TEACHING APPTITUDE

DSSC501

Edited by:
Aashish Sharma
Karan Thakur

LOVELY PROFESSIONAL UNIVERSITY

TEACHING APPTITUDE

Edited By

Karan Thakur
Aashish Sharma

CONTENTS

Unit 1: Teaching 1

Harish Mittu, Lovely Professional University

Unit 2: Adolescent Learner's characteristics-I 8

Harish Mittu, Lovely Professional University

Unit 3: Adolescent Learner's characteristics-II 16

Harish Mittu, Lovely Professional University

Unit 4: Adult Learner's characteristics 25

Harish Mittu, Lovely Professional University

Unit 5: Adult Learner's characteristics-II 35

Harish Mittu, Lovely Professional University

Unit 6: Individual Differences 43

Harish Mittu, Lovely Professional University

Unit 7: Factors affecting Teaching 50

Harish Mittu, Lovely Professional University

Unit 8: Methods of teaching 59

Harish Mittu, Lovely Professional University

Unit 9: Methods of teaching-II 65

Harish Mittu, Lovely Professional University

Unit 10: Teaching support system-I 73

Harish Mittu, Lovely Professional University

Unit 11: Teaching support system-II 78

Harish Mittu, Lovely Professional University

Unit 12: Evaluation systems II 83

Harish Mittu, Lovely Professional University

Unit 13: Evaluation systems-II 90

Harish Mittu, Lovely Professional University

Unit 14: Innovations in evaluation systems: 95

Harish Mittu, Lovely Professional University

DSSC501 TEACHING APPTITUDE

Sr. No.	Content
Unit 1	**Teaching**: Concept of Teaching, Objectives of Teaching, Levels of Teaching Characteristics of Teaching, Basic requirements of Teaching
Unit 2	**Adolescent Learner's characteristics-I:** Academic characteristics of adolescent learners, Social characteristics of adolescent learners
Unit 3	**Adolescent Learner's characteristics-II:** Emotional characteristics of adolescent learners, Cognitive characteristics of adolescent learners
Unit 4	**Adult Learner's characteristics-I:** Academic and social characteristics of adult learners, Social characteristics of adult learners
Unit 5	**Adult Learner's characteristics-II:** Emotional characteristics of adult learners Cognitive characteristics of adult learners
Unit 6	**Individual Differences:** Meaning and definition individual differences, Types individual differences, Causes of individual differences
Unit 7	**Factors affecting Teaching:** Teacher and learner, Support material, Instructional facilities, Learning environment, Institution
Unit 8	**Methods of teaching-I:** Methods of teaching in institutions of higher learning Teacher centred methods, Learner centred methods
Unit 9	**Methods of teaching-II:** Off-line methods and On-line methods
Unit 10	**Teaching support system-I:** Traditional support system, Modern support system
Unit 11	**Teaching support system-II:** ICT based support system
Unit 12	**Evaluation systems-II** Elements of evaluation, Types of evaluation
Unit 13	**Evaluation systems-II**: Evaluation in choice based credit system in higher education, Computer based testing
Unit 14	**Innovations in evaluation systems:** Concept map and test, e-portfolio, podcast and vlog, Talk show performance, minute paper, artificial intelligence and assessment rubrics

Unit 01: Teaching

CONTENTS

Objectives
Introduction
1.1 Concept of Teaching
1.2 Objectives of Teaching
1.3 Levels of Teaching
1.4 Characteristics of Teaching
1.5 Basic Requirements of Teaching
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Reading

Objectives

After studying this unit, you will be able to:

- understand and explain the meaning of aptitude, teaching aptitude, and teaching,
- elaborate the objectives of teaching,
- plan appropriate content for teaching at the memory, understanding, and reflective level of teaching,
- employ various methods of teaching and analyze the role of teacher and learner at the memory, understanding, and reflective level,
- use appropriate strategies to evaluate teaching at the memory, understanding, and reflective level,
- tabulate the differences among different levels of teachings,
- analyze the various characteristics and roles of basic requirements of teaching.

Introduction

Meaning of Aptitude

Aptitude is a pattern of traits deemed to indicate an individual's potentialities.

Aptitude means an individual's ability to acquire, i.e., an individual's genuine absorption in work and a satisfactory level of competence.

Aptitude is also informed about an individual's ability to attain the precise behavioral pattern of interest, knowledge, and skill.

An individual's future success in any field, course or training program has been predicted with the knowledge of his/her Aptitude.

Therefore, Aptitude refers to the extent to which an individual acquires a set of qualities under suitable training.

Meaning of Teaching Aptitude

Teaching aptitude is the ability to attain expertise in the teaching profession with training.

It refers to the ability of an individual to be skilled in teaching by receiving training i.e., formal or informal training.

In short, Teaching Aptitude is a measure to predict the future success of an individual in the teaching profession after providing appropriate opportunities and rigorous training.

1.1 Concept of Teaching

Teaching is considered a set of events designed to support an internal process of learning. As learning is internal to the learner, therefore, teaching is external to the learner. So, there is a requirement of external motivation to the learner for attending teaching.

Teaching is one of the crucial instruments of education. The primary and essential function of teaching is to impart understanding, skill and make learning effective. The successful learning process is the byproduct of effective teaching.

Teaching is a social and cultural process. It enables an individual to learn something in his/her life.

The process of teaching includes instructions from an individual to other individuals.

Teaching is an act of imparting instructions from a mature person (teacher) to an immature person (students) in the teaching-learning situations for the development and betterment of the student.

Definition of Teaching

According to Dewey - Teaching is the manipulation of situations where students will attain insight and skills through their initiations and efforts.

According to Morrison -Teaching is intimate contact between a more mature personality and a less mature one.

According to Jackson -Teaching is a face-to-face encounter between two or more persons, one of whom (teacher) intends to effect specific changes in the other participants (students).

Hough and Duncan analyzed and described the organizational aspect of teaching. They believe that the teaching process includes - a curriculum, planning phase, an instructing phase, and an evaluating phase.

Gage put forth the definition of teaching from a democratic point of view.

Gage states that, as an interpersonal influence, teaching focused on modifying the behavior potential of another individual.

According to John Brubacher - Teaching is the arrangement and manipulation of a situation in which there are gaps or obstructions which an individual will seek to overcome and from which he will learn in the course of doing so.

According to Edmund Amidon – Teaching is an interactive process, primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activities.

According to B.O. Smith - Teaching is a system of actions intended to induce learning. Teaching is a system of actions involving an agent, an end in view, and a situation including two sets of factors those over which the agent has no control (class size, characteristics of pupils, physical facilities, etc.) and those which he can modify such as techniques and strategies of teaching.

According to Davis et al., Gagne et al., and Gage - Teaching is a scientific process, and its major components are content, communication, and feedback. The teaching strategy has a positive effect on student learning.

According to Robertson - Teaching is a generic term that denotes actions undertaken to bring about learning in another.

According to the International Encyclopedia of Teaching and Teacher Education- Teaching may be considered as a success, intentional activity, and normative behaviour.

a) Teaching as success signifies that learning is implicated in teaching. Teaching entails learning and can be defined as an activity that necessarily affects learning.

b) Teaching as an intentional activity means that teaching may not logically imply learning, but it can be anticipated that will result in learning.

c) Teaching as normative behaviour denotes action undertaken to bring about learning another.

We can also define the term teaching according to the following three points of view:

(a) Authoritarian

(b) Democratic

(c) Laissez-faire

Authoritarian point of view advocates that teaching is a memory level and thoughtless activity, teacher-centric, and does not develop attitude and thoughts among students.

Democratic point of view advocates that teaching is done at an understanding level but only after acquiring the pre-requisite of the teaching process, i.e., memory level teaching. Teaching is a thoughtful activity andis an effective interaction between teacher and students basically in classroom situations.

Laissez-Faire point of view advocates that teaching is incredibly thoughtful activity leads to insight among students,considered at the reflective level, which is complicated than the memory and understanding level of teaching,executed at a reflective level after attaining the memory and understanding level of the teaching process, andbased on the equal as well asthe active involvement of teachers and students.

Continuums of Teaching

There are four important continuums or modes of teaching i.e., conditioning (shaping behaviour and habits), instruction (communication of knowledge), indoctrination (the formation of belief), and training (shaping conduct and skills). Therefore, teaching is the progress from shaping behaviour and habits (i.e., conditioning) to the formation of belief (i.e., indoctrination).

These four continuums of teaching i.e., conditioning, instruction, indoctrination, and training are related to each other but different from one another.

The difference of teaching with four important continuums of teaching is tabulated below:

Difference between Conditioning and Teaching

Sr. No.	Conditioning	Teaching
1	It is the modification of behavior and learning habits.	It is the development of potential and intellect.
2	It is narrow in scope.	It is broader in scope.
3	Reinforcement is necessary for conditioning.	Reinforcement is not necessary for teaching.
4	Repetition of behavior to be acquired in conditioning.	Repetition of the taught subject matter is not necessary for teaching.
5	The curriculum is fixed in conditioning.	The curriculum is very comprehensive in teaching.
6	In conditioning, the evaluation is based on the acquisition of a behavior or a habit.	In teaching, the evaluation is done by qualitative and quantitative techniques.
7	Conditioning is the lowest level of the entire process of teaching.	Teaching is the broader process that includes various levels.

Difference between Instruction and Teaching

Sr. No.	Instruction	Teaching
1	The scope of instruction is narrow and limited.	The scope of teaching is wide.
2	Instruction is always formal.	Teaching is both formal and informal.
3	Instruction is a part of teaching.	Teaching includes instruction.
4	Instruction imparts knowledge of specific subjects.	Teaching focuses on the development of the potential of an individual.
5	Instruction generally confined to the classroom.	Teaching is imparted in school, library, political group, etc.

Difference between Indoctrination and Teaching

Sr. No.	Indoctrination	Teaching
1	Its scope is very narrow.	Its scope is broad.
2	It changes some beliefs and attitudesof the learner.	It develops the potential of the learner.
3	It suggests only one solution to the problem.	It suggests multiple solutions to the same problem.
4	There is no freedom for the child to learn.	There is freedom for the child to learn.
5	It advocates very rigid discipline.	It advocates democratic & social discipline.

Difference between Training and Teaching

Sr. No.	Training	Teaching
1	It is practical and concrete.	It is theoretical and abstract.
2	It aims at doing or action.	It aims at understanding.
3	The context is specific in training.	The context is independent in teaching.
4	Training is short-term or immediate.	Teaching is long-term or unlimited.
5	Resources are provided to learners in training.	Resources are self-initiated by the learners in teaching.

Structure of Teaching

According to Davis and Glaser, the structure of teaching includes the following important four components i.e., **Planning of teaching, Organization of teaching, Identification of teaching-learning strategies,** and **Managing teaching-learning**.

1. **Planning of teaching** includes content analysis, identification, and writing of objectives.
2. **Organization of teaching** includes the teaching strategies for achieving the objectives of teaching.
3. **Identification of suitable teaching-learning strategies** guides the teacher for effective communication of content.
4. In **managing teaching-learning**, the teacher focuses on the assessment of the learning objectives in terms of student performance. This assessment of the learning objectives forms the basis of feedback to the teacher and students.

1.2 Objectives of Teaching

The various objectives of teaching are as follows:

- To bring desirable changes among the students.
- To bring desirable changes in the attitude of students.
- To shape the conduct and behavior of students.
- To provide a situation where students should acquire the knowledge.
- To upgrade the learning skills of students.
- To develop belief among students.
- To make students more socialized.
- To make students efficient members of society.

1.3 Levels of Teaching

As we knew that the teaching process is an interaction between teacher and students. The interaction between teachers and students can happen at three levels of teaching. These three levels of teaching, as identified by the educationists and psychologists, are memory level, understand level, and reflective level. These three levels of teaching are ranging from least thoughtful (memory) to most thoughtful (reflective) level.

If the three levels of teaching are arranged based on the amount of involvement of the thoughtful behavior of the learner, then the memory level of teaching is least thoughtful, the understanding level of teaching is moderator thoughtful, and the reflective level of teaching is most thoughtful.

If the three levels of teaching are arranged in hierarchical order, then the memory level of teaching is at the bottom, the understanding level of teaching is in between, and the reflective level of teaching is at the top.

Memory Level

Meaning

The memory level of teaching is supported by Herbart. The learners' thinking and reasoning powers are least involved in the memory level of teaching. Therefore, the memory of the learner playsa significant role in this level of teaching.

The students memorize the factual knowledge presented by the teacher without understanding its meaning and application. It involves learning, retention, and reproduction of material when asked. The focus of teaching at the memory level is only the provision of textbook knowledge to students. In the memory level of teaching, more importance is given to memorization and less importance on learning. This level of teaching enhanced the memory of the learner. It is not an excellent level of teaching because an understanding of the concepts is more important than mere memorization of the concepts.

Definition

The memory level of teaching is a level where there is only the memorization of factual informationby students. The learner gets the information stored in his/her long-term memory.

Psychological Theories

The various psychological theories associated with memory level of teaching are given below:

Theory of Mental Discipline

In this theory, exercise, repetition, and practice have been used to discipline the faculty of memorization.

Theory of Apperception

This theory is proposed by Herbart. Therefore, it is also known as the Herbartian theory of apperception. This theory emphasized that a large factual knowledge should be implantation in the minds of the learners through the process of mechanical memorization.

Thorndike's Connectionism Theory

It emphasizes the establishment of Stimulus-Response (S-R) through memorization and the law of exercise for learning.

Conditioning Theory

This theory is influenced by classical and operant theories. According to this theory, the task of habit formation is completed through repetition by stimulus and response association.

Objectives

1. To impart factual knowledge to learners.
2. To focus on the mechanical process of learning i.e. rote learning or memorization.
3. To covers knowledge-based objectives of Bloom's taxonomy only i.e., identification, recall and remembering, etc.
4. To achieve the knowledge objectives, the learner should use rote learning for acquiring the presented facts, retain the factual knowledge, and reproduce the acquired factual information through recall and recognition when required.

Aims

1. To train mental faculty.
2. To get factual knowledge or information.
3. To retain factual knowledge or information or learning material.
4. To recognize and reproduce the learned material or factual knowledge or information.

