this level of teaching is democratic. He does not force knowledge on the students, but develops their talents and capabilities.
- The role of the student is quite active.
- It is problem-centered and the student is busy in an original imagination. .

For the development of a reflective level of teaching, the credit goes to **Hunt and Biggie**. Thus, the level is also known as **Biggie and Hunt's Teaching model**.

Biggie and Hunt's Teaching Model of Reflective Level of Teaching

M Biggie held that "Reflective level of teaching tends to develop the classroom atmosphere, which is more exciting and active, more critical and penetrating and more open to fresh and open thinking". Furthermore, the type pursued by a reflective class tends to be more rigorous and work producing than pursued at an understanding learning level . Thus, this level of teaching develops the thinking ability of students, so that they can solve real life related problems by reasoning, logic and imagination.

M Biggie and Hunt described the following steps in their model of reflective teaching :

- Focus
- Syntax
- Social system
- Support system

Focus

- To develop critical and constructive thinking among
- To develop problem-solving competency among the pupils.
- To develop independent and original thinking power among the pupils.

Syntax

Following the individual and social nature, syntax of reflective level teaching can be defined in following four steps

- The teacher presents a problematic situation before the pupils.
- Pupils formulate hypotheses for testing.
- Pupils collect data to verify the hypothesis.
- Hypotheses are tested. Results are derived on the basis of the test, which are the original ideals of the pupils.

Social System

- The classroom environment is open and independent. Pupils occupy primary and teacher occupies secondary place.
- Discussion and seminar are used during teaching.
- All the pupils become active and sensitive for solving the problem.

Support System

Objective type test does not use essay type tests for evaluation.

Following things are being evaluated

- Attitude and belief of pupils. .
- Involvement in the learning activities
- Development of critical and creative competencies of the pupils.

Andragogy

Andragogy is focused on the learning experiences of adults and the methods which work best in adult's education. It means the understanding of the science and practice of adult learning. The word 'andragogy' comes from the Greek word 'andr' meaning 'man' and 'agogos' meaning leader of. In Greek, andragogy means 'man-leading'.

Two primary understandings of andragogy are-

- The science of understanding (theory) and supporting, (practice) lifelong education of adults.
- In the tradition of Malcolm Knowles, it is a specific theoretical and practical approach. It is based on a humanistic conception of self-directed and autonomous learner as well as teachers as facilitator of learning

Definitions of Andragogy

According to Cooper and Henschke, "Andragogy is a theory that guides the scope of both research and practice on how adults learn, how they need to be taught and elements to be considered when adults learn in various situations and contexts".

According to Malcolm Knowles, "Andragogy is an art and science of adults learning, thus, it refers to any form of adult's learning".

Characteristics of Andragogy

- Adults have many experiences and are knowledgeable. Their backgrounds provide a rich resource for learning.
- Adults have various values, beliefs and opinions.
- They are responsible for their own learning.
- Adult's self-concept is self-direction.
- They often approach learning as problem-centered, rather than content oriented.

Principles of Andragogy

In 1984, Knowles suggested four principles that are applied to adult learning. They are

- Adults need to be involved in the planning and evaluation of their instruction,
- Experience (including mistakes) provides the basis for the learning activities.
- Adults are most interested in learning subjects, that have an immediate relevance and impact to their job or personal life.
- Adult learning is problem-centered, rather content oriented.

Theory of Andragogy

Journing Malcolm S Knowles' Theory of Andrugogy is an theory that is developed on the specific needs of the adults In contrast to pedagogy or learning in childhood, Knowles emphasized that adults are self-directed and expect to take responsibility for decisions. Adult learning programs must accommodate this fundamental aspect. He has discussed characteristics, principles and essential assumptions related to andragogy in his Theory of Andragogy.

Assumptions Underlying Andragogy

It is an attempt to develop a theory, specifically for adults learning. He emphasises that adults are self-directed and expects to take responsibilities for decisions. Adults learning programmes must accommodate this fundamental aspect.

It is based on following six assumptions-

Self-Concept: Adults at the development stage, are more secure for themselves than childrens. This allows them to take part in directing their own learning.

Past Learning Experience: An adult is a mature He/she accumulates a growing reservoir of experience that becomes an increasing resource for learning.

Readiness to Learn: Many adults reach a point in which they see the value of education and are ready to be serious about and focused on learning.

Practical Reasons to Learn: Adults are looking for practical, problem-centred approaches to learning. Many adults return to continuing education for specific practical reasons, such as entering a new field.

Internal Motivation: While many children are driven by external motivation, adults are more internally motivated.

Problem-Centered Focus: Adults need to see an immediate application of learning. Therefore, they seek learning opportunities that will enable them to solve problems.

Critiques of Knowles' Theory

The critiques were of the opinion that Knowles' andragogy suffered from a weak or non-existent empirical basis and that consequently, andragogy could not be called "a theory of adult learning". This particularly applied to Knowles' assumptions about adult learners.

Among others, Jarvis (1984) and Davenport (1987) pointed out these assumptions lacked empirical basis.

Sandlin (2005) claimed that by considering the learning process and the individual to be separated from the social, political, economical and historical context, Knowles ignored the relationship between the individual and society.

Difference between pedagogy and andragogy

Difference Between Pedagogy and Andragogy		
Basis	Pedagogy	Andragogy
The learner	<ul style="list-style-type: none"> The learner is dependent upon the instructor for all learning. The teacher/instructor assumes full responsibility for what is taught and how it is learned. The teacher/instructor evaluates learning. 	<ul style="list-style-type: none"> The learner is self-directed. The learner is responsible for his/her own learning. Self-evaluation is a characteristic of this approach.
Role of the learner's experience	<ul style="list-style-type: none"> The learner comes to the activity with little experience that could be tapped as a resource for learning. The experience of the instructor is most influential. 	<ul style="list-style-type: none"> The learner brings a greater volume and quality of experience. Adults are rich resource for one another. Different experiences assure diversity in groups of adults. Experience becomes the source of self-identify.
Readiness to learn	<ul style="list-style-type: none"> Students are told, what they have to learn in order to advance to the next level of mastery. 	<ul style="list-style-type: none"> Any change is likely to trigger a readiness to learn. They need to know, in order to perform more effectively, in some aspect of one's life is important. Ability to assess gaps between where one is now and where one wants and needs to be.
Orientation to learning	<ul style="list-style-type: none"> Learning is a process of acquiring prescribed subject matter. Content's units are sequenced according to the logic of the subject matter. 	<ul style="list-style-type: none"> Learners want to perform a task, solve a problem and live in a more satisfying way. Learning must have relevance to real life tasks. Learning is organized around life/work situations rather than subject matter's units.
Motivation for learning	<ul style="list-style-type: none"> Primarily motivated by external pressures, competition for grades and the consequences of failure. 	<ul style="list-style-type: none"> Internal motivators i.e. self-esteem, recognition, better quality of life, self-confidence and self-actualization.

Self-Directed Learning

It is a process in which the learner assumes primary responsibilities for planning, implementing and evaluating a learning project. The learner chooses what to learn, how to learn and also decides when to continue and when to end the learning project.

According to **Malcolm Knowles**, "Self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes".

Competencies of Self-Directed Learning

- To plan and participate in one's own learning activities,
- To develop the capacity of learning and thinking of learners.
- To develop a sense of independence by enhancing free learning .
- To develop problem-solving approaches.
- To develop time management skills.
- To develop decision-making skills.

Key Assumptions of Self-Directed Learning

Knowles states five key assumptions which underlie self-directed learning

- Self-directed learning assumes that the human being grows in capacity and needs to be self-directing as an essential component in maturing.
- Self-directed learning assumes that the learners' experiences become an increasingly rich resource for learning that should be exploited along with the resources of experts.
- It assumes that individuals become ready to learn what is required to perform their evolving life task or to cope more adequately with their life problems.
- It also assumes that the natural orientation of individuals is task or problem-centered.
- Self-directed learning assumes that learners are motivated by internal incentives such as the need for self-esteem.

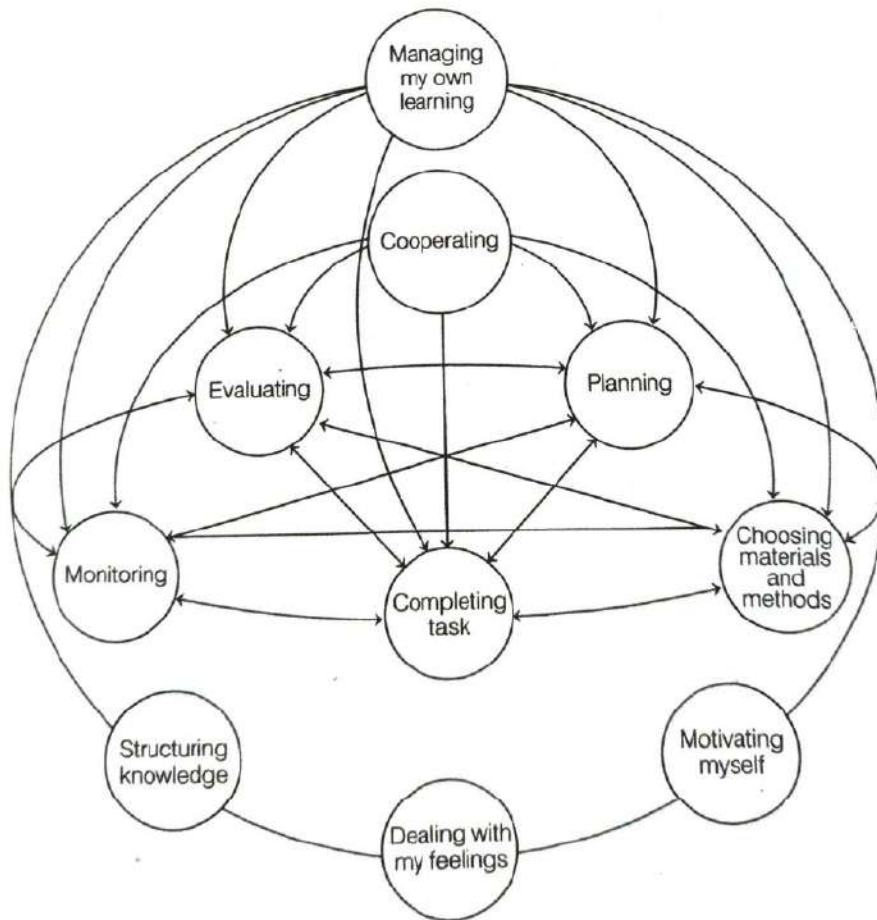
Characteristics of Self-Directed Learner

According to Winne, the self-directed learners have following characteristics

- Set goals for extending their knowledge and sustaining their motivation.
- Learners can manage their emotions.
- They can periodically monitor their progress towards their goals.
- Revise their strategies to fine tune their progress towards their goal.
- They can evaluate obstacles that may arise and take necessary adaptations.