Subject Matter-Nature and Presentation

The subject matter is subject-centered, pre-planned, structured, and well organized.The teacher can use simple concepts, terms, and elements for teaching the learners, so, that there should be effective memorization of the presented material by the learner.The focus of the teacher is always on the quality of presented material and the way of presentation. The selection of the subject matter or material must be judicious so that learners get desirable knowledge of the subject matter.For proper retention and easy recall of subject matter, a teacher should give a systematic presentation of the subject matter in a definite and fixed order. To learn a new concept, no necessary association is required, on the part of the learners, with the previous knowledge of the learner.There is no link with the present and future application of the learned subject matter by the learner.

Role of Teacher

The teacher is the only authority, so, the authoritarian role is played by the teacher. The teacher is active and dominant in the teaching-learning process. The teacher solely takes the decision related to the selection of methodology to be used for the presentation of the subject matter.The teacher instructed learners to read, listen, memorize, exercise, and repeat the subject matter. In the memory level of teaching, a teacher puts more emphasis on rote learning by learners.

Role of Learner

The learners are passive in the memory level of teaching, so, they are inactive. They use their mind only as a large storehouse for storing information. They are the receiver of information. They learned the concept through the use of mere mechanical memorization. There is no freedom for learners to gain learning through experience and for self-initiatives. There is no scope for learner-teacher interaction. The learners' thought processes are least used in teaching-learning situations. It depends more on the memorization capacity of the learners. It has very little emphasis on the understanding of the concept by learners.

Teaching Material

The audio, visual, and audio-visual teaching materials are used at the memory level of teaching. The various charts, models (2D or 3D), maps, pictures, film strips, radio, TV, computer, etc. are few examples of teaching material used in the teaching-learning process at the memory level of teaching.

Nature of Motivation

The nature of motivation is external and not internal in the memory level of teaching. The learners have no genuine interest in learning and no spontaneous inclination towards learning. The learning is influenced by an external factor of fear and favour i.e., fear and favour of teachers.

Classroom Setup

Due to the lack of significant interaction between the learners and the teacher, the environment or setup of the classroom is dull, not interesting, and not challenging.

Teaching Methods

As the teaching at memory level is teacher-centered and dominated, therefore, the teaching methods used by teachers, here, are mostly teacher-centered, subject-centered, and not psychological, i.e. not as per the requirement of learners. The drill, review, revision, asking the questions from learners, etc. are mostly used by teachers in the teaching-learning process. Lecture method, deductive method, narration method, textbook reading method, use of black/whiteboard with lecture, etc. are few examples of teaching methods used by teachers at the memory level of teaching.

Assessment

The various assessment techniques used for evaluating the learning of the learners are oral tests, written tests, essay type questions, short answer type questions, objective type questions, recall type test, recognition type test, alternative type test, and match the column type test.

Advantages

1. Memory level teaching is suitable for younger learners.
2. It is useful for slow learners.
3. It helps the learners in learning a new concept.
4. It is helpful in the acquisition of facts and information.
5. Memory level teaching became the basis for understanding and reflective level of teaching.
6. It is helpful for understanding and reflective levels of learning.
7. In memory level teaching, there is full freedom to teachers for realizing their goals.

Disadvantages

1. Due to rote memorization, there is no scope for the development of understanding, thinking, reasoning, and other essential cognitive abilities among the learners.
2. Memory level teaching results in no practical use of learning for learners.
3. There is no guarantee of good retention, recall, and reproduction of memorized information among learners.
4. There is no chance of mechanical memorization being materialized fruitfully.
5. There is no scope for learners' personality development.
6. Teachers face various problems related to classroom management i.e., class control and learners' attention for classroom teaching or towards subject matter taught in class.

7. The external motivation factors i.e. the factor of Fear and favor are responsible for motivating learners towards learning.
8. The teaching-learning process is dull, uninteresting, and unchallenging.
9. It is not beneficial for learning in higher classes.
10. The learners are not intrinsically motivated for learning.
11. There is full dominance of teachers in the teaching-learning process.
12. The learners-teacher interaction level is extremely low in the classroom during the teaching process.
13. There is no chance of self-learning for learners.
14. There is no initiation for learners.
15. The learning of the learners is based on rote memory.

Suggestions

1. To make teaching meaningful and effective at the memory level, the following suggestions should be taken into consideration by the teachers during the teaching-learning process:
2. The teachers should use more meaningful and purposeful teaching material.
3. The teachers should use adequate and appropriate teaching-learning materials.
4. The teachers should use well-sequenced and integrated content or subject matter.
5. The teachers should follow continuous assessment for evaluating the learning of learners.
6. The teachers should spend more time on the exercise and drill works of learners.
7. The teachers should use the whole to the part method of teaching.
8. The teachers should spend more time on the repetition of the concepts.
9. The teachers should spend more time on practice and exercise of learners.
10. Memory level teaching should not be used by teachers at the time of mental and physical fatigue among learners.
11. The fixed-ratio schedule of reinforcement should be followed by the teachers.
12. The use of memory level teaching is done only to acquire knowledge.
13. The learning can be repeated in a rhythm for better and effective learning of the subject matter.

Model of Memory Level Teaching

Four important elements of the model of memory level teaching are Focus, Syntax, Social System, and Support System. These elements are discussed one by one as follows:

Focus

The focus of memory level teaching is to develop the mental aspects of training, providing knowledge of the facts, remember learning facts, and recall facts learned and resubmit them among learners.

Syntax

The syntax of memory level teaching includes the introduction, preparation, statement of purpose, presentation, comparison, the association, conclusions, and generalization related to content matter. At the last, the experiment and practice of the material learned by the learners in the class.

Social System

The social system of Memory Level Teaching describes that the teacher is more active and dominating in the classroom. It is the responsibility of the teacher to presents content in front of students or learners, controls their actions, and inspiresthem. Here, the learners have the accessory position. Learners are supposed to quietly follows the teacher, without asking any question, by assuming him or her an ideal one.

Support System

The support system of memory level teaching describes that both written and oraltypes of assessment or evaluation, of the learners,are done by the teachers. As the emphasis is on cramming, therefore, cramming ability of the learners is assessed in the tests. The recall and recognition abilities of the learners are also assessed because they are very important in the objective type examinations.

Understanding Level

The understanding level of teaching cannot succeed without the memory level of teaching. It is necessary for the understanding level of teaching that memory level of teaching has already been done.

At the understanding level of teaching, the teacher understands the generalization, regulations, and facts; and makes the learning process more meaningful and worthwhile.

Meaning

The understanding level of teaching is supported by Morrison. The understanding level of teaching is that level of teaching which requires the involvement of the learners' thoughtful behaviour at a moderator level.The learners' thought processes and cognitive abilities i.e., reasoning and thinking powers, power of imagination, analysis and synthesis, comparison and application, generalization and drawing inferences, etc. are used,in a reasonable amount, in the understanding level of teaching.

Definition

The understanding level of teaching is a level that seeks to acquaint learners with the relationship between a generalization and the particulars as well as Principles and solitary facts. It is a level that shows the use to which the principles may be applied.

In the words of Morris L. Wiggi, the understanding level of teaching seeing as relationship, the tool use of facts, and both relationship and tool use.

Characteristics

1. It helps the learners in generalizing the rules and principles from the acquired facts or information.
2. It helps the learners in identifying the relationship between the facts and principles generalized from the acquired facts or information.
3. It helps the learners to make use of the generalized rules and principles as a tool in acquiring new knowledge
4. It helps the learners in applying the generalized rules and principles in practical situations.

Psychological Theories

The Herbartian Theory of Apperception and Theory of Insight (Gestalt field Theory) are the two important psychological theories associated with the understanding level of teaching. These two psychological theories are briefly discussed below:

Herbartian Theory of Apperception

This theory advocated that a systematic presentation of subject matter is essentially required at the understanding level of teaching. The subject matter presented properly related to the previous knowledge of the learners.

Herbart suggested five steps of the teaching-learning process.

1. The first step is the preparation step. At this step, learners' previous knowledge is explored and the need for learning is established.
2. The second step is the systematic presentation. The teacher presents the subject matter systematically and relates them with the content learned by learners.
3. The comparison is done in the third step. Here, learners are supposed to identify the similarity and differences in the presented subject matter through comparison.
4. The fourth step is a generalization of the subject matter by learners. Learners make generalizations of the content in the form of facts, rules, and principles.
5. The fifth step is the application. The generalized facts, rules, and principles are supposed to apply or use by the learners in real life or practical situations.

Therefore, through the above five steps, learners understand, frame generalized principles, use generalized principles in acquiring new knowledge and their practical application in real-life situations.

Theory of Insight (Gestalt field Theory)

It states that insight occurs in learning only when learners recognize relationships that can help them in solving new problems of real life.

Therefore, it involves the perception of the situation as a whole, identification of the relationship, and development of generalized insight among learners. As a result, learners can solve their real-life problems.

The various objectives of the understanding level teaching are given below:

Knowledge Objective

To acquire required factual information or facts.

Understanding Objectives

1. To establish the relationship between acquired facts.
2. To comprehend the meaning of acquired facts.
3. To identify the similarities and dissimilarities among acquired facts.
4. To draw generalizations from the specific facts.

ApplicationObjectives

1. To apply the generalized principles for learning new facts.
2. To apply the generalized principles in solving practical problems or real-life situations.

Subject Matter-Nature and Presentation

The subject matter is well structured i.e., the subject matter is properly planned, organized, presented, and focuses on the meaningful learning of the learners. It must be linked with previous knowledge of the learners with its utilization for acquiring new facts and application to real-life situations.

Role of Teacher

The teacher's role is authoritarian and dominant at the understanding level of teaching. Here, the teaching is subject-centered. Therefore, the teacher has to pay complete attention to the presentation of the subject matter. The teacher presents the subject matter to the learners in such a way that the learner acquired the desired understanding objectives. The teacher instructs the learners to gain full mastery over the subject matter, develop a full understanding and generalized insight.

Role of Learner

The teacher has major control over the teaching-learning process but the learner plays a somewhat active role here. The learners use their minds in acquiring a desired understanding of the learned concepts or facts. The teacher sets various objectives of teaching for the learners. The learner act and interact with the framework set up by the teacher to realize the objectives.

Teaching Material

The audio, visual, and audio-visual teaching materials are used at the understanding level of teaching. The various charts, models (2D or 3D), flashcards, pictures, TV, and other electronic devices are examples of teaching material used in the teaching-learning process at the understanding level of teaching.

Nature of Motivation

As we know that there is always a purpose involved in the understanding level of teaching but still the learners are extrinsically motivated by the teacher. The learners are asked by the teacher to learn. As a result, the internal forces of the learners insist on them to learn.

Classroom Setup

The environment or setup of the classroom is disciplined, lively, and encouraging for the learners to understand the various facts and concepts.

Teaching Methods

The teaching methods like analytic and synthetic, discussion method, exemplification method, explanation method, inductive and deduction method, lecture cum demonstration method, and

question-answer method at the understanding level helps in realizing both understanding and knowledge objectives simultaneously.

Assessment

There is a need for more comprehensive evaluation at the understanding level of teaching. The testing of recall, recognizing ability, motor skills, abilities like analysis, synthesis, induction, deduction, explanation, demonstration, generalization, and ability to use the learned principles by learners in solving the problems of practical nature is done with the help of oral tests, written tests, practical tests, and short answer type questions.

Transfer of learning

As the understanding level of the teaching-learning process is more focused on seeing the relationship between the facts and acquired insight in the form of generalized rules, principles, and theories, therefore, there is a great opportunity for the learners to transfer the acquired learning from one to another situation in an effective manner.

Advantages

1. It helps the learners in the acquisition of the information more effectively and its retention for a longer period.
2. It is useful in the acquisition and interpretation of new facts.
3. It is useful in problematic situations outside the formal setting.
4. It helps in effective learning.
5. It works as a base in setting the stage for entering into reflective level teaching.
6. It facilitates the learners in getting opportunities for the development of their cognitive abilities.
7. It equips the learner with a mental kit of rules and principles.
8. It helps in creating a proper environment for effective classroom teaching.

Disadvantages

1. The teaching-learning process is More or less teacher-centered and subject-centered.
2. The motivation, for the learners to learn, is extrinsic.
3. It ignores higher cognitive abilities because the outcome of the learning related to specific knowledge and skills acquired is always viewed as fixed specific responses and through mechanized repetition and drill respectively.
4. There is no scope for individualized learning.
5. It is not successful in developing higher cognitive abilities like creativity, independent problem-solving abilities among learners.
6. There is less freedom for learners for independent thinking, discovery, and problem-solving.

Suggestions

1. To make teaching meaningful and effective at the understanding level, the following suggestions should be taken into consideration by the teachers during the teaching-learning process:
2. The behavior of teachers towards learners should be sympathetic.
3. The necessary independence should be given to learners.
4. The teacher should organize the content matter before presenting it to the learners.
5. The teaching at the understanding level should always be arranged after the memory level**.**
6. The teacher should complete every step in a sequenced manner.
7. The teacher should motivate the learners.
8. The teacher should develop a congenial classroom environment for teaching-learning.
9. The teacher should put their efforts to expand the aspiration level of learners.
10. The teacher should select and use effective methods of teaching.
11. The teacher should work for the meaningfulness in the content matter for effective learning among learners.
12. The teacher should give due importance to solve the problems of the learners.
13. The teacher should facilitate and provide opportunities to the learners for effective classroom interaction.
14. The teacher should prepare or select and use teaching aids for effective learning of the learners.

Model of Understanding Level Teaching

Four important elements of the model of understanding level teaching are Focus, Syntax, Social System, and Support System. These elements are discussed one by one as follows:

Focus

The focus of understanding level teaching is to develop the mastery of concepts among learners.

Syntax

The syntax of understanding level teaching comprises of the five stages of teaching i.e., exploration, presentation, assimilation, organization, and recitation.

Social System

The social system of understanding level teaching describes that the teacher is a behavior controller i.e., the teacher control and directs the behavior of the learners. Both the teacher and student remain active during the teaching-learning process. The learners have the opportunity to present their views in the class. Both the external and internal motivations are useful in the teaching-learning process. The teacher remains active in the first two steps of the social system while both the teacher and students remain active in the last three steps of this system.