Dynamic Model of Learner's Autonomy

The Dynamic Model of Learner's Autonomy is a tool designed, in order to support the self-assessment and evaluation of learning competencies and to help both learners and advisors to focus on relevant aspects of the learning process. The Dynamic model accounts for cognitive, metacognitive, action oriented and affective components of learner's autonomy and provides descriptors of learner's attitudes, competencies and behaviours. It is dynamic in order to allow learners to focus on their own needs and goals. The three dimensions in the Dynamic model are a predominantly action oriented dimensions (planning, choosing materials and methods, completing tasks, monitoring, evaluating, cooperating, managing my own learning predominantly affective and motivational dimension (dealing with my feelings, motivating myself) and a predominantly cognitive and metacognitive dimension (structuring knowledge). In addition, a social dimension (cooperating) is integrated into each component in learning , all these aspects are closely interrelated,



Dynamic Model of Learner's Autonomy

The Dynamic Model of Learner's Autonomy sums up these components in terms of learner's competencies, skills, choices and decision-making processes and accounts for mutual relationships.

There is no hierarchy among these components, except for 'managing my own learning' which summarises all other components and superordinates them. This model is structurally and functionally dynamic. It is structurally dynamic because each component is directly related to all the others. It is functionally dynamic, because learners can decide to enter the model from any component and move freely from one component to other without following a given path, according to their need and purpose.

Concept of Assessment

Assessment

Assessment is the systematic process of documenting and using empirical data on the knowledge, skill, attitude and belief to refine programs and improve student's learning. The word "assessment" has been widely used by educator to evaluate, measure and document the academic readiness, learning progress and skill acquisition of students, throughout their learning in life. It is the process of gathering information, systematically as a part of an evaluation. Assessment can focus on the individual learner, the learning community, a course, an academic program, the institution or the educational system as a whole.

It is carried out to see what children and young people know, understand and are able to do. It is very important for tracking progress, planning next steps, reporting and involving parents, children and young people in learning.

It is a process by which information is obtained, relative to some known objective or goal. It is a broad term that includes testing. Tests are assessments that are made deliberately, so that they can be administered. In other words, all tests are assessments, but all assessments are not tests. Teachers assess progress at the end of a school year through testing.

Definitions of Assessment

According to **Allen** (2004), "It involves the use of empirical data on students learning, to refine programs and to improve student's learning".

According to **Huba and Freed** (2000), "It is the process of gathering and discussing information from multiple and diverse sources, in order 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's results are used to improve subsequent learning".

According to **Erwin** (1991), "It is the systematic basis for making inferences about the learning and development of students. It is the process of defining, selecting, designing, collecting, analysing, interpreting and using information to increase student's learning and development".

According to **Palomba and Bannin** (1999), "Assessment is the systematic collection, review and use of information about educational programs, undertaken for the purpose of improving student's learning and development".

Nature of Assessment

It is embedded in the learning process. It is tightly interconnected with curriculum and mode of instruction. As teachers and students work towards the achievement of curriculum outcomes, assessment plays a crucial role in informing instruction, guiding the students to next steps and checking progress and achievement.

Therefore, the nature of assessment is enumerated in following points-

- It involves students and teachers in continuous monitoring of student's learning.
- It has a great impact on the self-esteem of pupils, which will have a critical influence on learning.
- It helps in collection of frequent feedback on student's learning and how they respond to particular teaching approaches.
- It provides an opportunity for close observation of students in the process of learning.
- It gives students a measure of their progress as learners. .

Functions of Assessment

- Monitoring the progress of students
- Helps in decision-making skills.
- Screening of the students.
- Placement of students in remedial courses.
- Instructional planning helps to create adaptive learning strategies.
- Evaluation of instructional programmes.
- Feedback helps in developing lifelong learning skills.

- Student motivation is necessary for quality education.

Importance of Assessment

Assessment is a common tool used in education. When a teacher creates instruction (lesson material) for the students, it becomes important to evaluate those instructions. The teacher sets goals to achieve at the end of each chapter or/and at the end of instruction. Assessment determines whether or not the goals of education are being met.

Continuous questions that come to a teacher's mind, when taking assessment are "Are we teaching, what we are supposed to be teaching"?, "Are we reaching the goals we set for the instruction"?, "Is there a way to improve your instructions and promote better learning,"? These questions don't have to be asked at a certain stage of developing instruction, but rather these questions are to be asked throughout the whole instruction and even after its implementation

Therefore, assessment affects decisions on different instructional needs, domains, grades, advancement, placement and curriculum.

Perspectives of Assessment

Perspectives of assessment are discussed below-

Assessment for Learning

It is the process of seeking and interpreting evidences for learners and for their teachers, to decide that where the learners are in their learning, where they need to go and how best to get there

Its strategies are :

Strategic Use of Questioning Questioning is used not only as a pedagogical tool, but also as a deliberate way for the teacher to find out what students know, understand and are able to do.

Effective Teacher's Feedback It focuses on established success criteria and tells the students, what they have achieved and where they need to improve. Importantly, the feedback provides specific suggestions about how that improvement might be achieved.

Peer's Feedback It occurs when a student uses established success criteria to tell another student what they have achieved and where improvement is necessary. Again, the feedback provides specific suggestions in achieving improvement.

Student's Self-Assessment It encourages students to take responsibility for their own learning. It incorporates self-monitoring, self-assessment and self-evaluation.

Assessment of Learning

It refers to strategies, designed to confirm what students know, demonstrate and whether or not, they have met curriculum outcomes or the goals of their individualized programs, or to certify proficiency and make decisions about student's future programs or placements.

It is designed to provide evidence of achievement to parents, other educators, the students themselves and sometimes to outside groups (e.g. employers, other educational institutions). Assessment of learning is the assessment that becomes public and results in statements or symbols about how well students are learning. It often contributes pivotal decisions that will affect a student's future. It is important to know that the underlying logics and measurements of assessment of learning must be credible and defensible. As a consequence of assessment of learning are often for reaching and seriously affects students, teachers have the responsibility of reporting student's learning accurately and fairly, based on evidence obtained from a variety of contexts and applications.

Effective assessment of learning requires that teachers provide

- a rationale for undertaking a particular assessment of learning at a particular point of time.
- Clear descriptions of the intended learning.
- processes that make it possible for students to demonstrate their competencies and skills.
- A range of alternative mechanisms for assessing the same outcomes.
- public and defensible reference points for making judgements.

Assessment as Learning

Assessment as learning occurs when students are their own assessors. Students monitor their own learning, ask questions and use a range strategies to decide what they know and can do and how to use assessment information for new learning

Assessment as learning :

- encourages students to take responsibility for their own learning
- requires students to ask questions about their learning.
- involves teachers and students, creating learning goals to encourage growth and development.
- provides ways for students to use formal and informal feedback and self-assessment to help them understand the next steps in learning.
- encourages peer assessment, self-assessment and reflection.

Types of Assessment

It is a process of gathering information. More specifically, assessment is the way instructors gather data about their teaching and their student's learning. As a continuous process,

assessment establishes measurable and clear student's learning outcomes for learning, provisioning a sufficient amount of learning opportunities to achieve these outcomes. Teacher uses the collected information to inform improvement in the student's learning.

There are four different types of assessments and they are

- Placement
- Formative
- Summative
- Diagnostic

Placement Assessment

It is used to place students, according to their prior achievements or personal characteristics, at the most appropriate point in an instructional sequence, in a unique instructional strategy, or with a suitable teacher, conducted through placement testing i.e. the tests that colleges and universities use to assess college's readiness and place students into their initial classes. Placement evaluation is also referred to as pre-assessment is conducted prior to instruction. This is done to establish a base line from which individual student's growth can be measured. This type of particular assessment is used to know the student's skills level about the subject. It helps the teacher to explain the material more efficiently. These assessment are not graded.

Formative Assessment

It is generally carried out, throughout a course or project. It provides feedback and information during the course of the project, while the learning is occurring. It measures a student's progress as well as the teacher's own progress as an instructor. For example, when implementing a new activity in class, teachers can observe students and determine if the activity should be used again or not.

A primary focus of formative assessment is to identify areas that may need improvement. These assessments are not graded and act as a gauge to student's learning progress and determine teacher's effectiveness.

Types of Formative Assessment

- Observation during in-class activities and non-verbal feedback during lecture.
- Homework exercises as review for exams and class discussion.
- Reflection journals that are reviewed periodically, during the semesters.
- Question and answer sessions, both formal planned and informal spontaneous.
- Conferences between the instructor and student at various points in the semester.
- In-class activities, where students informally present their results,

Summative Assessment

Generally, it is carried out at the end of course or project. It provides information and feedback that sums up the teaching and learning process. They are evaluative. They are made to summarise what students have learnt and to determine, whether they understand the subject matter well or not. This type of assessment is typically graded and can take form of tests, exams or projects. Typically, no more formal learning takes place at this stage.

Types of Summative Assessment

- Examination
- Term paper
- Projects
- Portfolio
- Student's evaluation of the course
- Instructor's self-evaluation
- Performances

Diagnostic Assessment

It helps the teacher to identify student's present knowledge of a subject, their skill sets and capabilities, to clarify misconceptions before the teaching takes place. Knowledge of a student's strengths and weaknesses can help the teacher to plan better on what to teach and how to teach.

Types of Diagnostic Assessments

- Pre-test (on content and abilities)
- Self-assessment (identifying skills and competencies)
- Discussion board responses (on content's specific prompts)
- Interviews (brief, private, 10 minutes interview of each student)

Relationship Between Objective and Outcome

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 objectives and outcomes lies in the emphasis on who will be performing the activities. Learning objectives generally describe what an instructor or program aims to do whereas, a learning outcome describes in observable and measurable terms what a student is able to do as a result of completing a course.

Objective

- It describes the goals and intentions of the professor who teaches the subject of particular course.
- It often termed as the input in the course, state the purpose and goals of the course. .
- It focuses on content and skills, important within the classroom or program.

- It describes what the staff and faculty will do
- It can often be numerous, specific, and detailed, Assessing, and reporting on each objective, for each student may be impossible,

Outcome

- It catalogues the overarching products of the course and are the evidence that the goals were achieved.
- They are statements that describe or list measurable and essential mastered content knowledge, reflecting skills, competencies and knowledge that students have achieved and can demonstrate upon successfully, after completing a course.
- They express higher level thinking skills that integrate course content and activities and can be observed as a behaviour, skill or discrete usable knowledge upon completing the course.
- They are exactly what assessments are intended to show specifically, what the students will be able to do upon completing the course.
- An assessable outcome can be displayed or observed and evaluated against criteria. Outcomes are clear and measurable criteria for guiding the teaching, learning, and assessment process in the course.

Three Domains of Learning

Bloom's Taxonomy was created by Benjamin Bloom in 1956, published as kind of classification of learning outcomes and objectives that have been used for everything from framing digital tasks and evaluating applications to write questions and assessments.

Bloom's Taxonomy is hierarchical ordering of cognitive skills that help teachers teach and students learn. It is a set of three hierarchical models used to classify educational learning objectives into levels of complexity and specificity. The three lists cover the learning objectives in cognitive, affective and psychomotor domains. All teachers should know about them and use them to construct lessons. Each domain has a taxonomy associated with it. Taxonomy is simply a word for classification.

Three domains are :

- Cognitive (Thinking)
- Affective (Feeling)
- Psychomotor (Physical)

Cognitive Domain

of the three learning domains, the cognitive domain is assessed more commonly. Cognitive domain is divided into six categories by Anderson and Krathwohl as

Remembering It is recognising or recalling knowledge from the memory. It is implemented when memory is used to produce or retrieve definition, facts or lists or to recite previously learned information.

Understanding Constructing meaning from different types of functions, be they written or graphic messages or activities like interpreting, exemplifying, classifying, summarising, inferring, comparing or explaining,

Applying Carrying out or using a procedure through executing or implementing. Applying relates to or refers to 10 situations where learned material is used through products like models, presentations, interviews simulations.

Analysing Breaking materials or concepts into parts, determining how the parts relate to one another or how they inter-relate or how the parts relate to an overall structure or purpose. Mental actions included in this function are differentiating, organising and attributing as well as being able to distinguish between the components or parts. When one is analysing, he/she can illustrate this mental function by creating spreadsheets, surveys, charts, diagrams or graphic representations.

Evaluating Making judgements 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 pre-cursory behaviour before one creates something.

Creating Putting elements together to form a coherent or functional whole, reorganising elements into a new pattern or structure through generating, planning or producing. It requires users to put parts together in a new way or synthesise parts into something new and different, thus, creating a new form or product. This process is the most difficult mental function in the new taxonomy.

Assessing Cognitive Learning

The commonly used methodology in assessment that teachers used to measure learning in the cognitive domain are objective tests and essay tests.

Objective Test

bins either from the tester or the marker. It refers to any An objective type test is one which is free from any subjective written test that requires the examinee to select the correct Answer from among one or more of several alternatives of objective supply a word or two and that demands a judgement when it is scored.

Types of Objective Tests

(i) **Selection Type** It generally consists of a question, and a number of response options from which examinees must select one or more alternatives. For e.g.

- Multiple Choice Item
- Alternate Response Item
- Matching Item
- Computer Adaptive Testing .

(ii) **Short Answer Type** It generally consists of a question, an incomplete statement or a direction to which the examinee must forward a response. Standard types of short answers include the direct question, completion, identification and direct exercise.

Essay Tests

An essay question is a topic or brief statement to which an examinee must construct an extended response. An essay question can be used to measure a person's ability to make comparisons, apply principle to new situations, organize information, communicate ideas, be creative, conduct a critical study, make judgement, draw inference, integrate knowledge and applications, summarize information and demonstrate in depth knowledge. The key to essay questions used to measure any or all of these abilities is the fact that examinees must produce their own extended responses, in their own words.

Affective Domain

Krathwohl's affective domain taxonomy is perhaps the best known of any of the affective taxonomies. The affective taxonomy includes the manner in which we deal with things, emotionally such as feelings, values, appreciation, enthusiasm, motivation and attitude.

Following are the taxonomy in the affective domain-

Receiving It describes the stage of being aware of or sensitive to the existence of certain ideas, material or phenomena and being willing to tolerate them. For e.g. to differentiate, to accept, to listen (for), to respond, etc.

Responding It describes the second stage of the taxonomy and refers to a commitment in some small measures to the ideas, materials or phenomena involved by actively responding to them. For e.g. to comply with, to follow, to commend, to volunteer, to spend leisure time in, to acclaim, etc.

Valuing It means being willing to be perceived by others as valuing certain ideas, materials or phenomena, For e.g. to increase measured proficiency into relinquish, to subsidise, to support, to debate, etc.

Organisation It is the fourth stage of Krathwohl's taxonomy and involves, relating the new values to those one who already holds it and bringing it into a harmonious and internally consistent philosophy. For e.g. to discuss, to theorise, to formulate, to balance, to examine, etc.

Characterisation By value or value set means acting consistently in accordance with the values, an individual has internalised. For e.g. to revise, to require, being rated high in the value, to avoid, resisting, managing, to resolve, etc.

Affective Assessment Tools

Various assessment tools that can be used to measure affective learning are discussed below-

Self-Report Most commonly used measurement tool in the affective domain. It essentially requires an individual to provide an account of his attitude or feelings toward a concept or an idea or people. It is also known as written reflection.

Rating Scale It refers to a set of categories designed to elicit information about a quantitative attribute.

Semantic Differential Scale It tries to assess an individual's reaction to specific words, ideas or concepts in terms of ratings, on bi-polar scales, defined with contrasting adjectives at each end.

Example : Good 10 5 0 5 10 Bad

(10- extreme; 0- neutral)

Thurstone Scale Louise Thurstone is considered to be the father of attitude measurement. He addressed the issue on how favourable an individual is with regards to given issues. He developed an attitude, continuum to determine the position of favorability on the issue.

Likert Scale In 1932, **Rensis Likert** developed the method of summated ratings (or Likert scale) which is widely used. This requires an individual to tick on a box, to report whether they 'strongly agree', 'agree', 'undecided', 'disagree' or strongly disagree in response to a large number of items, concerning attitude, objects or stimulus.

Checklist The most common and perhaps the easiest instrument in the affective domain is to construct the check Ust.

Psychomotor Domain

The psychomotor domain includes physical movement, coordination and use of motor skill areas. It has been revised over the years by Dave (1970), Harrow (1972) and Simpson (1972).

Dave's Psychomotor Domain It is the simplest domain and easiest to apply. Dave's 5 levels of motor skills represent different degrees of competence in performing a skill, The five levels are :

Imitate The ability to observe and to pattern your behaviour after someone else. At this level, you will simply copy someone else or replicate someone's actions following observations.

Manipulate The ability to perform certain actions by memory or following instructions. At this level, you can perform a task from written or verbal instructions.

Precision The ability to perform certain actions with some level of expertise and without help or intervention from others. At this level, you are able to perform a skill with a high degree of precision and accuracy and with few errors.

Articulation The ability to adapt and integrate multiple actions to develop methods to meet varying and novel requirements. At this level, your skills are so well developed that you can modify movement to fit special requirements or to meet a problematic situation.

Naturalisation It is the ability to perform actions in an automatic, intuitive or unconscious way. At this level, your performance is automatic with little physical or mental exertion. Your performance will become second nature or natural, without any need to think much about it.

Tools to Assess Psychomotor Domain

Observational Tools Observation provides insights so that planning can be done to meet individual needs and evaluates the learning that takes place. With the help of observational tools, teachers can focus on student's performance during a single activity or during routine classroom activities.

Types of observation tools are-

1. Checklist It is basically a method of recording, whether a characteristic is present or absent, or whether an action have or have not taken place. It provides a simple yes/no judgement.

Advantages

- It is useful in evaluating those learning.
- It is adapted to most of the subject matter's areas.
- It is useful in evaluating those learning activities that involves a procedure.
- Process record observations.
- It Objectively evaluates traits and characteristics.

Disadvantages

- It does not indicate quality of performance.
- It is a close ended method.
- It does not give a context for the information.
- It may miss important information not included in the checklist.