Support System

The support system of understanding level teaching includes the written, oral, essay, and objective support methods of evaluation. The special emphasis is on the explanations of facts or concepts.

Reflective Level

After understanding the teaching at memory and understanding levels, it's time to understand the topmost level of teaching i.e. reflective level of teaching.

The reflective level of teaching is the highest level of teaching. It is necessary for the reflective level of teaching that memory and understanding level of teaching has already been done. The reflective level of teaching utilizes and enhances learners' cognitive abilities to the maximum.

Meaning

The reflective level of teaching is supported by Hunt. The learners reflect the existing ideas for more critical examination to drive new, valid and reliable conclusions. The learners have to ponder upon, contemplate, and pay serious thoughtful consideration to the presented subject matter. It uses higher mental processes like reasoning, imagination, thinking, etc.

Definition

In the words of Morris L. Bigge, it is a careful and critical examination of an idea in the light of the testable evidence which supports it and the further conclusions towards which it points.

Characteristics

1. The learners get an opportunity for close, careful, and critical examination of the existing facts, ideas, insights, and generalizations.
2. The learners get an opportunity for the testing of the existing facts, ideas, insights, and generalizations in the light of the relevant shreds of evidence.
3. The learners have the freedom to frame or set independent hypotheses, test those hypotheses and draw new conclusions for learning new facts and acquiring new insights.

Psychological Theories

Cognitive Field or Goal Insight Theory is the main source of the reflective level of teaching. In other words, the roots of the reflective level of teaching are in the Cognitive Field or Goal Insight Theory. A brief description of the Cognitive Field or Goal Insight Theory is given below:

Cognitive Field or Goal Insight Theory

Cognitive Field or Goal Insight Theory opposed the traditional mechanical memorization and meaningless understanding of facts. Its emphasis is on the purposeful, goal-directed, and insightful approach to learning. It facilitates the learners in learning the art and skill of problem-solving behavior by identifying their goals and problems. It orients and guides the learners in learning the

ways and means to solve the problem by using the scientific approach of learning. Its emphasis is on the learning of generalized insight, ways of discovering the facts and acquiring the skill of problem-solving.

Objectives

1. To develop insight, critical thinking, and rational thinking for learning reflectively among learners.
2. To develop the ability for using the learned facts and acquired insight for reflective learning among learners.
3. To facilitate the learners in preparing a large store of the tested insights of generalized form.
4. To enhance the ability of the learners in developing and solving problems at their initiatives.

Subject Matter-Nature and Presentation

In reflective level teaching, the subject matter is not in the structured form. It is open-ended like in problem-centered form i.e., problem raising and problem-solving form. The learners are supposed to work for finding the reasons behind the problem at hand. The learners put their full and honest efforts into the discovery of the solution to the problem at hand.

Role of Teacher

The teacher is very supportive and cooperative with the learners. The teacher facilitates the learners in learning and discovering by raising different problems, initiating mutual discussion and interactions, accepting critical reactions, motivating the learner for discovering the truth, and finding solutions to the problem independently. The teacher has more responsibilities in reflective level teaching. The teachers must have different personality characteristics/traits like reflective thinking, ingenuity, scholarship, persistence, open-mindedness, democratic leadership, etc.

Role of Learner

The learner is active in the teaching-learning process. The learner is active in terms of the use of his/her cognitive abilities and initiatives for problem raising and solving. The learner has to learn the skills and techniques of solving the problem independently by his/her efforts.

Nature of Motivation

Motivation in the learner is intrinsic. The various activities conducted at reflective level teaching are as per the felt need of the learner. The learner has the full freedom to reflect or present their views in the class. The learners are very much curious about getting in-depth knowledge and take initiatives to solve the problem. The learner is very much alive, original, excited, and critical in various activities of the teaching-learning process.

Classroom Setup

The classroom environment or setup is disciplined, lively, encouraging, exciting, and challenging in the reflective level teaching.

Teaching Methods

The teaching methods used are learner-centered which are focused on the need of solving a problem and discovering the ways or means to solve problems through the lively interaction between teacher and learners. Therefore, at the reflective level teaching, learner and problem-centered, experimental, discovery, investigating the project, creative assignment, problem-solving, inquiry-based, analytic, and heuristic methods are very useful methods of teaching.

Assessment

The focus of the reflective level teaching is to equip the learner with the power of independent discovery of facts, generalized insight, and application of learned principles in the solution of practical problems. Therefore, essay-type questions, open-ended questions, oral tests, written tests, and practical exams are the more appropriate assessment tools to assess the problem-solving ability, originality, and creativity of the learners. These tools also help in evaluating the quality of the solution proposed by the learners.

Advantages

1. It is learner-centered.
2. It is carried out at the most thoughtful level and involves higher cognitive abilities.
3. The learners have better opportunities for using cognitive abilities at reflecting level teaching.
4. It develops problem-solving abilities among learners.
5. It results in the development of the intellectual powers of learners.
6. The learners became independent problem shooters.
7. It is very useful for gifted learners.
8. There is very useful interaction between learners and teachers.
9. There is the development of the power of acquiring, analyzing, and discovering knowledge among learners.
10. It provides maximum flexibility in teaching-learning of all subjects.
11. It makes possible the maximum transfer of learning.
12. It is free from the rigid and rigorous organization of course material.
13. It helps in the proper development of creativity among the learners.

Disadvantages

1. It is not suitable for the lower classes.
2. There are chances of deviation from the learning path.
3. It is time-consuming.
4. There is time and energy wastage due to the deviation of learners from the learning path.
5. There is a burden on teachers in terms of their efforts for the teaching-learning process.
6. There are more efforts on the part of the teacher to gain mastery over the content, proper organization of classroom environment, and effective handling of the teaching-learning process.
7. It is not useful for average and below-average learners because it requires the development of the higher-order cognitive abilities of the learners.

Suggestions

1. To make teaching meaningful and effective at the reflective level, the following suggestions should be taken into consideration by the teachers during the teaching-learning process:
2. Before organizing teaching at the reflective level, teachers ensure that the learners acquire the knowledge of memory and understanding level.
3. While conducting teaching at the reflective level, every related step should be followed by the teacher during the teaching-learning process.
4. The teacher must create and maintain an adequate classroom environment for teaching at the reflective level.
5. The teacher should create a proper problem situation for learners.
6. The teacher should provide proper guidance to the learners.
7. The teacher should do a proper evaluation of the learners.
8. The learners should be encouraging for independent learning by teachers.
9. The aspiration level of teachers and learners should be high.
10. The teachers should have sympathy, love, and sensitivity for the learners.
11. The teachers should pay proper attention to the cognitive development of the learners.
12. There should be meaningfulness in content matter shared by the teachers with the learners.
13. The teacher should be capable of solving the problems of the learners.
14. There should be effective classroom interaction between the learners and the teachers.
15. The teacher should use teaching aids for the effective teaching-learning process.
16. There should be more opportunities for the learners to develop consideration and reasoning power.
17. The teachers should maintain a democratic learning environment in the classroom.
18. The teachers should motivate the learners for positive thinking.

Model of Reflective Level of Teaching

Four important elements of the model of reflective level teaching are Focus, Syntax, Social System, and Support System. These elements are discussed one by one as follows:

Focus

The focus of reflective level teaching is to develop fundamental and independent thinking power, consideration and reasoning power to solve problems, and capability in solving a problem among learners/students.

Syntax

The syntax of reflective level teaching has four steps.

a) creation of a difficult situation for learners,

b) creation of imagination among learners,

c) use maximum senses, meditate, and contemplate for the imagination of learners, and

d) test of imagination and problem-solving ability of learners.

Social System

The social system of reflective level teaching describes that there is an open and free classroom environment. The learners are active and self-motivated in the teaching-learning process. It acts as a base for the learner's socialization. The atmosphere of cooperation, social sensitivity, and sympathy has prevailed in reflective level teaching.

Support System

There is more emphasis on the written support in the support system of reflective level teaching. The written support is considered more useful. Various attempts have been made by the teachers for testing the aptitude, problem-solving ability, and creativeness of the learners.

1.4 Characteristics of Teaching

The various characteristics of teaching are described as follow:

Not Exact and Permanent

Teaching is not exact and permanent. It is a complete social process. The process of teaching is undertaken by and for society. With the change in social ideas, there is a change in society. Consequently, there is a change in the teaching process to fulfill the requirements of society. So, it is not easy to describe precisely and permanently teaching.

Information Focused

Teaching is information Focused. It helps students in getting knowledge about things. It is essential in the communication of knowledge from teachers to students.

Tri-polar Process

Teaching is a tri-polar process. It involves educational objectives, learning experiences, and behavior change.

Interactive Process

Teaching is an interactive process. It is not possible without interaction between students, teachers, and teaching materials. Interaction is essential for the development, guidance, and progress of the students.

Process of Development and Learning

Teaching is the process of development and learning. Students are exposed to a range of new learning experiences in terms of new skills, behavior, and knowledge when they work to attain their goals. As a result, there is overall development in students.

Modification in Behavior

Teaching is Modification in Behavior. The main focus of the teaching is to modify the students' behavior as per the requirements of society.

Teaching as an Art

Teaching is an exercise of talent and creativity. A teacher has to use various creative ways to make his/her teaching more enjoyable and practical. Therefore, teaching is an art.

Teaching as a Craft

Teaching is like a craft because it is a set of teaching skills to be learned through experience. Therefore, teaching is a craft.

Teaching as Science

In teaching, there is a use of more logical approaches, data collection related to students' learning, the scope for new experiments, application of new techniques and strategies, and exploring ways to make the learning process more effective. Therefore, it is a science.

Face-to-Face encounter

Teaching is a face-to-face encounter between the teachers and students in teaching. During this face-to-face instruction, teachers used to impart instructions to students and share knowledge with students for bringing specific and desired changes among students. It involves course content and learning material. There is live interaction between teacher and student. The learners benefit from a greater level of interaction with their fellow learners as well. It ensures a better understanding and a chance to bond between students and teachers.

Observable

Teaching is observable. Teaching includes teacher behavior, and behavior is observable.

Measurable

Teaching is measurable. There are various tools and techniques to measure teaching, like the Flanders Interaction Analysis and scales to measure teaching.

Modifiable

Teaching is modifiable. Based on the observation, measurement, and feedback, there is a scope to modify and improve the teaching for getting better results in the teaching-learning process.

Skilled Occupation

Teaching is a skilled occupation. It is expected from every teacher that they know general methods of teaching. Every successful teacher needs to practice various microteaching skills to become a skilled teacher.

Facilitates Learning

Teaching facilitates learning. It is a type of scaffolding. It involves motivating the students for reasoning, critical thinking, and understanding the learning process. Students are encouraged to question the happening around them, give their reflection, and guide them for their progressive development.

Conscious and an Unconscious Process

Teaching is both conscious and an unconscious process. At an unconscious level, it is incubation because sometimes insights occur after some intellectual process by the mind. Some learning requires a person to consciously attend to a problem that needs to be solved or analyzed.

Memory to Reflective Level

Teaching proceeds from memory level to reflective level. Teaching moves from memory level to reflective level. First, the student acquires knowledge and memorizes things. Slowly, the student starts understanding things. At last, the student starts reflecting on things through their opinions, responses, reasoning, etc.

Continuum of Training, Conditioning, Instruction, and Indoctrination

Teaching is a continuum of conditioning, training, instruction, and indoctrination. These all are part of teaching. The attainment of desired behavior is through conditioning. The development of skill

on knowing, how rather than knowing that is through training. Teaching follows training (formal, specific, and classroom setting) and teaching-related beliefs (indoctrination).

Democratic

Teaching is democratic. It respects the learners. It encourages learners to ask questions. In the teaching process, teachers give the answers to the various questions of learners and made discussions on various things with learners.

Cooperative

Teaching is a cooperative activity. The various classroom activities like organization, management, discussion, recitation, and evaluation are held in teaching.

Specialized Task

Teaching is a specialized task. It is a set of component skills and instructional objectives.

Stimulator

Teaching is a stimulator. It involves the power of thinking and self-learning on the part of the learners.

Professional

Teaching is a professional activity. It is a process of long and complicated training. An individual's official certification is done after the completion of training in teaching. The teachers focus on the harmonious development of the learners. It is a well-planned process. The teacher should decide the objectives, methods of teaching, evaluation techniques, suggesting not dictating; guidance, direction, and encourage the students. The teachers should be very kind and sympathetic to learners. A good teacher should develop emotional stability among learners and be ready to give remedial measures whenever learners required it. The teacher must solve the learning problems of students so that students must make adjustments in their future life comfortably.

1.5 Basic Requirements of Teaching

Teaching is a multisided interaction process and comprises many variables. It is related to the process of learning. The presence of learners is essential for carrying out the teaching because it can never be done in a vacuum. The suitable teaching-learning material, methods, devices, and teaching-learning environment facilitate the objectives of teaching.

Classification of Variables of Teaching

The variables of teaching are classified into three categories i.e., dependent (learner), independent (teacher), and intervening (interaction between teacher and learner).

Dependent Variables of Teaching

The learner is the dependent variable of teaching. As we know the learner is immature and the teacher is a mature individual in the teaching-learning process that is why the learner is dependent on the teacher. The whole teaching-learning process is controlled by the teacher. The learners are the followers of the teacher. The learners cooperate with the teacher to acquire maximum knowledge. The learner is subjected to changes and development in the teaching-learning process.

Independent Variables of Teaching

The teacher is the independent variable of teaching. The teacher is responsible for the role of learners. The teacher is free to act in the teaching-learning process. The teacher has full control of the teaching process. The teacher has mastery over the content matter and effective communication. The teacher'sactions are focused to bring the desired positive behavior modification in the learners. The teacher must know about the technology required for the teaching process. The teacher must be open-minded and progressive. In short, the teacher is an individual who influences the teaching environment.

Intervening Variables of Teaching

The focus of the intervening variables of teaching is the realization of teaching objectives. The intervening variables include subject matter, teaching methods, instructional material, teaching

environment, and goals of teaching. The intervening variables facilitate the interaction between dependent and independent variables.

Subject Matter

The subject matter of teaching is selected by teachers and learners. The subject matter is delivered by the teacher to the learners with the use of appropriate teaching material. The teacher can use science and technology to make the effective delivery of subject matter to the learners.

Environment

The teacher is the creator of the teaching environment in the class. Both teacher and learner are active in the teaching environment.

Functions of Teaching Variables

Teaching variables can perform three important functions i.e diagnostic, prescriptive, and evaluative function.

Diagnostic Function

In the teaching-learning process, the first step is to diagnose the learner's abilities to bring desirable changes in their behavior.

Role of Teacher

First, the entry behavior of the learners is diagnoses by the teacher. The analysis of the learners' cognitive, affective, and psychomotor abilities has done by the teacher. The teacher formulates the specific educational objectives. The teacher analyzes the available content, instructional material, and environmental facilities for carrying out the teaching-learning process. The teacher also assesses self-abilities. The teacher brings desired modification in self-behavior for the success of the teaching-learning process.

Role of Learner

The learners have to analyze their strengths & weakness in terms of tools of learning. These include their language and comprehension ability, expression and thinking ability, analysis ability, and psychomotor skills. The learners try to know about the behavior of the teacher, content, teaching methods, instructional material, and environmental facilities.

Prescriptive Function

The teacher has to prescribe the essential and adequate steps or actions to achieve the specific objectives. There must be an effective interaction between the learners and teacher to achieve the desired aims and objectives. The teacher needs to do the proper management of the intervening variables.

Role of Teacher

The teacher has to select the suitable content, organize the content into the correct sequence, use the appropriate teaching methods and use proper feedback devices. The teacher has to seek cooperation from the learners for making meaningful interactions during the teaching-learning process.

Role of Learner

The learner has to bring desirable modifications in their behavior based on the prescription made by the teacher. The learner has to give their best for purposeful and meaningful interactions during the teaching-learning process. The learner has to give their true cooperation to the teacher for exercising prescriptive functions.

Evaluative Functions

These functions relate to the evaluation of the progress and outcomes of the prescriptions. The prescriptions are in the form of the realization of objectives. At this level, the failure means the failure of the prescriptive functions may be due to improper diagnosis or prescription, or treatment.

Techniques of Evaluation

Tests, observations, interviews, rating scales, inventories, and projective techniques are the techniques of evaluation that help the teacher in the evaluative function.

Role of Teacher

The teacher remains less active in the evaluative functions. The teacher is acting as a facilitator to the learner. The teacher helps the learner in learning. The teacher evaluates the learner as an evaluator.

Role of Learner

The learner remains more active. The learner has to respond to the questions asked and the situation created by the teacher during the teaching-learning process. The learner has acted as the evaluator of self-progress based on the acquired abilities and desired behavior modification.

If the learner's behavior is improved as desired, then the learner has to go ahead. If there is no desirable improvement in the learner's behavior, then again diagnosis of entry behavior of the learner followed by teaching (prescription) and evaluation to get a maximum desirable modification in the learner's behavior.

Summary

In short, Teaching is considered a set of events designed to support an internal process of learning. The various objectives of teaching are t**o** bring desirable changes in the attitude of students, shape the conduct and behavior of students, facilitates the students in acquiring the knowledge, upgrade the learning skills of students, develop belief among students, make students more socialized, and efficient members of society.

The memory level of teaching is useful for young learners at the elementary level. It is helpful for the acquisition of factual information, knowledge, and memorization. It is the base for the next two levels of teaching i.e., understanding and reflective level of teaching.

The understanding level of teaching is performed at the more advanced level. It provides meaning to what is being taught to learners or learned by learners. It provides the learners a generalized insight. The teaching at the more advanced thoughtful mode of teaching is required at the understanding level of teaching. It is the base for the next level of teaching i.e., reflective level of teaching.

It has been concluded that learners get power for the acquisition of facts, principles, generalized insight, and problem-solving ability through their own efforts in the reflective level teaching. The learners learn the technique to identify, analyze, and test the problem. The learners acquire the ability to generalize the solutions for problems in real-life situations.

Teaching is not a simple process. It is a collection of so many activities and possesses a variety of quality characteristics.

The teacher, learners, subject matter, teaching strategies, and teaching environment are the essential variables or basic requirements of teaching.The teachers and learners must cooperate in the teaching process to make it more successful.

Keywords

- **Aptitude** refers to the extent to which an individual acquires a set of qualities under suitable training.
- **Teaching Aptitude** is a measure to predict the future success of an individual in the teaching profession after providing appropriate opportunities and rigorous training.
- **Teaching** is an act of imparting instructions from a mature person (teacher) to an immature person (students) in the teaching-learning situations for the development and betterment of the student.
- **Conditioning** is the modification of behavior and learning habits.
- **Instruction** imparts knowledge of specific subjects.
- **Indoctrination** changes some beliefs and attitudes of the learner.

- **Training** is practical and concrete.
- **Memory level teaching** is a level where there is only the memorization of factual information by students.
- **Understanding level teaching** is a level that seeks to acquaint learners with the relationship between a generalization and the particulars as well as Principles and solitary facts.
- **Reflective level teaching** is a careful and critical examination of an idea in the light of the testable evidence which supports it and the further conclusions towards which it points.
- **Independent variable** is the teacher in teaching.
- **Dependent variable** is the learner in teaching.
- **Intervening variables** of teaching are subject matter, teaching methods, instructional material, teaching environment, and goals of teaching.

Self Assessment

1. Teaching aptitude is the ability of an individual to be skilled in teaching by receiving

A. Formal training only
B. Informal training only
C. Machine training
D. Both formal and informal training

2. Teaching as an interpersonal influence, focused on modifying the behavior potential of another individual. Which of the following gave the above opinion?

A. Jakcson
B. Gage
C. Hough and Duncan
D. Smith

3. Which of the following is not the objective of teaching?

A. To upgrade the learning skills of students
B. To develop belief among students
C. To make students more individualized
D. To make students an efficient member of society

4. The interaction between teacher and students can happen at

A. Two levels of teaching
B. Psychological levels of teaching
C. Three levels of teaching
D. Least thoughtful level of teaching only

5. The nature of motivation at memory level of teaching is

A. Internal only
B. External only
C. Both internal and external
D. 70 percent external and 30 percent internal

6. Understanding level of teaching is

A. Lowest level of teaching
B. Highest level of teaching
C. Moderator level of teaching
D. Complex level of teaching

7. The model of understanding level teaching is developed by

A. Herbert

B. Hunt
C. Morrison
D. Bigger

8. Which of the following is the correct sequence?
A. Assimilation, Exploration, Organization, Presentation, Recitation
B. Organization, Exploration, Assimilation, Presentation, Recitation
C. Exploration, Presentation, Assimilation, Organization, Recitation
D. Exploration, Assimilation, Presentation, Organization, Recitation

9. Reflective level of teaching is influenced by
A. Herbartian theory
B. Thorndike theory
C. Conditioning theories
D. Cognitive field theory

10. Which of the following is a suggestion for teaching at reflective level?
A. Knowledge of memory level only
B. Knowledge of both memory and understanding level
C. Knowledge of understanding level only
D. Knowledge of memory level after understanding level

11. Teaching process involves
A. Change in behavior only
B. Change in behavior, educational objectives and learning experiences
C. Modification in behavior and Learning experiences
D. Educational objectives only

12. Which of the following is correct in context to characteristics of teaching?
A. Teaching is not a set of teaching skills to be learned through experience.
B. Teaching involves course content but not learning material.
C. Teaching includes teacher behavior, and behavior is observable.
D. Teachers may or may not know general methods of teaching.

13. In the teaching process, the classroom activities include –
A. discussion, evaluation, organization, and management
B. organization, discussion, recitation, and evaluation
C. organization, management, and evaluation
D. organization, management, discussion, recitation, and evaluation

14. In teaching, intervening variable/variables is/are
A. Learner and Teacher
B. Subject matter, instructional material and teaching environment
C. Learner and learning environment
D. Teacher and teaching strategies

15. Which of the following activity deals with the diagnostic function of teaching?
A. Control on the learners
B. Entry behavior of the learner
C. Modification in the behavior of the learner
D. Selection of content

Answer for Self Assessment

1.	D	2.	B	3.	C	4.	C	5.	B
6.	C	7.	C	8.	C	9.	D	10.	B
11.	B	12.	C	13.	D	14.	B	15.	B

Review Questions

1. Discuss the concept of teaching in detail.
2. Discuss the model of Model of Memory Level Teaching
3. Tabulate the differences between the memory level, understanding level and reflective level of teaching.
4. Analyze the various characteristics of teaching.
5. Explain the role of independent, dependent, and intervening variables in the teaching process.

Further Reading

- Foundation of Educational Technology by Dr. S. K. Mangal, Tandon Publisher.
- Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Online Links

- https://physicscatalyst.com/graduation/teaching-definition/
- https://www.researchgate.net/publication/272620585
- https://www.linkedin.com/pulse/teaching-science-art-craft-andrew-johnson/
- https://learnfromblogs.com/teaching-is-an-art-or-science
- https://gradeup.co/teaching-concept-objectives-levels-of-teaching-i
- https://trainingindustry.com/articles/workforce-development/teaching-is-different-from-training-how-to-use-both-effectively/
- https://prezi.com/di2ohv_e9lz3/learning-is-both-conscious-and-unconscious
- https://onlinenotebank.wordpress.com/2019/05/31/memory-level-of-teaching/
- https://physicscatalyst.com/graduation/levels-of-teaching/
- https://physicscatalyst.com/graduation/b-ed/teaching-and-learning/
- https://www.learningclassesonline.com/2019/08/levels-of-teaching.html
- https://blog.teachmint.com/levels-of-teaching/
- https://netmock.com/chapter-1-levels-of-teaching-ugc-net-paper-1/
- https://www.digitalclassworld.com/blog/level-of-teaching-memory-understanding-reflective-level/
- https://cbseugcnetforum.in/teaching-aptitude/teaching-characteristics-and-basic-requirements/
- https://unacademy.com/lesson/lesson-13-objectives-of-teaching-and-basic-requirements-of-teaching/GRJA9OLH
- https://www.slideshare.net/ijtsrd/basic-requirements-of-teaching
- https://onlinenotebank.wordpress.com/2019/05/31/strucure-of-teaching-three-

variables/

- https://www.scholarify.in/teaching-concept-objectives-characteristics-levels/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

Unit 2: Adolescent Learner's Characteristics - I

CONTENTS

Objectives

Introduction

2.1 Academic Characteristics of Adolescent Learners

2.2 Social Characteristics of Adolescent Learners

Summary

Key Words

Self-Assessment

Review Questions

Answers for Self-Assessment

Further Readings

Objectives

After studying this unit, you will be able to:

- understand the concept of learning,
- enlist various academic and social characteristics of adolescent learners,
- analyze various academic and social characteristics of adolescent learners.

Introduction

Learning is a key concept and occupies a significant place in an individual's life. Our actions are always influenced by what and how we learn. Learning is a natural process of growth. It is considered to be the permanent changes and modifications in the behavior of an individual. Learning is there as a result of the reinforced practice i.e., positive or negative reinforcement. This is the reason that learning has a psychological basis.

Definition

According to Gardner Murphy, learning means the modification in behavior to meet environmental requirements.

In the words of Smith, learning is the acquisition of the new behavior the strengthening or the weakening of old behavior as the result of experience.

Woodworth defined the term learning as any activity which brings development and change in an individual's behavior.

According to Kingsley and Garry, learning is the process by which there is a change in the behavior of an individual through training or practice.

Skinner defined the term learning as acquisition and retention.

In the words of Crow and Crow, learning is the acquisition of habit, knowledge, and attitude. It involves new ways of doing things, attempts to overcome obstacles, and adjust to new situations. It is a progressive change and enables an individual to satisfy interests to attain goals.

In short, learning is a process, not a product, experiences, and training, positive or negative, discontinue of behavior which is not desired, adjustment and adaptation, purposeful & goal-oriented, progressive and development, transferable, comprehensive process covering cognitive, conative and affective aspects of human behavior, universal and continuous, and as a process is of different types and involves different methods. Learning is not due to instinct and reflex tendencies, drugs, fatigue, illness, maturation, etc.

Adolescence

The word adolescence is derived from the Latin word 'Adolescere' means 'to grow to maturity.'

According to A.T. Jersild, adolescence is the span of years during which boys and girls move from childhood to adulthood, mentally, emotionally, socially, and physically.

It is the period of development and adjustment or the transitional period between childhood and adulthood.

Psychologically, it involves disturbances and problems of adjustments.

Also, adolescence is termed as a transition stage from childhood to adulthood.

Adolescent Learner

An adolescent learner is a learner who grows to maturity. There is the transition of that learner from childhood to maturity. When there is a transition in an individual from childhood to adulthood than an individual also develops emotionally, mentally, physically, and socially.

Stages of Adolescent Development

Based on one classification, the adolescence period starts at 12 or 13 years and ends at 18 or 19 years. It is further divided into two categories i.e., early adolescence and late adolescence period.

- The spread of the **early adolescence period** is from 12/13 years to 16/17 years.
- The spread of the **late adolescence period** is from 17 years to 18/19 years.

Based on another classification, the adolescence period can be categories as follows:

- Early Adolescence [13-15] – Transition from childhood to adolescence
- Late Adolescence [16-19] - Transition from adolescence to adulthood

Based on another classification, the adolescence period can be categories as follows:

- Early Adolescence [12 - 14 years]
- Middle Adolescence [15 - 17 years]
- Late Adolescence [18 - 21 years]

2.1 Academic Characteristics of Adolescent Learners

The academic characteristics of adolescent learners include education type, education level, knowledge, and intellectual development of adolescent learners. The other academic characteristics developed among adolescent learners are cognitive awakening, abstract thinking, focus on the present, analyze the relevance in learning, understanding, and questioning.

Cognitive Awakening

Adolescents have a cognitive awakening. As a result of cognitive awakening or development, the intellect of adolescent learners is working at the reflective level after crossing memory and understanding levels. Adolescents have the ability to understand and handle abstract as well as hypothetical concepts, and complex issues. They start to apply problem-solving approaches in order to solve their problems. There is a shift among adolescents from concrete to operational thinking.