2. Rating Scale Rating scale is a standardised method of recording and interpretation of behaviour. With this technique, students/ individuals can be rated on a scale from low to high, with respect to particular trait.

Advantages

- Technically, it is a standard device for recording qualitative and quantitative judgements about observed performance.
- It specified outcomes and objectives. .
- It evaluates personal social development.
- It helps teachers to rate their students periodically, various characteristics, like honesty, cooperativeness, consideration of others and other personality traits.
- A student can use it to rate himself.

- it can be used with a large number of students.

Disadvantages

- There is a lack of uniformity, with which terms are interpreted by evaluation.
- Ratings are subjective and raters may give biased responses.
- This method examines only specific behavioural traits and may overlook important behaviours.

3. Anecdotal Records They are factual descriptions of the meaningful incidents and events that the teacher has observed in the pupils' lives. Each incident should be written down shortly after incident happens. The descriptions may be recorded on separate cards or as running accounts, one for each pupil on separate pages in a notebook.

Advantages

- it records incidents of spontaneous behaviour on settings natural
- It directs the teacher's attention to a single student
- It provides cumulative records of growth and development.
- It can be used as a supplement to quantitative
- The new members may use these records and can acquaint themselves with the students.

Disadvantages

- They are time consuming.
- When incidents are noted and recorded, out of context, they may lose their meaning,
- The teacher should have practice and training in making observational and writing anecdotal records.
- It is less reliable than other observational tools.

4. Critical Incident Technique Critical incident is a method of assessing the student's analytical and problem-solving competencies. In this, a student's performance can be recorded and performance can be evaluated, according to the stated criteria. Use of the critical incident technique as a data gathering mechanism, could be similar to that of the anecdotal record.

Advantages

- Flexible method that can be used to improve when there are multiple tasks.
- It identifies even rare events that might be missed by other methods which only focus on common and everyday events.
- It is a technique which provides rich information. It can be applied using questionnaires or interviews. .
- This method is easy to understand. .

Disadvantages

- It is a time consuming method.
- Through critical incident analysis no hard qualified data is produced. .

- The technique's aim is to produce dense material, but to make most out of this rich material a concise analysis structure is highly needed.

Assessment in Pedagogy of Education

Pedagogical Assessment

Teachers play a crucial role in engaging students in the process of learning. Effective teaching is about what students learn and not simply what students do. Pedagogy constitutes a broad range of elements in curriculum, assessment and instruction that teachers use to promote student's learning. The pedagogical dimension is one of the formulas that the teacher needs to take into account. Assessing learners can be a meaningful activity for both teacher and learner. For the teacher, it gives an indication of how well the teacher has taught and for the learner, how well the learner has learnt. It is through pedagogical assessment in the form of feedback, evaluation and ICT resources that a teacher becomes a more organised and responsive observer of learning.

So in pedagogy, instruction is one component of an interrelated set of curricula and assessment strategies that teachers use in the service of learning.

Feedback Devices

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

Feedback device is a process or mechanism with the help of which an individual or a system receives information (Feedback) about its working in terms of its strength and weakness in order to bring desirable improvement. The teacher can teach well and a strategy can work well with the help of appropriate feedback devices simply because it is able to receive timely and appropriate knowledge of the strengths and weaknesses of its working.

Types of Feedback devices

There are various devices which are used for making the student-teacher competent and the main task done by these devices is to create a situation for the student-teacher to bring the desirable change in his teaching competence.

The various feedback devices are as follows-

Simulated Social Skill Training (SSST): It means the teaching performed and training received through simulation. It conveys the use of simulation technique. Basically, it is a learning or training technique for helping the learner to bring desirable changes in his behaviour through some systematic and organised learning experiences in simulated conditions. It was developed by Cruick Shunk in 1968. This technique induce certain behaviours in artificial situations. Simulated social skill training can be defined as a mechanism of feedback device to induce desirable competence among student-teachers by playing the role of teacher in their own group as an artificial situation of classroom teaching.

Interaction Analysis: It is a technique for analysing and observing the classroom behaviour. It was developed by Ned A Flender in 1959. It provides the structure, components and flow of behaviour of classroom activities. It is used as a mechanism of feedback device for the modification of student-teachers teaching competence, as the competence of a student-teacher can be adjusted through the degree of effectiveness of his teaching, which in turn can be assessed through his classroom behaviour or interaction. In this way, a systematic or objective analysis of the teacher's classroom behaviour or interaction provides a reliable assessment of what goes on inside the classroom in terms of teaching and learning. Such type of analysis of classroom behaviour and interaction is known as Interaction Analysis.

Micro-Teaching: Micro-teaching is a technique or device of imparting training to the inexperienced or experienced teachers for learning the art of teaching by practicing specific skills through "Scaled down teaching encounter". Micro teaching is a training concept, as it provides teachers with a practice setting in which the normal complexities of classroom are reduced and in which the teacher gets feedback on his performance. The feedback devices are used to create

the situation for the student-teacher to bring desirable change in his teaching. The chief objective of micro-teaching is the development of teaching skills in student-teachers.

Criteria of Feedback Devices

Feedback devices should target individual needs, be linked to specific assessment criteria and be received by a student in time to benefit subsequent work.

Effective feedback devices

- guide students to adapt and adjust their learning
- guide teachers to adapt and adjust their teaching to accommodate student's 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 motivated to improve.
- have consequences, so that it engages students by requiring them to attend to the feedback as part of the assessment.
- are efficient, so that staff can manage it effectively,

Guidance as a Feedback Device

Guidance can 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. Teacher's 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 in classroom interventions, as it focuses on ways to improve the performance.

Assessment of Portfolio

Portfolios are personalised long-term documentation of student mastery of course material. An essential element of portfolios are student's reflections on their own learning and progression towards the mastery of the material documented in the portfolio. As such portfolios are windows of the meta-cognitive process of students.

A portfolio is a purposeful collection of selective and significant samples of student's work accompanied by clear criteria for performance, which evidence student's efforts, progress and achievements. They exhibit students progress and achievements in several areas. Portfolio assessment have been used for large scale accountability and purposes of schools to work in transition and for the purposes of certification.

Need for Assessment of Portfolio

Teachers and administrators have been making a move from traditional paper and pencil type test to alternate forms of assessment. Teacher's observation, projects and essays are more creative ways of evaluating student's achievement have gained a large following within the classroom.

Although, its use has declined by one type of tool that can be used effectively is portfolio. It remains quite popular in education, coursework and with administrators evaluating senior teachers. It is seen that so many class teachers forgot the use of portfolio assessment as a tool. The reason might be that portfolio is a very subjective form of assessment. It provides both formative and summative assessment opportunities for monitoring progress towards reaching an identified outcome. By setting criteria for content and outcomes, portfolios can communicate concrete information about what is expected from 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. Thus, the portfolio provides the necessary mechanism for housing all the information available about student's learning. It offers a holistic approach for student's learning.

Assessing Performance Through Portfolios

The assessment of the portfolio will help to define what the student knows and can do and will facilitate the planning of further learning. Even when a portfolio is used for a short three week class, it is possible for the student and the teacher to see the growth in learning that has been made in relation to the course or module objectives. It provides more authentic and valid assessment of students' achievement and comprehensive views of students' performances in contexts and encourages students to develop independent and self-directed learners and enhances communication among teacher, student and parents. It can provide learners' opportunities to demonstrate his/her weakness and strengths and for teachers to direct their teaching. It also can encourage students to take responsibility for their own learning and enhance student-teacher communication.

Characteristics of Portfolio

There are several characteristics that are essential for the development of any type of portfolio that can be used for assessment. According to Barton and Collins (1997), portfolio should be:

Multi-sourced: It means allowing for the opportunity to evaluate a variety of specific evidence. Multiple data includes both people (statements of participants, teachers or programme staff, parents and community members) and artifacts (anything from test scores of photos, drawings, journals and audio or video tape performances).

Authentic: In this, the context and evidence are directly linked. Here, the items selected or produced for evidence should be related to programme activities as well as the goals and criterias. If the portfolio is assessing the effect of a programme on participants of the communities then the

evidence should reflect the activities of the programme rather than skills that were gained elsewhere.

Explicit: The students or programme participants should know in advance what is expected of them, so that they can take responsibility for developing their evidence.

Integrated: The evidence establishes correspondence between programme activities and life experiences.

Multi-purposed: A well designed portfolio assessment process evaluates the effectiveness of intervention at the same time that it evaluates the growth of individuals or communities. It also serves as a communication tool, when shared with family, other staff and community members. In a school setting, it can be passed on to the other teachers of staff, as the child moves from one grade level to another.

Reflective Journal

A reflective journal is a means of recording ideas, personal thoughts and experiences as well as reflections and insights, a student have in the learning process of a course. In addition to the demands of a typical written assignment, reflective journals require the students to think more deeply to challenge their old ideas with new incoming information and to synthesize the course materials they have learnt into their personal thoughts and philosophy and also to integrate it into their daily experiences and future actions.

A reflective journal is often called a learning journal as it is a steadily growing document that the learner writes to record the progress of his learning. It is a powerful tool to promote autonomy and improve student's learning.

Reflective journals allow students to practice their writing skills in an open-ended format that encourages the same thought process that is used in analytical writing. Zemelman, Daniels and Hyde believe that the most powerful learning happens when students self-monitor or reflect.

Structure of Reflective Journal

Basically, there are two standard forms of reflective journals They are

Structured Journal Students are given a specific question, target or set of guidelines to base their writing on. **Unstructured Journals** Students are required to record thoughts and feelings with minimal direction.

Designing a Good Reflective Journal Assessment

good reflective journal assessment, following points should he considered :

- Consider the types of reflective journals that fit into your course. Suppose, if the students are inexperienced with reflective journals, the structure form would be more student friendly because specific questions and guidelines are available.