Attention

There is a development of two types of attention among adolescents i.e., selective and divided attention.

In selective attention, adolescents focus on one stimulus while tuning out another i.e. first focus on one stimulus then after that focus on another.

In divided attention, the attention of the adolescents is divided between two or more stimuli i.e., the ability to handle two stimuli at a time.

Memory

Adolescents have working and long-term memory. The processing speed of their memory is very fast. They start thinking more quickly.

Organization

Adolescents are more aware of their thought processes and think more efficiently.

Metacognition

Adolescents have improved knowledge of thinking patterns and increase self-control as well as social insight.

Abstract Thinking

Adolescents start exploring various possibilities and not just focus on the realities. They tried to understand another person's viewpoint. They have the desire for immediate gratification. They are also able to consider exceptions to the rule.

Focus on Present

Adolescents have more focus on the present and less on the future. Adolescents keep hold of egocentrism which makes them believe that they are unique, special, and invulnerable to harm. Adolescents require guidance in setting clear limits for themselves. The guidance helps the adolescents in the decision-making process.

Relevance in Learning

Adolescents want concrete information. They also ask a question about the relevance of the content taught. There is an increase in their ability to process and relate information. As a result, there is an increase in their search for structure in the information. The teacher has to use the experiential approach in order to fulfill the demand of adolescents for relevance in learning by using real-life examples and meaningful participation in the community.

Understanding and Questioning

Adolescents develop the ability to understand the rules and conventions. They start questioning all experiences. The teacher should provide adolescents the opportunities to question and analyze various situations for developing skills of critical analysis and decision-making among adolescents.

The other academic characteristics of adolescents are also briefly discussed below:

Concrete to Abstract

Adolescents have developed the ability to move from concrete to abstract thinking.

High Achievement

Adolescents show high achievement when they are engaged completely and challenged by someone.

Eager to Learn

Adolescents are always eager to learn and show openness to information. They have broad mental space. They accept various changes consistently. Their curious nature develops an urge in them for acquiring more and more knowledge from knowledgeable individuals.

Active Learning Experiences

Adolescents always prefer the active learning experience over the passive. They are always actively participating in all activities to get first-hand experiences.

Interactions

Adolescents are always ready for interacting with their peers during various learning activities.

Relevance in learning

Adolescents always demand relevancy in learning and inquire about or ask questions related to the content being taught to them.

Reflective Thinkers

Adolescents develop the ability of reflective thinking and become reflective thinkers. They start self-reflection about their learning.

Logical and Systematic

Adolescents are very much logical and systematic in their approach during the conduction of any activity.

Imaginative

Adolescents use their imaginative powers while performing academic activities like assignments etc.

Problem Solving

Adolescents use a problem-solving approach to solve complex problems.

Deductive and Inductive Logic

Adolescents are capable of using deductive and inductive logic while solving their academic and real-life problems.

Intellectual Potential

Adolescents exhibit a wide range of intellectual development which includes meta-cognition and independent thinking.

Thinking Patterns

Adolescents have unique thinking patterns influenced by their different learning styles.

Scientific Reasoning

Adolescents use scientific reasoning in solving various problems and explaining different possible reasons behind a particular solution or fact or the happening of an event. They follow scientific procedures like framing hypotheses, do rigorous data collection by using an appropriate tool, and testing hypotheses to find a correct and valid result which have the capability to generalize in similar other conditions.

Logical and Systematic Procedures

Adolescents adopt logical and systematic procedures for getting a reliable, valid, and generalized solution.

Adolescents are **independent and critical thinkers**.

Adolescent some time **forgets easily** due to pre-occupation of their mind.

Adolescents are capable to **draw inferences** by observing relationships among similar concepts, ideas, and experiences.

Adolescents are capable of developing **causal and correlative relationships** between different phenomena or incidents occurring in their surroundings.

There is complete language development among adolescents. The quantity and quality-wise **vocabulary growth** among adolescents are at its **completeness**. The average response length is longer in girls as compared to boys. The growth in length of response for a 12-year adolescent is 12.8 words per sentence, for a 13-year adolescent is 13.7 words per sentence and for a 14-year adolescent, it is 13.9 words per sentence.

A few more academic characteristics of adolescents are recognizing, recalling, reproducing, selecting, listing, measuring, counting, reading, underlining, classifying, distinguishing, explaining, justifying, interpreting, choosing, modifying, illustrating, comparing, analyzing, synthesizing, concluding, contrasting, arguing, generalizing, associating, criticizing, evaluating, summarizing, verifying, reporting, supporting, predicting, using, solving, relating, **etc.**

2.2 Social Characteristics of Adolescent Learners

Social Development

According to Hurlock, social development means attaining maturity in the social relationship of an individual.

In the opinion of Garret, social development may be defined as the process whereby the biological individual is converted into a human person.

Social development implies the development of social qualities like adjustment with others, cooperation with others, sense of group loyalty, sense of social acceptance, etc.

It is the process of establishing a sense of identity and establishing a role and purpose. It is an outward sense. It is a sense of self and identity, assistance and support, risk-taking, search for a sense of self and personal identity, and based on myths and misinformation. The media also has an influence on the social development of adolescents.

The various **social characteristics of adolescent learners** are discussed below:

Independent

Adolescents attempt to define themselves as independent of the family unit. Family allegiance diminishes as peer relationships take on increased importance. As the adolescent engages in more interactions, many involving risk-taking behaviors, there is a transference of loyalty to the peer group.

Social Acceptance

As interpersonal skills are being developed and parental values are explored, the adolescent appears to fluctuate between demand for independence and a desire for guidance and direction. Authority still remains primarily with the family at this time but the adolescent will reserve the right to question or reject suggestions from adults. They start their identification with adults. They have a strong desire for social acceptance and to make personal choices. They start to develop a friendship with the opposite gender. They work and sacrifice for social rewards. They required frequent reinforcement for their actions and work. They are frightened by new settings.

Peer Group Influence

Adolescents spend most of their time outside the home and with members of the peer group. Being recognized as a popular member of a peer group is an important adolescent need. Adolescents often get into arguments with their parents and elders since they want to break away from their control. As adolescence progress, peer group influences begin to wane. The peers have a greater influence on the attitudes, speeches, interests, appearance, and behavior of adolescents.

Social Behavior

Attraction towards members of the opposite gender is another prominent characteristic of the adolescent. This is natural and occurs mainly because of the sexual maturity taking place among adolescents. Social activities whether with the same gender or with the opposite reach their peak in the high school years. As a result of broader opportunities for social participation, social insight improves among older adolescents. The greater the social participation of adolescents, the greater their social competency, as their social skills and abilities develop.

Social Groupings

The gangs of the childhood gradually break and the interest in the organized groups controlled by the adults also wanes. They like to be a part of the group control of the group controlled by them.

Selection of Friends

Adolescents no longer select their friends on the basis of ready availability at school or in the neighborhood, as they did during childhood. Adolescents want as friends those whose interests and values are similar to theirs, who understand them and make them feel secure and in whom they can confide problems and discuss matters they feel they cannot share with parents or teachers.

Social Acceptance

The values of adolescents largely depend on the value system of their peer group which is used to judge others. And they often feel that the values that they hold are in conflict with their parents or society at large.

Selection of leaders

Adolescents want their leader with some superior abilities and skills because he/she is representing their group in the eyes of society. Adolescent expects their leaders with certain qualities, like attractive, intelligent, energetic, eager to do things, etc.

Influence of Media

Media becomes a very powerful source of influence in the adolescent stage, especially music and television. These provide adolescents with role models like film heroes, great athletes, etc., whom they try to emulate. Such models help adolescents realize their fantasies and dreams.

Body Conscious

Body image becomes a very important concern for adolescents. In addition to it, fashion and glamour reflected in the style of dressing, sporting, make-up, having the right hairstyle, etc. become very important in their lives. These are associated with the social roles that adolescents want to develop and experiment with.

Social Pressures

Adolescents should be taught to deal with social pressures resulting from competition. Healthy attitudes towards competition should be encouraged. Adolescents should be encouraged to strive for self-improvement.

Now the brief description of social characteristics among adolescents for different stages of adolescent development is given below:

Early Adolescence

Adolescents struggle with their sense of identity. They feel awkward about themselves self and their body and worry about being normal. They start realizing that parents are not perfect and they have increased conflict with their parents. They have increased influence on their peer group. They have a strong desire for independence. They have developed a tendency to return to childish behavior in stressful situations. There is a development of moodiness in their behavior. It is a stage of rule- and limit-testing. They have a greater interest in their privacy.

Middle Adolescence

Adolescents have developed intense self-involvement with their work. They experience changes between high expectations and poor self-concept. They put their efforts into continuous adjustment to changing bodies. They feel worried about being normal. They have developed a tendency to distance selves from parents and continued drive for independence. Adolescents have driven to make friends and have a greater reliance on their friends. Adolescent's popularity in their group can be a significant issue for them. They have developed feelings of love and passion in them.

Late Adolescence

At this stage, there is the development of a firm sense of identity among adolescents. Adolescents have increased emotional stability. The increased concern for others is there among adolescents. They have increased independence and self-reliance among them. Peer relationships remain significant for them. At this stage, there is the development of the feeling of more grim relationships among them. The social and cultural traditions regain some of their importance at this stage.

Summary

Adolescents are intellectually and academically developed. They became an independent thinker and used an experiential approach to learning. The intellect of adolescent learners is working at the reflective level. Adolescents possess selective and divided attention, working and long-term memory, and think more efficiently. They tried to understand another person's viewpoint. They have more focus on the present and less on the future. They also ask a question about the relevance of the content taught. They develop the ability to understand the rules and conventions. They show high achievement when they are engaged and challenged. They are eager to learn and show openness to information. They prefer the active learning experience over the passive. They are logical and systematic in their approach. Adolescents exhibit a wide range of intellectual development and use scientific reasoning in solving various problems.

Adolescents have a strong desire for independence, attempt to define themselves as independent of the family unit, and influence by surrounding. They have a strong will for social acceptance, make personal choices, and give more importance to their peers. Their peers have a significant impact on them. With the development of their social skills and abilities, they became socially competent. They desire social recognition. They have developed feelings of love and passion in them. Adolescents have increased emotional stability. The increased concern for others is there among

adolescents. They follow a leader who is an intelligent individual and have an attractive personality. They tried to be like their leader.

Key Words

Learning means the modification in behavior to meet environmental requirements.

Adolescence is termed as a transition stage from childhood to adulthood.

Adolescent learner is a learner who grows to maturity.

Academic characteristics of adolescent learners include education type, education level, knowledge, intellectual development, cognitive awakening, abstract thinking, focus on the present, analyze the relevance in learning, understanding, and questioning.

Social development implies the development of social qualities like adjustment with others, cooperation with others, sense of group loyalty, sense of social acceptance, etc.

Self Assessment

1. _____defined the term learning as any activity which brings development and change in an individual's behavior.
2. Adolescere means _____.
3. _____is a learner who grows to _____.
4. There adolescent period is generally divided into _____ stages.
5. _____may be defined as the process whereby the _____ is converted into a _____.
6. Who said, "Learning covers every modification in behavior to meet environmental requirements."

a) Crow and Crow
b) Gardner
c) Kingsley
d) Smith

7. Learning is a

a) process
b) product
c) both process and product
d) neither process nor product

8. Academic characteristics of adolescent learners involve

a) education level and knowledge
b) education type and knowledge
c) education level, education and type and knowledge
d) education level and education type

9. Cognitive development among adolescent learners deals with

a) desire for immediate gratification
b) invulnerable to harm
c) search for structure in the information
d) shift from Concrete to operational thinking

10. Adolescent learners draw inferences by observing relationships among

a) similar concepts and experiences
b) similar ideas and experiences

c) similar concepts, ideas, and experiences

d) similar concepts and ideas

11. Social characteristics of adolescent learners includes

a) focus on Present

b) work and sacrifice for social rewards

c) relevance in Learning

d) question all experiences

12. Peers have a greater influence

a) on the attitudes of adolescent learners only

b) on the appearance of adolescent learners only

c) on the attitude and appearance of adolescent learners

d) on the family environment of adolescent learners

13. The actions of adolescents are ____ based on myths and misinformation.

a) rarely

b) sometime

c) hardly

d) often

14. 'Peer relationships remain important' corresponds to

a) early adolescent stage

b) middle adolescence stage

c) late adolescence stage

d) adolescent stage

15. 'Desire for independence' corresponds to

a) early adolescent stage

b) middle adolescence stage

c) late adolescence stage

d) adolescent stage

Answers for Self-Assessment

1. Woodworth

2. To grow to maturity

3. An adolescent learner, maturity

4. Three

5. Social development, biological individual, human person

6.	B	7.	A	8.	C	9.	D	10.	C
11.	B	12.	C	13.	D	14.	C	15.	A

Review Questions

1. Analyze the concept of learning.
2. Define the concept of adolescence and adolescent learner.
3. Discuss the various academic characteristics of adolescent learners.
4. Describe the social characteristics of adolescent learners corresponding to different stages of adolescent development.
5. Discuss the various social characteristics of adolescent learners.

Further Readings

1. Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
2. Development of Learner and Teaching Learning Process by Laxmi Publications (P) Ltd. for Lovely Professional University, Phagwara.
3. Fundamentals of Educational Psychology by M. Dash and Neeena Dash, Atlantic Publishers and Distributors.
4. Fundamentals of Educational Psychology by Dr. J. S. Walia, Ahim Paul Publishers.
5. NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
6. UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
7. Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
8. CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House

Web Links

https://www.scholarify.in/learners-characteristics/

http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

http://www.ignouhelp.in/ignou-bed-study-material/

https://www.gov.nl.ca/education/files/k12_curriculum_documents_adolescents_sec2.pdf

http://www.simplinotes.com/characteristics-adolescent-adult-learners/

https://www.aprcet.co.in/2020/04/learner-characteristics-characteristics-of-adolescent.html

https://ugcnetpaper1.com/learners-characteristics/

Unit 03: Adolescent Learner's Characteristics - II

CONTENTS

Objectives

Introduction

3.1 Emotional Development

3.2 Emotional Characteristics of Adolescent Learners

3.3 Cognition and Cognitive Development

3.4 Cognitive Characteristics of Adolescent Learners

Summary

Keywords

Self Assessment

Answer for self Assessment

Review Questions

Further Readings

Objectives

After studying this unit, you will be able to:

- understand the concept of emotional and cognitive development,
- analyze various emotional and cognitive characteristics of adolescent learners,
- apply Piaget's theory of cognitive development for adolescent learners,
- evaluate the emotional and cognitive characteristics of adolescent learners,
- tabulate the differences between adolescent learners' emotional and cognitive characteristics.

Introduction

Emotion is the complex psycho-physiological experience of an individual's state of mind as interacting with internal and external influences. It is an affective experience that accompanies generalized linear adjustment.

Emotion may be defined as a complex affective experience that involves diffuse physiological changes and can be expressed overtly in characteristics behavior patterns.

Emotion is an affective experience that one undergoes during an instinctive excitement. It is a mental and physiological stirred up states in the individual that shows itself in his overt behavior.

According to Camper, Frankel, and Camra (2004), emotion is a feeling/affect that occurs when a person is in the state or an interaction that is important to him or her, especially to his or her well-being.

The important components of emotion are the affect, cognitive reaction, physiological reaction, and behavioral reaction.

According to Plutchick (1980), the primary emotions include acceptance, anger, curiosity, disgust, fear, joy, sadness, and surprise.

In everyday life, we express our emotions in variable magnitudes and with a positive-negative scale such as -

Degrees in the positive axis - I feel well, quite well, and very well.

Degrees in the negative axis - I feel bad, quite bad, and very bad.

According to the situation in which emotions are aroused we choose words such as love, friendship, fear, etc., that, at the same time, show the positive or negative emotional signs.

The magnitude of emotions may be positive or negative. An individual chooses words like nothing, quite, some, enough, very, etc. based on the strength of emotion. In this way, we compose the description of emotion.

So in our emotions, we are experiencing two components of emotion i.e., a qualitative aspect of emotions and a quantitative aspect of emotions.

3.1 Emotional Development

Adolescence marks a significant part of the emotional development of a person. The children begin to break emotional ties with parents and develop them with friends.

The adolescents will start to regulate (hide) their emotions. Adolescents regulate their emotions because of their sensitivity to other's evaluations of them and their social expectations.

During adolescence, children begin to realize emotions aren't as simple as they thought when they were children. The display of empathy also increases during adolescence.

The inward thoughts of an individual are the key to their emotional development. The way a person thinks and feels about themselves and others influences that person's emotional development.

Adolescents shift moods rapidly and can become rebellious toward adults. They are sensitive to criticism and easily get offended. Developing and demonstrating individual emotional assets such as resilience, self-esteem, and coping skills are heightened during adolescence because of the rapid changes being experienced.

Factors Influencing Emotional Development

The various factors influencing the emotional development of adolescents are - adjustment, conflict, expectations, obstacles, relationships, risk of school failure, school problems, social expectation, status insecurity, unrealistic aspiration, and unfavorable family relationships

3.2 Emotional Characteristics of Adolescent Learners

Emotional development during adolescence involves establishing a realistic and coherent sense of identity in the context of relating to others. It also involves learning to cope with stress and manage emotions as well as processes that are life-long issues for most people.

Sense of Identity

It refers to more than just how adolescents see themselves right now. It also includes - what has been termed the possible self, what individuals might become and who they would like to become.

Sense of Identity encompasses two concepts i.e., self-concept and self-esteem.

Self-concept

Self-concept means the set of beliefs one has about oneself. This includes beliefs about one's attributes, roles and goals, and interests, values, and beliefs.

Self-esteem

Self-esteem involves the evaluation of one's feelings about one's self-concept. It is the process by which an adolescent begins to achieve a real sense of identity. It also involves experimenting with different ways of appearing, sounding, and behaving. Each adolescent approaches these tasks in his or her own unique way.

Adolescent's identity development is affected by individuality (self-assertion, separateness), connectedness (mutuality, open to other views),

ethnic and cultural group membership, and gender (may be more complex for females).

The development of the sense of identity is the critical issue of adolescence in developing and firming along with the emotional development of the adolescents.

Self-portrayal

Self-portrayal includes career path, cultural identity, gender identity, religious beliefs, social and intimate relationships, personality traits, and body image.

Emotional Swings

Adolescence shows a lot of storm and stress as a result of the constant changes that they undergo. So, there are a lot of emotional outbreaks, emotional highs and emotional lows among the adolescence. The adolescent experiences some moodiness. They may not be able to find the exact reasons for their moodiness. It is normal to be moody in the period of adolescence. This moodiness may be affected more by environmental experiences than hormonal changes. The pubertal changes are associated with an increase in negative emotions.

Self-Esteem

Self-esteem develops uniquely for each adolescent, and there are many different trajectories of self-esteem possible over the course of adolescence. The emotional status adolescents are experiencing can strongly influence their self-esteem either positively or negatively. The various comments by others (particularly parents and peers) reflect appraisals of the individual that some adolescents may incorporate as part of their identity and feelings about themselves. The high self-esteem of adolescents is the clear indicator of positive emotional development whereas emotional trauma will result in low self-esteem among the adolescence.

Low Self-esteem

The following characteristics have been identified by different researchers as being associated with low self-esteem in adolescents. Those are -

- Feeling depressed
- Lacking energy
- Disliking one's appearance and rejecting compliments
- Feeling insecure or inadequate most of the time
- Having unrealistic expectations of oneself
- Having serious doubts about the future
- Being excessively shy and rarely expressing one's own point of view
- Conforming to what others want and assuming a submissive stance in most situations

Consistently low self-esteem has been found to be associated with negative outcomes, such as depression, eating disorders, delinquency, and other adjustment problems. It is important that professionals or social workers identify youth who exhibit these characteristics and help them to get the extra help they needed to gain adequate self-esteem.

Emotional Literacy or Intelligence

Emotions exist as an essential part of human nature. When we are cut away from them, we lose a fundamental aspect of our human capacities.

Being emotionally literate means that an individual knows what emotions s/he and others have, how strong they are, and what causes them.

All adolescents must begin to master the emotional skills necessary to manage stress, be sensitive and effective in relating to other people. These skills have been called emotional intelligence.

According to Daniel Goleman (1995), the capacity for recognizing our own feelings and those of others, for motivating ourselves, for managing emotions well ourselves and in our relationships.

Constructs of Emotional Intelligence

Daniel Goleman (1998) outlines five main emotional intelligence constructs, which are described as follows:

Self-awareness

It is the ability to read one's emotions and recognize their impact while using gut feelings to guide decisions.

Self-management

It involves controlling one's emotions and impulses and adapting to changing circumstances.

Self-motivation

It involves emotional tendencies that guide or facilitate reaching goals.

Social Awareness

It includes the ability to sense, understand, and react to other's emotions while comprehending social networks.

Relationship Management

It entails the ability to influence, inspire, and develop others while managing conflict.

Development of Emotional Characteristics among Adolescent Learners as per Adolescence Stages

If we closely observe, we can see some stages in the emotional development of adolescence. For example,

In early adolescence (12-14), the adolescent develops a new sense of identity. There is the development of emotional characteristics like struggle with the sense of identity, awareness about self, moodiness, and privacy among adolescence at this stage.

In middle adolescence (14-17), it is developed to self-identity. There is the development of emotional characteristics like struggle with the sense of identity, intense self-involvement, and feelings of love among adolescence at this stage.

In the later adolescence (17-19) the adolescents are showing some self-reliability and independent decision making which were absent in early adolescence and middle adolescence. There is the development of emotional characteristics like the sense of identity, increased emotional stability, increased independence, and increased self-reliance among adolescence at this stage.

So, it has been found that there are gradual growths in all spheres.

These developmental stages in the emotional aspect can be observed in the following Spheres:

- Independence
- Emotions and affect
- Relationships
- Physical appearance and body
- School, work, and career
- Sexuality and romantic attachments

3.3 Cognition and Cognitive Development

Cognition is a process that involves thought, rationale, and perception.

Cognitive development defines the growth of an individual's ability to reason and think. Adolescents do more complex thinking. This type of thinking is also known as formal logical operations.

Formal Logical Operations

It includes abstract thinking, multiple viewpoints, the process of thinking, and reasoning.

Abstract Thinking

An adolescent can do abstract thinking that means thinking about possibilities.

Multiple Viewpoints

An adolescent considers many points of view that means to compare or debate ideas or opinions.

Thinking Process

An adolescent thinks about the process of thinking that means being aware of the act of thought processes.

Reasoning

An adolescent reasons from known principles that means forming own new ideas or questions.

Cognitive development includes attention, concepts, curious questions, intelligence, interests, imagination, language, memory, observation, percepts, perception, problem-solving ability, sensation, and thoughts, etc.

Therefore, adolescence marks the beginning development of more complex thinking processes also called formal logical operations including abstract thinking (thinking about possibilities), the ability to reason from known principles (form own new ideas or questions), the ability to consider many points of view according to varying criteria (compare or debate ideas or opinions), and the ability to think about the process of thinking.

According to Piaget (1950), Adolescents can analyze situations logically in terms of cause and effect and to entertain hypothetical situations and use symbols, such as in metaphors, imaginatively. This higher-level thinking allows them to think about the future, evaluate alternatives, and set personal goals.

Although there are marked individual differences in cognitive development among adolescents, these new capacities allow adolescents to engage in the kind of introspection and mature decision-making that was previously Beyond their cognitive capacity.

Cognitive competence includes such things as the ability to reason effectively, problem solve, think abstractly and reflect, and plan for the future.

Although few significant differences have been identified in the cognitive development of adolescent boys and girls, it appears that adolescent boys and girls do differ in their confidence in certain cognitive abilities and skills. Adolescent girls tend to feel more confident about their reading and social skills than boys, and adolescent boys tend to feel more confident about their athletic and math skills.

3.4 Cognitive Characteristics of Adolescent Learners

The adolescent period reflects the most advanced period in the functioning of the cognitive system. Adolescents use hypothetical thinking in problem-solving. Their thought becomes the object of thought (directed inward) for them. They advance in the use of deductive and inductive logic. They have abstract thoughts i.e., the representation of reality by symbols. They deal with abstractions by using symbolism. They use a logical and systematic approach to problem-solving. There is the development of reflective thinking among them. They have full intellectual potential, individual thinking patterns, scientific reasoning, and ability to comprehend systems of symbols by adopting logical and systematic procedures.

The various cognitive characteristics of adolescent learners are described below:

Formal Logical Operations

From ages 12 to 18, children grow in the way they think. They move from concrete thinking to formal logical operations.

Self-rate and Self-view

It's important to note that each child moves ahead at self-rate in their ability to think in more complex ways. Each child develops a self-view of the world.

Use logical Operations

Some children may be able to use logical operations in schoolwork long before they can use them for personal problems.

Complex Ways

When emotional issues come up, they can cause problems with a child's ability to think in complex ways.

Decision-making

The ability to consider possibilities and facts may affect their decision-making. This can happen in either positive or negative ways.

Abstract Thinking

They develop abstract thinking and deals with symbols rather than concrete things. They think qualitatively (for example good, evil, courageous, etc.) as well as quantitatively.

Attention

There is an increase in their attention span. Now, they concentrate for a longer period.

Curious

They are very much curious. They want to know the answers for what, why, and who.

Intellectual Communication

There is a development in their intellectual communication. Identification with conditions, characteristics

Intellectual Interests

The mental horizon of adolescents widens a lot. They understand the self and others. There is a transformation from self-awareness to self-analysis, self-insight, and self-drive.

Language

They acquire sufficient rich language. They made discussions on the day-to-day experience, do generalizations, and shift from perceptual to conceptual.

Morality

They understand moral concepts and values, obey certain moral norms, and think about good & bad.

Plans

They make plans and do actions for attaining remote goals.

Reality

They believe that the world of reality is real.

Senses

They have a keener power of perception and logical thinking. They think that they are more accurate. They compare various senses. They generalize things based on their experiences.

Use of Signs and Symbols

They are capable of using various signs & symbols.

Time Sense

They develop the power of locating events with space and the ability of response-recollection from the past anticipation of the future.

Cognitive Characteristics at Early Adolescence Stage

The various cognitive characteristics at early adolescence stage are described below:

Complex Thinking

Adolescent uses more complex thinking that focused on personal decision-making in school and at home.

Formal Logical Operations

Adolescents begin to show the use of formal logical operations in schoolwork.

Asking Question

Adolescents begin to question authority and society's standards.

Independent Thoughts and Views

Adolescents begin to form and speak his or her original thoughts and views on many topics. You may hear the child talk about which sports or groups he or she prefers, what kinds of personal appearance is attractive, and what parental rules should be changed.

Focus on Present

Mostly, adolescents are interested in the present with limited thought to the future.

Intellectual Interests

Adolescent's intellectual interests expand and become more important.

They have a growing capacity for abstract thought and develop deeper moral thinking.

Cognitive Characteristics at Middle Adolescence Stage

At the middle adolescence stage, adolescents give less importance to family and more importance to peers. Therefore, they break bondage with their family members and develop or establish bondage with their peers.

The various cognitive characteristics at middle adolescence stage are described below:

Complex Thinking Processes

An adolescent has some experience in using more complex thinking processes.

Abstract Thought

The continued growth of capacity for abstract thought is not highly developed in the middle adolescence stage.

Philosophical and Futuristic Concerns

Adolescents expand their thinking to include more philosophical and futuristic concerns.

Moral Reasoning

They have an interest in moral reasoning. They are thinking about the meaning of life, often ask questions and analyze more extensively.

Independent Code of Ethics

Adolescent thinks about and begins to form his or her code of ethics.

Independent Identity

Adolescent thinks about different possibilities and begins to develop own independent identity.

Future Goals

Adolescent thinks about and begins to systematically consider possible future goals. They have a greater capacity for setting goals.

Independent Planning

Adolescent thinks about and begins to make his or her plans or do independent planning.

Long-term Thinking

Adolescent begins to think for long-term.

Relationships

Adolescent uses systematic thinking and begins to influence relationships with others.