- Make sure that there are clear ideas about expectations and assessment criteria given to the students. For example, what can students put in their journals? What is the definition of reflection? What is the approximate length of each journal entry? etc.
- Try to make students understand the purpose and benefit of reflective journals from the very beginning.
- Make sure that the teachers have explained and discussed the policies concerning privacy and confidentiality of information with students.
- Decide the regularity of journal entry.
- Provide timely feedback to students.

Possible Questions for a Reflective Journal

Some of the possible questions that can be framed for the reflective journal are as follows

- What was the most interesting thing that I read for this lesson?
- What were the three main things that I learned from this lesson?
- What I previously think was true, but now known to be wrong?
- What we do not cover that is expected we should?
- What was new or surprising to me
- What have I changed my mind about, as a result of this lesson?
- What are the issues that interested me a lot, and that I would like to study in more detail?

Advantages of Reflective Journal

Active Learning The process of reflection encourages the students to take the initiative to be active, self-driven allows an individual learner to explore concepts and ideas in relation to their thoughts and feelings from various perspectives.

Understanding the Progress of Students Reflective journal provides opportunities for teachers to gain better understanding about how the students think and feel about the course and the learning process of the students throughout the course which will eventually enhance the student's learning process.

Improving Writing Skills Writing reflective journals can involve students in a new form of writing, which they may not have had a chance to experience in the past.

Freely Expressing Personal Views and Criticising the One Self Reflective journal assignments provides the platform for students to freely express what they think and feel about the course and their learning process and also promotes their expression of ideas, personal experiences and opinions.

Enhance Critical Thinking and Creativity The process of self-reflection enhances the development of critical thinking skills, among students when they relate their knowledge to real world issues. It can help students to develop their creativity and a questioning attitude towards different issues and problems.

Disadvantages of Reflective Journal

Difficult for Objective Marking Due to the subjective nature of reflective assignments, it is rather difficult for assessors to be objective and have consistent grading.

Different assessors when marking, may have quite a large discrepancy in their judgement of different types of work

Time Consuming for Grading The context of reflective writing can be very wide, and involves a wide range of concepts, issues and perspectives. As a result, it often takes considerable amount of time for assessors to read and grade student's work.

Confidentiality As students have to disclose their personal and private views and information in their reflection, some of them may be unwilling to honestly disclose their real perspectives. They may be concerned that what they wrote will significantly affect the grade, they receive. .

Clear Guidelines Needed Many students may not be familiar with the procedure of writing reflective assignments and may feel very lost when working on it for the first time. Teachers have to give clear guidelines to students about what should be included in the reflective journals, what can be learnt from writing it, as well as how they will be graded.

Rubrics

Rubrics means a scoring guide used to evaluate the quality of students' constructed responses. It is a scoring tool that explicitly describes the instructor's performance expectations for an assignment or piece of work. It can be used for making assignments, class participation or overall grades.

There are two types of rubrics that are **Holistic** and **Analytical**. Holistic rubrics group several assessment criteria and classify them together under achievement levels. Whereas analytic 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 a grading criteria for assignments. This tool is also useful for both teacher and student. A rubric defines in writing what is expected of the student, to get a particular grade on an assignment.

Heidi Goodrich Andrade, a rubrics expert defines rubrics as "a scoring tool that lists the criteria for a piece of work or what counts".

Field Engagement using Rubrics

A rubric is an assessment tool that clearly indicates achievement criteria across all the components of kind of student's work, from written to oral to visual. Rubrics can be excellent tool to use when assessing student's work for

several reasons as given below

- No re-writing of the same comments on several different student's assignments.
- No wasting of time on writing up comments.

- No repeated questions about the assignment requirement, even after handing back the marked assignment.
- Addressing the specific components of the marking scheme for student and instructor, prior to assignment submission.
- Grading equally the beginning, middle and end of the grading session.

Importance of Rubrics

Rubrics are important due to the following reasons

As an Assessment Tool The main purpose of a rubric is its ability to assess student's performance or work. Rubrics can be adapted to each assignment or to the course to better assess the learning objectives.

Improve Learning Using a rubric is an active and engaging form of learning. When rubrics are used by both student and teacher alike a rubric creates a feed forward mechanism which means a rubric should allow the students to reflect on their work and focus on how to improve in the future.

As a Communication Tool Rubrics can be seen as a communication tool between student and teacher as it aligns expectations and outlines learning objectives for the assignment between student and teacher. Rubrics define clear learning objectives by which teachers can quickly and effectively monitor students progress.

Involving Students in Rubric

Understanding a Rubric

Arranging the students into groups of four or more and giving them the rubric, that teacher will be using for that particular task. Tell the student to discuss the task that the teacher has given to them and create a quick sample of papers which would receive marks in each of the categories. Then, the group will present their result to the whole class.

Creating a Rubric

It is a good idea to involve students in creating their own rubrics for classroom assignments. A student who can write the rubric for math problem knows the whole process inside and out and he/she can apply the knowledge and skills learned from the process to future assignment.

How to Make a Rubric

- 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, teacher might even consider selecting samples of exemplary student's work that can be shown to students when setting assignments.
- Decide how many levels of achievement teachers will include in the rubric and how they will relate to your institution's definition of grades as well as their own grading scheme.

- For each criterion, component, or essential element of quality, describe in detail, what the performance at each achievement level looks like.
- Leave space for additional, tailored comments or overall impressions and a final grade.

Usage of Rubric 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 re-used, later. 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 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 in it. Some instructors ask students to self-assess or give peer's feedback, using the rubric prior to 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 criteria on the rubric, but nevertheless seems to have exceeded or not met the overall qualities you are 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 actually derived. Some use a formula or multiplier, to give different weightings to various components, and 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.

Competency Based Evaluation

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

Assessments are on the actual skills and knowledge, the learner can demonstrate in the education setting.

The general features are-

Criterion Based on standard of practice.

Evidence Based accumulation of informal verbal/written assessment/feedback, assignment log, critique and self-assessment.

Participatory Based learner is involved in the process and consults with the assessor.

Assessment Tools in Competency Based Evaluation

It may include a wide range of assessment tools and activities, such as feedback, competency sampling, observation, 360 degree review, presentations and papers. No matter what method or tool utilised, four paramount features must be incorporated i.e. validity, reliability, fairness and flexibility

Feedback

- It justify to students how their marks of grade was derived
- It identify and reward specific qualities in student's work
- It guide students on what steps to be taken for their improvement.
- It motivate them to act on their assessment
- It develop their capability to monitor, evaluate and regulate their own learning.

Competency Sampling

- Sample of work for assessment
- Follows learning period/schedule
- .Reflects competency in practice.
- Permits the inclusion of patient feedback (as in patient management assessment).
- Clearly identify which units will be utilised in the assessment.

Observation

- Focused on behavioural markers i.e. What are you looking for?, How will you know when you see it?
- Conduct the observation and utilise the observations, personally and/or utilise the observation 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 from the learner themselves.
- Best method as a survey format via anonymous respondents.

Presentation and Papers

- Some student's benefit from the opportunity to present at a lunch and learn, rounds, etc.
- Encourage students to include their own experiences from the viewpoint of a student.
- Ensure relevancy

ICT Resources

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 helps to achieve the expected learning outcomes. There is a growing body of evidence that says use of ICT in the classroom can enhance learning. Thus, it is essential that the contemporary teacher has good ICT skills and is able to integrate ICT into the teaching and the learning processes. *Following are the ICT resources, that can help the teacher to get started*

- Basic knowledge of computer
- Basic computer task
- Basic knowledge of using different types of productivity software .
- Using electronic forms of communication
- Internet skills

Assessment of Teacher Prepared ICT Resources

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

Assessment of teacher ICT resources are as follows-

- Learn about integration of ICT and developing ICT capability.
- Planning and identifying opportunities for assessment. Determining the progression. .
- Unlock barriers to assess ICT capabilities.
- Establishing a relevant and meaningful learning environment.
- Gathering strong empirical evidence of attainment.

Assessment in Andragogy of Education

Introduction

Assessment is the systematic collection, interpretation and use of information about learning. The assessment in andragogy is important for assessing the educational activities of the learners. Assessment has always had a special place in programs for adults. The adults have different styles of learning, which can either enhance or deter their learning. Educators use a number of strategies to assess adult learning. However, assessment is a perpetual challenge for educators because of concerns of assessment, validity and fairness to learners. Assessment can be a useful tool to help learners, to determine gaps in their knowledge or help instructors determine if they need to make changes to their teaching strategies. The andragogical approach has changed the teaching philosophy of educators around the world. Assessment is central to successful teaching and learning.

The adult learners are self-directed, autonomous and independent. Thus, the andragogical process is an excellent preparation for lifetime learning. In assessment, the system of interaction analysis can be used to study the relationship between teaching style and pupil achievement.

Interaction Analysis

It is a process of encoding and decoding the study pattern of teaching and learning. In the encoding process, categories of classifying statements are established, a code symbol is assigned to each category and a trained observer records by jotting down code symbols.

In the decoding step, a trained analyst interprets the display of coded data and reconstructs the original events on the basis of the encoded data, even though he may not have been present when the data were collected. Although, there are many systems for coding spontaneous verbal communication in the classroom.

A typical system for interaction analysis will usually includes-

- A set of categories, each defined clearly.
- A procedure for observation and a set of ground rules, which govern the coding process.
- Steps for tabulating data, in order to arrange a display
- Suggestions, which can be followed in some of the more common applications.

Classroom Interaction Analysis

It is a specialised research procedure that provides information, about only a few of the many aspects of teaching. It is an analysis of spontaneous communication between teacher and pupils, that it is of no value, if no one is talking or if teacher talks continuously, or if student reads from a book. Unless, additional records are kept, the following kinds of information will be ignored i.e.

right or wrong, good or bad content information, whatever is being discussed, the variety of instructional material being used, the various class information during learning activities, the preparation of the teacher as received by lesson plan and anything else, not directly revealed by verbal communication.