Cognitive Characteristics at Late Adolescence Stage

At the middle adolescence stage, adolescents have strong personal identity and no peer pressure.

The various cognitive characteristics at later adolescence stage are described below:

Complex Thinking

Adolescent uses complex thinking to focus on less self-centered concepts and personal decision-making

Global Concepts

The adolescent has increased thoughts about more global concepts such as justice, history, politics, and patriotism.

Idealistic

Adolescent often develops idealistic views on specific topics or concerns.

Inner Experiences and Moral Reasoning

Adolescent examines their inner experiences and has continued interest in moral reasoning.

Intolerance

The adolescent may debate and develop intolerance of opposing views.

Career Decisions and Focus on Future

Adolescent begins to focus thinking on making career decisions and has increased concern for future.

Role in Society

Adolescent begins to focus thinking on their emerging role in adult society.

Ideas Through and Delay Gratification

Adolescents develop the ability to think Ideas through and the ability to delay gratification (satisfaction).

Jean Piaget's Theory of Cognitive Development

The characteristics indicators of cognitive development as suggested by Jean Piaget are -

- Formal Operations
- Hypothetico-deductive Reasoning
- Propositional Thought
- Imaginary Audience
- Personal Fable

The characteristics indicators of cognitive development are described below:

Formal Operations

The ability to perform mental operations with abstract, intangible concepts such as justice or poverty and to be able to estimate or describe the effect of these intangible concepts. Therefore, youth can now represent in their mind circumstances, or events that they have never seen, nor personally experienced. For instance, a youth who has reached the stage of formal operations can imagine and accurately describe what it may have been like to be and can imagine as well as describe how victims may have felt about the inadequate and disparate rescue efforts. This youth will be able to use the abstract concepts of injustice and poverty to imagine as well as describe these events.

Hypothetico-deductive Reasoning

In addition to the ability to perform abstract mental operations, teens become more scientific and logical in the way they approach problems. Piaget called this methodical, scientific approach to problem-solving, hypothetico-deductive reasoning. Youth can now consider a problem, or situation, and can identify the many variables that may influence or affect the outcome. They can also estimate the most likely outcome if one or more variables are changed or manipulated. This ability has very practical applications because it enables youth to select the most logical or sensible solution to a problem.

Propositional Thought

According to Piaget, another complicated thought process that adolescents master is called propositional thought. This means youth can determine whether a statement is logical based solely on the wording of the statement, rather than having to observe or re-create the actual scenario to determine if it is logical.

Imaginary Audience

Not only do adolescents become more scientific and logical, but they also become better students of observation and interpretation. By observing other people's behavior, expressions, comments, and appearance they can interpret this information and make reasonable guesses about what another person may be thinking, wanting, needing, or feeling.

As such, adolescents also begin to wonder about what other people may be thinking about them! Unfortunately, these new cognitive abilities appear at the same time that younger adolescents are struggling with insecurities about their changing appearance, changing identity, and changing life experiences. All of these factors combine to create what Piaget called the imaginary audience.

Teens may mistakenly believe that everyone around them is watching and judging them, scrutinizing their every move, and can become painfully self-conscious as a result. The concept of an imaginary audience helps parents to understand why their teenagers spend eons in front of the bathroom mirror just to run to the store for a short errand or become incredibly embarrassed over a seemingly minor mistake. Therefore, the imaginary audience provides an example of the inter-relationship between cognitive, emotional, and social development.

Personal Fable

While the ability to use abstract thought and keen observational skills enable youth to become more attuned to others and more sensitive to people's needs, it can also lead to some new social and emotional difficulties when youth use their new cognitive abilities to compare themselves to others. Youth may feel exceptionally unique and different from other people, including their peers. Piaget called this the personal fable.

Many teens believe they have unique abilities, or conversely, unique problems, different from anyone else in the world. Some youth feel as though they are better, smarter, or stronger than others. This personal fable can lead to some devastating consequences because these youths may take dangerous risks when they over-estimate their abilities and believe they can handle it, or mistakenly believe they are omnipotent and that bad things cannot happen to them. This is why, adult caregivers need to continue to monitor youths' behavior, choices, and decisions.

Conversely, other youth may feel as though they are dumber, weaker, and inferior to others. This kind of personal fable can lead to feelings of sadness, frustration, and loneliness. If these negative thoughts and feelings continue to strengthen, youth can become depressed or hopeless, which can lead to other dangerous behaviors such as drug use, unsafe sexual activity, or even suicide. Once again, these youths need their caregivers' love, guidance, and support to help them through these difficult circumstances.

Summary

Emotional development means an individual's thinking and feeling about himself/herself and others. The characteristics of adolescent learners are - moodiness, rebelliousness, sensitivity to criticism, easily get offended, heightening of resilience, self-esteem, and coping skills.

Cognition is the process involving thought, rationale, and perception. The physical changes of the brain that occur during adolescence follow typical patterns of cognitive development. They are characterized by the development of higher-level cognitive functioning that aligns with the changes in brain structure and function, particularly in the prefrontal cortex region. Adolescence is a sensitive brain period that is a time when brain plasticity is heightened. During this time, there is an opportunity for learning and cognitive growth as the brain adapts in structure and functions in response to experiences. Teachers need to provide an assortment of educational approaches and materials that are appropriate for their student's wide-ranging cognitive abilities. For example, concrete thinkers require more structured learning experiences, while abstract thinkers need more challenging activities. In addition, young adolescents need teachers who understand and know how they think. Teachers need to plan curricula around real-life concepts and supply authentic educative activities (e.g., experimentation, analysis, and synthesis of data) that are meaningful for young adolescents because young adolescent's interests are evolving. They require opportunities for exploration throughout their educational program.

Keywords

Emotion is the complex psycho-physiological experience of an individual's state of mind as interacting with internal and external influences.

Emotional development is the way a person thinks and feels about themselves and others. It is influenced by the inward thoughts of an individual.

Cognition is a process that involves thought, rationale, and perception.

Cognitive development defines as the growth of an individual's ability to reason and think.

Self Assessment

1. The important components of are the affect, cognitive reaction, _____, and behavioral reaction.

2. Sense of Identity encompasses _____.

3. _____ outlines _____ main emotional intelligence constructs.

4. The children grow in as per the way they think during the period of _____.

5. The _____ is also known as complex thinking.

6. Emotions are
A. Positive only
B. Negative only
C. Both positive and negative
D. Neither positive and negative

7. Sense of identity includes
A. Self-concept
B. Self-religious beliefs
C. Self-moodiness
D. Self-concept and Self-esteem
8. Plutchick (1980) classify primary emotions into
A. 6 categories
B. 7 categories
C. 8 categories
D. 9 categories

9. Which of the following is the third construct of emotional intelligence as per Goleman's classification?
A. Self Motivation
B. Self-awareness
C. Social Awareness
D. Self-management

10. The identity that the adolescence possesses is portrayed in the
A. Separateness
B. Religious beliefs

C. Mutuality
D. Lacking energy

11. Cognitive development associated with
A. Complex thinking
B. Formal logical operations
C. Complex thinking or formal logical operations
D. Cognitive reaction

12. Which of the following directed towards representation of reality by symbols?
A. Systematic Approach
B. Meta-cognition
C. Logical
D. Abstract thoughts

13. How many characteristic indicators of adolescent cognitive development are identified by Jean Piaget?
A. Four characteristic indicators
B. Five characteristic indicators
C. Six characteristic indicators
D. Seven characteristic indicators

14. The cognitive characteristics at middle adolescence stage is
A. Complex Thinking
B. Focus on Present
C. Philosophical and Futuristic Concerns
D. Global Concepts

15. The characteristic - 'examination of inner experiences' develop among adolescents
A. at the beginning of adolescence period
B. at the early stage of adolescence
C. at the middle stage of adolescence
D. at the late stage of adolescence

Answer for self Assessment

1.	emotion, physiological reaction	2.	two concepts	3.	Daniel Goleman, five	4.	12 to 18 years	5.	formal logical operations
6.	C	7.	D	8.	C	9.	A	10.	B
11.	C	12.	D	13.	B	14.	C	15.	D

Review Questions

1. Elaborate the concept of emotional and cognitive development.
2. Discuss various emotional characteristics of adolescent learners.
3. Define emotional intelligence. Analyze the constructs of emotional intelligence suggested by Daniel Goleman.
4. Describe the cognitive characteristics of adolescent learners at late adolescent stage.
5. Explain the Piaget's theory of cognitive development for adolescent learners.

Further Readings

- Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
- Development of Learner and Teaching Learning Process by Laxmi Publications (P) Ltd. for Lovely Professional University, Phagwara.
- Fundamentals of Educational Psychology by M. Dash and Neeena Dash, Atlantic Publishers and Distributors.
- Fundamentals of Educational Psychology by Dr. J. S. Walia, Ahim Paul Publishers.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude by KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

https://www.scholarify.in/ugc-net-study-materials-for-paper-1/

http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

Unit 04: Adult Learner's Characteristics - I

CONTENTS

Objectives

Introduction

4.1 Academic Characteristics of Adult Learners

4.2 Social Characteristics of Adult Learners

Summary

Keywords

Self Assessment

Answer for Self Assessment

Review Questions

Further Readings

Objectives

After studying this unit, you will be able to:

- understand the concept of adult, adult learners, and social development among adult learners,
- explain the academic and social development among adult learners,
- analyze various academic and social characteristics of adult learners,
- classify social characteristics of adult learners at different stages of adulthood,
- apply Erikson's Psycho-social theory for adult learners.

Introduction

Adult

An individual who has arrived at a self-concept of being responsible for one's own life and self-directing is said to be psychologically an adult.

An adult is a biologically grown-up and mature person.

A person who has reached full growth and development is legally known as an adult.

Adult Learner

A mature student, acquiring new knowledge and skills, developing new attitudes after having reached mature intellectual, physical and social development, is known as an adult learner.

An individual is socially accepted as an adult learner who is involved in a systematic learning process, whether it is formal education, informal learning, or corporate-sponsored learning as a full-time or part-time learner.

4.1 Academic Characteristics of Adult Learners

Academic Development

The academic development of adult learners is more education and learning related. They include learning goals, education type, education level, prior knowledge, and intellectual development of the adult learners.

The different academic characteristics developed among the adult learners are direct application, intrinsic motivation, life-centeredness, practical and result oriented, the relevance of learning, self-direction, socialized, theory to application, and variety of experience.

The above-mentioned academic characteristics of adult learners are explained as follows:

Direct Application

Pressures of Life

Adult learning is learner centered. Adult learners focus on direct application. Adult learners are given their daily obligations in the job, profession, family, and community. They learn to cope with the pressures and problems of life they are facing. In consequence, the adult educator's concern is not only and not evens primarily the logical development of a subject matter but the needs and interests of the adult learners.

Problems of Life

In the dialectical process of needs negotiation, the needs as felt by the adult learners and the needs as seen by the adult educators must be brought together to reach a consensus on the real needs. These real needs must correspond to the experience of adult learners. If an adult learner gets the impression that his experience is not being valued, then s/he feel rejected as a person.

Life Experience

New learning takes on meaning as adult learners can relate them to their life experiences. The experienced adult educators, therefore, build into the design of their learning experiences provided for the adult learners. Then, the experienced adult educators observe the adult learners that how they start to plan, rehearse and are going to apply their learning in their day-to-day lives or duties and combine training with transfer and application.

Intrinsic Motivation

Learning in adulthood or adult learners is usually voluntary. Thus, it's a personal choice of adult learners to attend school, improve job skills, and achieve professional growth. This motivation is the driving force behind learning, and this is why it's crucial to tap into an adult learner's intrinsic impetus with the right thought-provoking material that will question conventional wisdom and stimulate his mind.

Adult learners are intrinsically motivated and work best when learning has clear and relevant goals.

Adult learners work best when they are involved in relevant setting and achievable goals. The path to those goals should be related to and applicable to their learning.

Intrinsic motivation is strongest when the tasks are timely and appropriate.

Life-centered

Adult learning is life centered. It is learning by doing, by application and experience, and if need be by trial and error. Adult learners do not simply receive knowledge created by outsiders but should examine their reality themselves and make assertions about it.

Adult learners do focus-analysis and examination of reality to transform it. Adult learning is a continuous process of investigation and exploration followed by action grounded in this exploration, followed by reflection on this action, leading to further investigation, and so on.

Adult learners follow the principle of the testing of knowledge. The exploration of new ideas, skills, and knowledge takes place in the context of the adult learners' experience.

In settings where skills are being learned, adult learners become acquainted with skills, apply these in real-life settings, redefine how these skills may be altered by context, re-apply these in other settings, and so on.

Adult learners interpret ideas, skills, and knowledge through the medium of their life experience and test them in real-life settings.

According to R. Kidd, the inner-directed, self-operating learner is the one who reflects critically on his assumptions and is keen to find alternative and better solutions.

As we know the purpose of adult education is to make the adult learner a self-directed learner. But the self-directed learner is neither the one who can retrieve information or locate resources nor the one who emerges in group dynamics.

Practical and Result Oriented

Adult learners are usually practical, have resent theory, and need information that can be immediately applicable to their professional needs. Adult learners generally prefer practical knowledge that will improve their skills, facilitate their work and boost their confidence. This is why it's important to create a course that will cover their individual needs and have more utilitarian content.

Relevance of Learning

Adult learners have high expectations. They want to be taught about things that will be useful to their work. They expect to have immediate results. They seek a course that will be worth their while, and not be a waste of their time or money. This is why it's important to create a course that will maximize their advantages, meet their individual needs, and address all the learning challenges.

Adult learners need to know the importance and relevance of what they're learning. The purpose of the learning should be established before engaging in the process.

Adult learners' readiness to learn is strongly impacted by the relevance of the task to their lives and work.

Adult learners need to engage in real-world problem-solving. They seek solutions in education to develop a bridge with the help of which they should know where they are and where they want to be.

Adult learners have competing interests. They are establishing the importance of a given study and make it more valuable, relevant as well as meaningful.

Self-direction

Adult learners feel the need to take responsibility for their lives and decisions. This is why they need to have control over their learning. Therefore, self-assessment, a peer relationship with the instructor, multiple options, and initial yet subtle support are all imperative.