Its **Teaching Interaction Analysis**, which applies only to the content free characteristics of verbal communication. The entire process of communication analysis becomes a measure of teacher influence because it makes an assumption that most of a teacher's influence is expressed through verbal statements and most of non-verbal influence is positively co-related with verbal. Those who have worked upon this technique, are disposed to accept this assumption.

So far as the communication is concerned, the three conditions are taken as:

- Teacher's talk
- Pupil's talk
- Silence or confusion

These three conditions are said to exhaust all possibilities. It is an objective and systematic technique for evaluating the classroom's performance of a teacher. Interaction Analysis is nothing more and nothing less than an observational technique, which can be used to obtain a fairly reliable record of spontaneous verbal statements and to determine.

Flander's Interaction Analysis is concerned primarily with verbal behaviour. This can be observed with higher reliability than non-verbal behaviour. An assumption is made that verbal behaviour of the teacher is an adequate sample of his/her total behaviour in the classroom, we must assume that the verbal statements of the teacher are consistent with his/her non-verbal gestures, in fact, his/her total behaviour. This assumption cannot be easily tested, since it will take too long a period to develop a reliable measure of a non-verbal behaviour.

Basic Theoretical Assumptions of Interaction Analysis

The various theoretical assumptions, which are basic to the idea of Interaction Analysts are as follows-

According to **Flander's** (1965), in a normal classroom situation, it is verbal communication, which is pre-dominant

According to **Flander's** (1966), we can normally assume that verbal statements of a teacher are consistent with his non-verbal gestures and in fact, his total behaviour. This assumption was sustained in terms of experience in Minnesota studies,

According to **Anderson** (1946), the teacher exerts a great deal of influence on the pupils. Pupil's behaviour is affected to a great extent by this type of teacher's behaviour, exhibited.

According to **Haggerty** (1932), the relation between students and teacher is a crucial factor in the teaching process and must be considered an important aspect of methodology.

According to **Lewin** (1939), it has been established that social climate is related to productivity and to the quality of interpersonal relations. It has been proven that democratic atmosphere tends to keep work relatively high, even in the absence of the teacher.

According to **HV Perkins** (1950), children tend to be conscious of a warm acceptance by the teacher and to express greatest fondness for the democratic teacher.

According to **Perkins** (1956), the role of classroom climate is crucial for the learning process.

According to **Flanders** (1963 and 1966), modification of teacher's classroom behaviour through feedback is possible, though how much change can occur and more knowledge relating to the performance of these changes will require further research.

According to **Raths**, teacher influence is expressed primarily through verbal statements. Now, verbal acts of influence do occur, but are not recorded through Interaction Analysis. The reasonableness of this assumption rests upon the assertion that the quality of the non-verbal acts is similar to the verbal acts, to assess verbal influence, therefore, it is adequately a simple of all influences.

These assumptions focus the attention on the verbal communication, participation of teachers and students in the teaching process.

Flander's Interaction Analysis

The development of interaction analysis was primarily the work of Ned Flanders in the year 1959. Indeed, the system is often referred to as Flander's System of Interaction Analysis, an innovation which makes possible significant insights into the analysis and improvement of instruction. It involves categorisation of all the sets of possible verbal behaviours of a teacher in the classroom, while interacting with his students.

Flander's Interaction Analysis Categories

In total, there are ten categories of verbal behaviour in this system, which are grouped into three major sections,

- Teacher's talk
- Student's talk
- Silence or confusion.

Teacher's Talk: It consists of seven categories. The first four categories belong to an indirect influence and the later three to direct influence. The category of indirect influence covers those verbal behaviours of the teacher, which gives the students a greater opportunity to respond or to maximise their freedom of action. In contrast, the category of direct influence exhibits those verbal behaviours of the teacher, which tend to restrict or minimise the student's freedom of action.

Pupil's Talk: It is divided into two categories. The third section, silence/confusion, includes all those behaviours that are not covered in the first and second sections. These sections and their ten categories with underlying component behaviours are summarised in table.

The next thing he has to do is to note down within every three seconds, the code or category number, which best represents the interaction event, just observed. For instance, when the teacher is praising, he should put 2; when he is lecturing, he should write 5 when he is asking questions, he should write 4; and again if he praises, he should write 2 on his datasheet.

Silence or Confusion Pauses, short periods of confusion in which communication cannot be understood by the observer.

Flander's Interaction Analysis Categories Teacher's Talk

Teacher's Talk	
(i) Indirect Influence	<ul style="list-style-type: none"> • Accepts feelings • Praises or encourages • Accepts or uses pupil's ideas • Asks questions
(ii) Direct Influence	<ul style="list-style-type: none"> • Lecturing • Giving directions • Criticising or justifying authority
Pupil's Talk	
(i) Response	<ul style="list-style-type: none"> • Pupil's talk response
(ii) Initiation	<ul style="list-style-type: none"> • Pupil's talk initiation
Silence/Confusion	<ul style="list-style-type: none"> • Silence or confusion

All categories are mutually exclusive, but subsume all types of verbal behaviour. The categories or verbal interactions are based upon the following two major activities i.e. initiation and response of both. The interchange between initiation and response, forms the classroom verbal interaction. The non-verbal interaction takes place through on task and off-task activities, caused by teacher or students.

Usage of Flander's Interaction Analysis

*This system involves **three** major steps, which are as follows-*

Observation or Recording of Classroom's Events

The observer is required to select an appropriate position in the classroom, to listen and watch the events as smoothly as possible, without disturbing or interfering with the spontaneous activities He is also required to train himself for the proper recording (referred to as encoding in the language of Interaction Analysis). For this purpose, he must memorise the code numbers (the category number) in relation to the component behaviours, represented by the different categories.

The next thing he has to do is to note down within every seconds, the code or category number, which best represent interaction event, just observed. For instance, when the team praises, he should put 2; when he is lecturing, he should w when he is asking questions, he should write 4; and again praises, he should write 2 on his datasheet.

The procedure of recording or encoding of the classroom events may go on at the rate of 20 to 25 observations per minute. Here, the observer, in a sense, acts as an automatic device, highly discriminating and objective in observing each and every aspect of the classroom events and recording it in terms of the code or category number. These numbers are recorded in a sequence in a column. Therefore, at the end of his observation, he may get a long series of numbers, written from top to bottom, so that the original sequence of events is preserved. Besides, he may write down marginal notes for explaining the unusual class' events.

Ground Rules

The task of observation, recording and encoding is quite complex and needs sufficient training, practice and care on the part of the observer. For maintaining objectivity and reliability of the process, there are certain ground rules, which have to be kept in mind.

They are :-

Rule 1 When not certain, to which two or more categories a statement belongs. Choose the category that is numerically farthest from category 5; e.g. for choosing between 3 and 4, choose 3 and for 8 and 9, choose 9.

Rule 2 If the primary tone of teacher's behaviour has been consistently direct or indirect, do not shift to the opposite classification, unless a clear indication of the shift is given.

Rule 3 The observer must not be concerned with his own bias or teacher's intent.

Rule 4 If more than one category occurs during the three seconds interval, 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 For silence, longer than three seconds, record 10 for every three seconds.

Rule 6 A teacher's joke, which is made at the expense of children, is recorded as 7.

Rule 7 It is recorded as 8, if a student gives a specific predictable answer to a narrow question, or a number of students, respond collectively,

Construction of Interaction Matrix

After recording or encoding the classroom events into ten categories, the next task is concerned with the construction of an interaction or observation matrix table, The matrix table consists of 10 rows and columns. The category numbers of the record sheet are tabulated in the table. Each number is entered in the form of sequence pairs, being used twice, firstly as the first number and secondly as second number. It's rows represent the first number in the pair and the column, the

second. Each pair of numbers overlaps with the previous pair and such overlapping pairs of observations are entered in appropriate cells of the matrix. are

In the matrix construction, one is to make sure that the entire series begins and ends with the same number. It is customary to add a 10 to the beginning and end of the series if it is not already present. Let us illustrate the process of matrix construction with an example.

Suppose that an observer has recorded or encoded the category numbers as 5, 4, 3, 10, 6, 2, 6, 1, 8 and 2. Let us add 10 in the beginning and 10 at the end of this series and try to form pairs. The result may be represented as:

Original Series	Series for Pairing	Pairing
5	10	10] I Pair
4	5	II Pair [5]
3	4	III Pair [4]
10	3	IV Pair [3]
6	10	V Pair [10]
2	6	VI Pair [6]
6	2	VII Pair [2]
1	6	VIII Pair [6]
8	1	IX Pair [1]
2	8	X Pair [8]
	2	XI Pair [2]
	10	10]

The pairs may be now entered in the matrix.

The first sequence pair (10,5) has been tallied in the cell located at the intersection of 10th row and 5th column. The next pair (5, 4) is being tallied in the cell located at the intersection of the 5th row and the 4th column. Similarly, all the remaining pairs have been tallied in their respective cells.

For exercising a check in the construction of the matrix, the total number of observations 'N' will always be tabulated by N - tallies, in the matrix. In the present example, there are 12 Category numbers(including the extra 10), which have produced a total of 11 tallies in the matrix.

Interaction Matrix Table

Category	1	2	3	4	5	6	7	8	9	10	Total
1								/			1
2									/		2
3									/		1
4			/								1
5				/							1
6	/	/									2
7											0
8		/									1
9											0
10					/	/					2
Total	1	2	1	1	1	2	0	1	0	2	11

Interpretation of Interaction Matrix

The process of interpretation of interaction or observation data is often called as decoding. It may help in knowing what was going on inside the classroom, in terms of teacher's behaviour and classroom's interaction for communication. It has two broad aspects.

They are -

- Quantitative
- Qualitative

Quantitative Analysis of Teacher Behaviour: It can be based on the following aspects

- Interaction categories
- Areas of interaction
- Behaviour ratios
- Interaction variables

The classroom teaching or classroom communication has two types of interactions and they are-

- Verbal interaction
- Non-verbal interaction

There are several techniques, which have been devised to study and analyse the classroom's verbal interaction. Number of studies have been conducted to analyse the classroom's verbal behaviour of teachers, even the norms have been developed for the verbal interaction of teaching at different levels. Flander has developed the Interaction Model of Teaching and seven models of verbal interaction, but non-verbal interaction has not been investigated so intensively and a very few techniques have been developed so far as the agents of classroom's teaching.

Qualitative Analysis of Teacher Behaviour: It is based on the following methods

- Clockwise flow diagrams.
- Box-flow diagrams.
- Interaction models of critical teaching behaviour.

Method of Clockwise Flow Diagrams: It provides a visual display of the chain of classroom interaction which may prove more acceptable for understanding the nature and structure of classroom verbal behaviour. Flow diagrams help in clarifying the sequence of events and making the matrix to be more understandable.

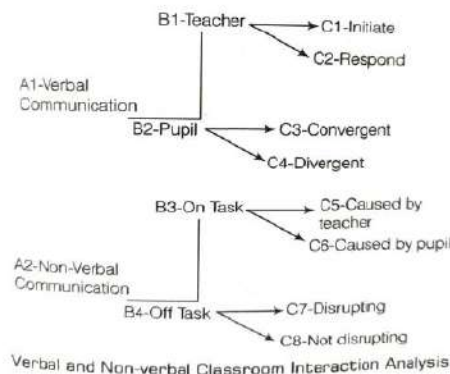
Method of Box-Flow Diagrams: In place of clockwise flow diagrams, Flanders suggested to draw box-like diagrams, which look a little less complicated and help more in understanding the nature and structure of verbal behaviour of the teacher.

Method of Interaction Models of Critical Teaching Behaviours: It has been defined by Flanders as a pattern of acts or interaction models that:

- are logically related to certain educational outcomes.
- follow a certain sequence with measurable probability. .
- seem crucial in terms of a theory of teacher influence verified by past research.

He has developed seven interaction models of critical thinking behaviour and they are

- High content emphasis under close-teacher direction.
- Teacher gives directions with some clarification.
- Teacher-directed quick drill.
- Drill combined with lecture demonstration,
- Stimulating independent student thought.
- Attending to student feelings.
- Teacher transitions from affective to an intellectual emphasis.

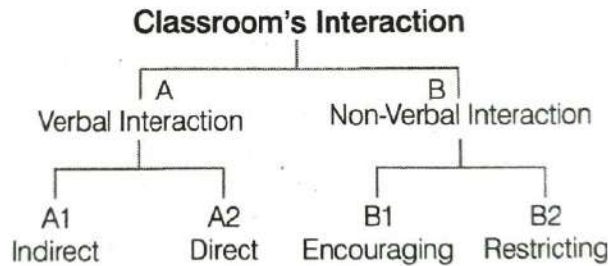


Galloway's System of Interaction Analysis

The system of Interaction Analysis was developed by Charles Galloway in the form of teachers' training technique. It is basically a category type system involving Categorisation of all sets of possible verbal and non-verbal behaviour of teachers in the classroom while interacting with students. If teachers are to become more effective in the classroom, they become attentive, not only to what they are communicating, but also to how they are communicating. They need to know the importance of verbal and non-verbal, in their classroom. The non-verbal behaviour often reflects their real feelings and students, but most of the teachers are not aware of what they are communicating non-verbally.

Galloway has developed the categories for non-verbal communication by incorporating Flander's Ten Category System. Thus, his system of observation is the combination of both verbal and non-verbal or classroom's communication as a whole

He has classified the classroom interaction into four components are :



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

Galloway's System of Observation	
Direct-Indirect (Verbal)	Encouraging-Restricting (Non-Verbal)
Accepts student's feelings	Acceptance or indifference
Praises or encourages	Congruent or incongruent
Uses student's ideas	Implement or perfunctory
Asks questions	Personal and impersonal
Lecturing gives information	Responsive and unresponsive
Giving directions	Involve or dismiss
Criticising or justifying authority	Receptive or attentive
Student's talk (Response)	Receptive or inattentive
Student's talk (Initiation)	Firm or harsh
Silence or confusion	Comfort or distress

Assumptions of Galloway's System

- Non-verbal communication of a teacher has a significant role in classroom interaction.
- As one cannot see when he/she behaves, feedback is necessary for the behavior.
- The non-verbal cues are important, as they can reinforce and can motivate a student.
- Non-verbal communication can be more effective during interaction in the classroom.
- Becoming aware of his non-verbal events occurring around us, one can achieve a better understanding of himself.
- Training of teachers enhances the aspect of non-verbal communication in teachers.
- The system is based upon the theory of modification of the teacher's behaviour.

Characteristics of Interaction Analysis Techniques

- It is an objective and scientific technique of classroom's objectives.
- The events which occur within a period of 3 seconds are recorded systematically.
- The structure of classroom behaviour and flow of events can be analysed and studied.
- The verbal interaction of classroom teaching is the true representative of classroom, verbal and non-verbal behaviour.
- It can be used as an observation technique for classroom's teaching in a teaching education programme. It is employed as a research tool for analysing and studying teaching.
- With the help of normative expectations of behaviour, it can also be used as an evaluatory device, though it is an exploratory device.
- The Interaction Analysis is used as a mechanism of feedback and device, for the modification of teacher's behaviour.
- It is also employed as a supplementary device, with other mechanisms of feedback devices. For example, micro-teaching and simulated social skill teaching for the modification of teacher's behaviour. .
- The technique may be helpful for developing theory of teaching, because the Interaction Model of Teaching is most popular.
- It functions as a measuring instrument classroom's teaching and serves prognostic and diagnostic functions.

Disadvantages of Interaction Analysis Technique

- The Interaction Analysis technique is used for observing verbal behaviour of classroom's teaching, while non-verbal behaviour is equally important.
- All the classroom's teaching activities encoded forcibly into ten categories. Thus, it narrows the structures of teaching behaviour.
- It has several categories for teachers and two categories for pupil, out of ten categories. Hence, there is no balance in the teachers and pupil's categories.
- This technique does not provide any information about the quality of content. It is content free technique of observation. It confines only to verbal communication of teaching
- It encodes an occurrence of a particular activity, but does not consider its intensity. Teaching effectiveness concerns the force and intensity of teaching events.
- It records the actions of teacher and pupil, but does not encode their reactions,

Criteria for Teacher's Evaluation

The term evaluation, as reflected through its naming, stands for the evaluation of teachers, in terms of the quality of their roles, played as a teacher. It means the extent to which they may be judged as good or poor in fulfilling their duties and obligations. The term teacher's evaluation can be defined as a process of helping the evaluators, to draw inferences or pass judgement over the effectiveness of a teacher, in terms of his/her, like behavior and abilities demonstrable through

his performance, leading to an all round growth and development of the personality of the students, under his charge.

Now, the question arises what should be commonly agreed upon criteria for the evaluation of a teacher. The **Encyclopaedia of Education** (Deighn, 1971) has tried to classify the criteria of teacher's evaluation into three categories, such as product criteria, process criteria and presage criteria.

They can be explained as follows-

Product Criteria

According to this criteria, the evaluation of the teachers can be made by passing judgement over the gains, achieved in terms of growth and development or changes in the behavior of the students. In other words, from the extent to which a teacher is able to help his/her students in the realization of the set teaching-learning objectives, he is said to be a competent or effective teacher.

Under the product criteria, the evaluation of a teacher's work must be made through the nature of the end results of his effort, it means the gains achieved in terms of the pupil's growth and development or the desirable changes in their behavior.

Process Criteria

Under this criteria, a teacher needs to be evaluated in terms of the nature of the quality of his efforts, made for the realisation of the set teaching-learning objectives, irrespective of the products i.e. student's gains, student's growth and student's changes. This criteria rests on the very assumption that the process chosen or the efforts made are substantial and important than the outcomes achieved. Therefore, what goes at the time of ongoing teaching-learning process, in terms of the typical situations, involving classroom's conditions and interaction of students and teachers and the teaching competencies and skills demonstrated by the teacher, thus, may be adjudged as various criteria for teacher's evaluation.

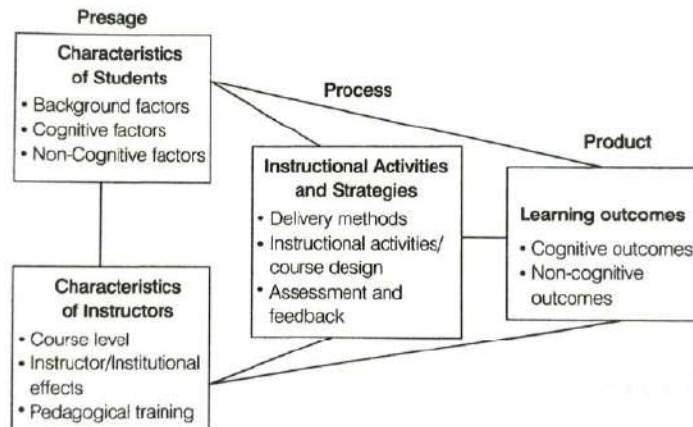
It can be said that when a teacher's evaluation is based upon the classroom's behavior, either the teacher's behavior, his student's behavior or the interplay of teacher-student's behavior, the judge is using process criteria.

Presage Criteria

This criteria neither tries to evaluate the ends of the teaching-learning process, like product criteria, nor lay emphasis on the nature of the means, like process criteria, for the evaluation of the teachers. On the other hand, the presage criteria tries to focus on the evaluation of the total nature, qualities and characteristics of that very source (the teacher) responsible for carrying out, both the means and the ends, through his efforts.

It may involve the personality attributes of the teachers, the number of years of experience, academic and professional qualification, aptitude for teaching interest, attitude towards teaching,

personal and professional adjustment, knowledge of the subject, growth in basic skills of student taught, job satisfaction, etc. These criteria are at best an indirect measure of a teacher's effectiveness and are normally chosen, because they are related to and therefore, predict, either process or product criteria.



Criteria for Teacher's Evaluation

The product, process and presage criteria, forms the backbone of taking decisions about the methods and techniques to be employed for the evaluation of teachers. Each of these criteria has its own merits and limitations for being used as a yardstick for the assessment of the goodness and effectiveness of a teacher, working at any stage of the school or higher education. It is useful to employ an Integrated Approach of evaluation. Let us see how far we can integrate these criteria.

- The results of the house tests, monthly, terminal and annual examinations of the school, board and other accreditation agencies, showing academic achievements of the students, taught by the teachers.
- The results of the performance shown by the students in sports, constructive and creative activities, curricular and other fields are attributable to the efforts made by the teachers.
- The change in attitude, interests, philosophy of life and overall growth and development in the personality of the students, measured through special means and devices in terms of behavioral changes, brought about by the efforts and influences of particular teachers.
- The use of the properly constructed rating scales, for rating the overall performance, teacher's behavior and personality characteristics of the teacher by the teachers, themselves, their colleagues, head of the institutions, supervisors, students, etc.
- The use of the questionnaire, inventory, etc., for collecting information about the product, process and presage variables of teacher effectiveness from teachers themselves, their colleagues, students, heads of the institutions, supervisors, etc.
- The information received through self-assessment appraisal performa filled in by the teachers, themselves. or
- The record of the inspection committee and other day to day supervision work.
- The overall impressions, likings and dislikings, expressed by the students, about their teachers, in terms of their respective personality, characteristics and behavior,

- The assessment of teaching competency by employing proper tools and techniques, like teaching competency scale, developed by **B K Passi and Lalita** (Indore).
- The observation and assessment of the teacher's classroom's behavior, through special techniques, like Flander's Interaction Analysis,

Rubrics

In education terminology, Rubric means a scoring guide, used to evaluate the quality of student's constructed responses. Usually, rubrics contain evaluative criteria, quality definition 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. The main purpose of rubrics is to assess performance. The genius of rubrics is that they are descriptive and not evaluative. Rubrics give structure observations. Matching the observations of a student's work to the descriptions in the rubric averts the rush to judgement that can occur in classroom evaluation situations. Effective rubrics have appropriate criteria and well-written description of performance.

Wiggins said that a rubric contains a scale of possible points, to be assigned in scoring on a continuum of quality. High numbers are usually assigned to the best performances. Moreover, a rubric provides descriptors, for each level of performance, to enable more reliable and unbiased scoring. Rubric's assessment is itself valid and reliable, when proper descriptors are formulated because descriptors contain criteria, which often refer to standards. According to Arthur and McTighe, "Rubric is a set of general criteria, used to evaluate a student's performance, in a given outcome area". Rubrics consist of a fixed measurement scale and list of criteria that describes the characteristics of product and performance for each score point.

Types of Rubrics

Rubrics for scoring constructed responses have two general categories i.e. analytic scoring rubrics and holistic scoring rubrics.

They can be explained as follows:

Analytic Scoring Rubric It requires that the teacher identifies the important aspect of a good solution and then assigns points to each aspect.

Holistic Scoring Rubric It requires that the teachers must determine the overall quality of the constructed response. According to Nikto (1996), the holistic scoring rubric could be extended to include comments and this creates another rubric type as annotated holistic rubric. The holistic rubric rates or scores the product or the process as a whole, without first scoring parts or components, separately. The analytic rubric rate or score separate parts or characteristics of the product or the process first and then sum these part scores to obtain a total score.

In an annotated holistic scoring rubric, rater uses a holistic rating first and then they rate or describe as few characteristics that are strengths and weaknesses, to support their holistic

ratings. Using an analytic scoring rubric is a more time consuming task, since the rater has to look for and separately rate each component of a performance.

Rubrics can also help teachers, analyze and describe student's responses to complex tasks and determine student's level of proficiency. Rubrics give students more specific criteria detailing, what is expected and what constitutes a complete response.

According to **Meier** (2006), in a study reported by him, in which a rubric for self-assess and peer-assess, mathematical problem-solving, where middle school teachers used rubrics for 8th grade students, non-traditional mathematical tasks. The teachers used analytic scoring rubrics that outlined three categories i.e. mathematical knowledge, strategic knowledge and explanation. Using rubrics, have some benefits for providing feedback, grading or assessing, namely rubrics create a focus on instr and learning. It improves the clarity of the feedback, provided to students, students get a clear description of their strengths and weaknesses. On to score

Rubric characterizes the desired results/products of a student's work, objectively. They give students clear instructions about the instructor's expectations for an assignment. Students can use rubrics to assess their own work, they can have a better idea about whether they are meeting expectations, before they submit their work for formal evaluation thus, rubrics develop competence in self-evaluation. It engages students in the learning process, when students can describe exactly what is expected of them, they may be more strongly motivated to work to meet the expectations.

Steps for Constructing Rubrics

A good rubric needs to be designed with care and precision, in order to truly help teachers, distribute and receive the expected work. The following six steps will help you, when you decide to use a rubric for assessing an essay, a project, group work, or any other task that does not have a clear right or wrong answer.

They are-

Step 1: Define Your Goal

Before you can create a rubric, you need to decide the type of rubric you would like to use, and that will largely be determined by your goals for the assessment. Ask yourself the following questions

- How detailed do I want my feedback to be?
- How do I want to assess performance?
- How will I break down my expectations for this project?
- Are all of the tasks equally important?
- What standards must the students hit, in order to achieve acceptable or exceptional performance?
- Do I want to give one final grade on the project or a cluster of smaller grades, based on several criterias?
- Am I grading, based on the work or on participation? or Am I grading on both?

- Once you've figured out how detailed you'd like the rubric to be and the goals you are trying to reach, you can choose a type of rubric.

Step 2: Choose a Rubric Type

Although there are many variations of rubrics, it can be helpful to at least have a standard set to help you decide where to start. Here are two types of rubrics that are widely used in teaching as defined by DePaul, University's Graduate in Educational Department.

The analytic rubric is the standard grid rubric that many teachers routinely use to assess students' work. This is the optimal rubric for providing clear and detailed feedback. With an analytic rubric, criteria for the students' work is listed in the left column and performance levels are listed across the top. The squares inside the grid will typically contain the specs for each level.

A rubric for an essay, for example, might contain criteria like Organization, support, and focus and may contain performance levels like exceptional, satisfactory, developing and unsatisfactory. The performance levels are typically, given percentage points or letter grades and a final grade is

typically calculated at the end. The scoring rubrics for the ACT and SAT are designed this way, although when students take them, they will receive a holistic score.

The holistic rubric is much easier to create, but much more difficult to use accurately. Typically, a teacher provides a series of letter grades or a range of numbers (1-4 or 1-6, for example) and then assigns expectations for each of those scores. When grading, the teacher matches the student's work in it's entirety to a single description on the scale. This is useful for grading multiple essays, but it does not leave room for detailed feedback on student's work

Step 3: Determine Your Criteria

This is where the learning objectives for your unit of course come into play. Here, you'll need to brainstorm a list of knowledge and skills, you would like to assess for the project. Group them, according to similarities and get rid of anything that is not absolutely critical. A rubric with too much criteria is difficult to use. Try to stick with 4-7 specific subjects, for which you'll be able to create an unambiguous, measurable expectations in the performance levels. You'll want to be able to spot the criteria, quickly while grading and be able to explain them, quickly when instructing your students. In an analytic rubric, the criteria are typically listed along the left column.

Step 4: Create Your Performance Levels

Once you have determined the broad levels you would like students to demonstrate mastery of, you will need to figure out what type of scores you will assign based on each level of mastery. Most rating scales include between three and five levels. Some teachers use a combination of numbers and labels like (4) Exceptional, (3) Satisfactory, etc, while other teachers simply assign numbers, percentages, letter grades or any combination of the three for each level. You can arrange them from highest to lowest or lowest to highest as long as your levels are organised and easy to understand

Step 5: Write Descriptors for Each Level of Your Rubric

This is probably your most difficult step in creating a rubric. Here, you will need to write short statements of your expectations, underneath each performance level for every single criteria. The descriptions should be specific and measurable. The language should be parallel to help with student's comprehension and the degree to which the standards are met should be explained.

Step 6: Revise Your Rubric

After creating the descriptive language for all of the levels (making sure it is parallel, specific and measurable), you need to go back through and limit your rubric to a single page. Too many parameters will be difficult to assess at once, and may an ineffective way to assess students' mastery of a specific standard.

Consider the effectiveness of the rubric, asking for student's understanding and co-teacher's feedback, before moving forward. Do not be afraid to revise as necessary. It may even be helpful to grade a sample project, in order to gauge the effectiveness of your rubric. You can always adjust the rubric, if need before handing it out, but once it is distributed, it will difficult to retract.

Before creating the rubric grid, a tester needs to

- build a full range of skills and knowledge with clear indication of each level of performance.
- plan them in a grid.
- share the rubric with students.
- make it visible at all times on a bulletin board or distributed in a handout, to direct attention to the key concepts and standards, students must meet.
- finally, apply it and consider if any revision or modification is required to apply to more activities.