Adult learners accept responsibility for their learning if it is perceived as timely and relevant.

Adults often expect to be held accountable, which supports effective self-directed learning among adult learners.

Adult learners often have a psychological need for self-direction.

Adult learners need empowerment and opportunities for nurturing self-direction.

Adult learners want to be treated as capable of self-direction with time to work on their own or collaboratively.

Socialized

The learning needs for an adult learner arise from life situations and interpersonal communication. Social expectation motivates and empowers an adult learner to search for more knowledge, better proficiency, and more suitable performance.

The learning, of adult learners, is based on their own experience and the experience of others.

The learning settings of adult learners usually have a participatory and collaborative element.

The adult learners prefer to meet as equals in small groups to explore issues and concerns. Then, they take common action as a result of dialogue and inter-learning by discourse. The resultant group becomes the learning co-operative group of adult learners.

Theory to Application

Adult learners are results oriented. They want to shift quickly from theory to application.

Adult learners are performance centered. They want to immediately apply new knowledge.

Adult learners may be skeptical about new learning. They want to test ideas before accepting them. They often have specific outcomes in their mind. They may disengage in learning if it doesn't move towards those outcomes.

Variety of Experience

Adult learners bring a variety of experiences that should be utilized in their learning. Their experiences are the foundation of their learning and are part of their continual growth. These experiences can and should be tapped into for the benefit of all adult learners. They come to learning with expectations about the process and established patterns of learning.

4.2 Social Characteristics of Adult Learners

Social Development

Social development is defined as a change over time in the adult's understanding of, attitudes concerning, and behavior toward others.

The three stages of the adulthood period are as follows:

- Early Adulthood Stage
- Middle Adulthood Stage
- Late Adulthood Stage

The detailed description of various social characteristics of the adult learners corresponding to the three stages of the adulthood period is as follows:

Social Characteristics of Adult Learners at Early Adulthood Stage

Careers

Adult learners face some formidable developmental tasks. Many adult learners at the beginning of this stage are concerned with launching a career. They may be studying to gain the critical qualifications or training at the entry-level of an organization.

Relationships

Adult learners experience changes in relationships with parents. The adult learners will take responsibility for their own life due to the increasing expectation from their parents.

Friendships

The focus of adult learners' friendships is somewhat different for men and women.

Female friends tend to confide in one another about their feelings, problems, and interpersonal relationships

Male friends typically minimize discussions about relationships or personal feelings or problems. Instead, male friends tend to do things together that they find mutually interesting, such as activities related to sports or hobbies.

Gender-role Adjustments

The gender-role adjustments are enormously hard at the early adulthood stage. Adult learners (male and female adults) have different rules at the early adulthood stage. They are well aware of the approved adult gender roles by society. But, this does not necessarily lead to their acceptance for their roles.

When females reach adulthood, at that time, their roles of wife and mother are devoting most of their time to their homes and children. They have very few or no outside interests.

The wives and mothers have little opportunity to escape from this role into one they previously found more satisfying and personally rewarding. There is a conflict between what they would like to do and what they know. They must do further weakens their motivation to play the traditionally prescribed gender role.

Social Characteristics of Adult Learners at Middle Adulthood Stage

During the middle adulthood stage/middle age, social activities and responsibilities assume increased significance for adult learners.

There is a conflict between generativity and stagnation among adult learners. That is the feeling of what they contribute towards society and what they don't among adult learners.

Generativity refers to making your mark on the world. It includes making commitments to other people, developing a significant relationship with family, mentoring others, and evaluating their contribution to the next generation.

Stagnation refers to the failure to find a way to contribute. It results in the feeling of being disconnected or uninvolved with their community and with society as a whole among adult learners. It includes self-centeredness, failing to get involved with others, not taking an interest in productivity, no efforts to improve the self, placing one's concerns over above all else, and the feeling of unproductive.

For adult learners, their children and families are a source of satisfaction.

Friends and peer group members are very important to adult learners in helping them to realize that they are not alone.

Happiness comes to adult learners from accepting the journey of life with its many twists and turns.

Adult learners developing and experiencing career goals and put their efforts into achieving them.

Adult learners renewed family (closeness) intimacy, and social contributions provide added value to them.

Social Characteristics of Adult Learners at Late Adulthood Stage

Wisdom

As an adult learner grows in his or her age, there is a development of wisdom in them.

The term wisdom, here, means accepting life as it is, accepting imperfections in self, parents, and life, and having no regrets. It includes practical knowledge, the ability to reflect on and apply that knowledge, emotional maturity, listening skills, and creativity in a way that helps others. It occurs as people deal with more difficulties in life and find various means to adapt to change. Those with wisdom tend to have better education and are physically healthier. It requires insight into the human condition and often follows that people with this ability are found in high positions in business and politics and religion.

At the late adulthood stage, an adult learner realizing the real meaning of life and whatever is there, accepting happily. This realization leads to wisdom among adult learners.

Depression and Dissatisfaction

In the late adulthood period, adult learners remain in a state of inward depression and dissatisfaction. They are always complaining and dissatisfied.

Sensitive and Demanding

In the late adulthood period, the internal feelings (of inward depression and dissatisfaction) are manifested in reaction formations for which adult learners become over-sensitive and demanding. So, these reactions, among adult learners, drifted their life towards the negative side instead of taking their life towards the positive side.

Happiness vs. Sadness

In the late adulthood period, adult learners depend on others to a large extent. This undue dependence makes them sad. But the adult learners who are independent and have fewer expectations from others and other support systems, are happy in their late adulthood period. They engage themselves in various activities. They think that the late adulthood period is the golden age because they are free from various other responsibilities and the burdens of a job. Many social and cultural factors influence the process of successful late adulthood period. Financial security and close relationship with everyone make adult learners healthy.

Increased Spirituality

In the late adulthood stage, some mature adult learners experience an increased spirituality.

Positive and Negative effect on Health

Religion may promote better health among adult learners. Psychologically supporting better coping skills help adult learners to face impending death, find and maintain a sense of meaningfulness in life, and accept inevitable losses of late adulthood. On the other hand, some religious practices

encourage behaviors that negatively affect the health of adult learners, such as refusing medications or ignoring sound medical advice.

Theories of Ageing or Late Adulthood

There two most important theories that explain the psychosocial aspects of late adulthood or ageing are:

- The Activity Theory and
- The Disengagement Theory

The Activity Theory

This theory states the relationship between keeping active and late adulthood/ageing well. According to this theory, adults who engage successfully and keep themselves busy in many activities, find substitutes for activities that they have lost due to the late adulthood period/retirement. Also, they perform many roles. As role decreases, ageing/adulthood increases.

The Disengagement Theory

This theory reveals that successful ageing is by mutual withdrawal between society and the adult. Generally, adults voluntarily minimize their activities by retiring. Also, society encourages this by making adults/individuals retire.

Erickson's Theory of Psycho-social Development

Erickson described the social characteristics of adult learners at early, middle, and late adulthood stage through his theory of Psycho-social Development as follow:

At Early Adulthood Stage

Sense of Intimacy

Sense of intimacy means a commitment to a close relationship with another person.

Adult learner seeks to form close personal attachments by merging his identity with that of another. An adult learner tends to risk even the loss of his ego or image as is evidenced in the harmonious relationship between husband-wife, intimate friends, and ideal teacher-student relationship. Adult learners are seen making sacrifices and compromises for their near and dears.

Isolation

Isolation means there is no sense of intimacy. The relationship deteriorates for one or other reasons. The pulling away from the relationship, breaking off ties, etc. It is crucial to the maintenance of one's individuality, development of one's personality in the desired direction. Therefore, a balance should be required between intimacy and isolation, because it will lead to balance between adult learners' adjustment with self and the world in which he or she lives.

At Middle Adulthood Stage

Generativity vs. Stagnation

Generativity is the feeling in mid-life that an adult has made the contribution or contributing to the next generation. The adults have satisfaction in their professional achievements. Now, an adult is passing on skills to their younger colleagues. They have reared children and entering the adult world well equipped to meet challenges. A link between the generations is as indispensable for the renewal of the adult generation's own life as it is for the next generation.

Stagnation is the feeling experienced by adults in mid-life that they have achieved relatively and significantly less and have less to offer to the next generation.

They do not meet the family or occupational goals that once motivated them.

Some adults have this sense of standing still with a period of self-absorption. They have an acute awareness that time is limited.

Adults are likely to experience both types of feeling, i.e., generativity and stagnation. The core developmental process of mid-life is the resolution of this conflict. Those who resolve it successfully attain a sense of care (about both the present and the future), but those who fail to do so, develop a feeling of rejection (i.e., they turn away from society and have little interest in contributing to it).

At Late Adulthood Stage

Ego-integrity vs. Despair

Ego-integrity - Adults feel that they contemplate their accomplishments. They can develop integrity if they see themselves as leading a successful life. Ego-integrity is the perception of an adult's only life cycle as something that had to be and later as a sense of coherence and wholeness.

Despair - Adults see their lives as unproductive. They feel guilty about their past. They have a feeling that they did not accomplish their life goals. They become dissatisfied with life and develop despair, often leading to depression and hopelessness.

Summary

An individual who has arrived at a self-concept of being responsible for one's own life and self-directing is said to be psychologically an adult.

A mature student, acquiring new knowledge and skills, developing new attitudes after having reached mature intellectual, physical and social development, is known as an adult learner.

The various academic characteristics of adult learners are - direct application, intrinsic motivation, life-centeredness, practical and result oriented, the relevance of learning, self-direction, socialized, theory to application, and variety of experience.

Social development is defined as a change over time in the adult's understanding of, attitudes concerning, and behavior toward others.

The various social characteristics of adult learners are -

- they have more focus on career, relationships, roles, and commitment at the early adulthood stage.
- they have more focus on responsibilities, satisfaction, and their contributions at the middle adulthood stage; and
- they have more focus on reviews of life accomplishments, increased spirituality, and development of wisdom at the late adulthood stage.

Keywords

An **adult** is a biologically grown-up and mature person.

An individual is socially accepted as an **adult learner** who is involved in a systematic learning process, whether it is formal education, informal learning, or corporate-sponsored learning as a full-time or part-time learner.

The **academic development** of adult learners is more education and learning related.

Social development is defined as a change over time in the adult's understanding of, attitudes concerning, and behavior toward others.

Self Assessment

1. _____ refers to the failure to find a way to contribute.

2. _____refers to making your mark on the world.

3. In _____, adults feel that they contemplate their accomplishments.

4. Adults see their lives as unproductive due to the feeling of ____

5. Adult learners are results-oriented and they want to shift quickly from _____.

6. An adult learner is a mature student who is acquiring
A. new knowledge
B. new knowledge and new skills
C. new skills
D. new talent

7. Adult learners often have a _____ need for self-direction.
A. Philosophical
B. Sociological
C. Psychological
D. Philosophical and Psychological

8. Adults' **readiness** to learn is strongly impacted by the relevance of the task to their **work**.
A. readiness, work
B. work, readiness
C. interest, work
D. readiness, interest

9. Adults bring a _____ that should be utilized in their learning.
A. variation
B. responsibility
C. relationship
D. variety of experiences

10. Relevance of learning includes
A. Foundation of learning
B. Improvement in skills
C. Focus on specific outcomes
D. Practical Problems

11. At early adulthood stage, adults may be studying to gain the ____ at the entry level of an organization.
A. qualification only
B. critical qualifications only
C. critical qualifications or training
D. training only

12. At middle adulthood stage, adult's children and family are a ___
A. source of knowledge
B. source of satisfaction
C. source of income
D. sources of entertainment

13. At late adulthood stage, adults become over sensitive and demanding due to
A. inward depression
B. inward feeling
C. inward dissatisfaction
D. inward depression and dissatisfaction

14. Which stage of adulthood discuss about the term intimacy?
A. Late adulthood stage
B. Middle adulthood stage

C. Early adulthood stage
D. Mature adulthood stage

15. Based on the lecture/discussion, answer the following:

    There is/are ____ most important theory/theories that explain the psychosocial aspects of ageing.

A. One
B. Two
C. Three
D. Five

Answer for Self Assessment

1.	Stagnation	2.	Generativity	3.	Ego-integrity	4.	Despair	5.	Theory to application
6.	B	7.	C	8.	A	9.	D	10.	D
11.	C	12.	B	13.	D	14.	C	15.	B

Review Questions

1. Define the social development among adult learners.
2. Explain the academic characteristics of adult learners.
3. Analyze various social characteristics of adult learners at early adulthood stage.
4. Discuss theories of ageing or late adulthood.
5. Elaborate Erikson's Psycho-social theory for adult learners.

Further Readings

- Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
- Development of Learner and Teaching Learning Process by Laxmi Publications (P) Ltd. for Lovely Professional University, Phagwara.
- Fundamentals of Educational Psychology by M. Dash and Neeena Dash, Atlantic Publishers and Distributors.
- Fundamentals of Educational Psychology by Dr. J. S. Walia, Ahim Paul Publishers.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://www.scholarify.in/ugc-net-study-materials-for-paper-1/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/
- https://www.verywellmind.com/generativity-versus-stagnation-2795734
- https://www.blackwellpublishing.com/intropsych/pdf/chapter10.pdf
- https://gcwgandhinagar.com/econtent/document/15
- https://magadhuniversity.ac.in/download/econtent/pdf/Social%20developmen

t.pdf
- https://ddceutkal.ac.in/Syllabus/MSW/PAPER-3.pdf
- http://egyankosh.ac.in/bitstream/123456789/17134/1/Unit-3.pdf

Unit 05: Adult Learner's Characteristics - II

CONTENTS

Objectives

Introduction

5.1 Emotional Development

5.2 Emotional Characteristics of Adult Learners

5.3 Cognitive Development

5.4 Cognitive Characteristics of Adult Learners

Summary

Keywords

Self Assessment

Answer for Self Assessment

Review Questions

Further Readings

Objectives

After studying this unit, you will be able to:

- understand the concept of emotional and cognitive development among adult learners,
- analyze various emotional and cognitive characteristics of adult learners,
- classify cognitive characteristics of learners at different stages of adulthood,
- evaluate the emotional and cognitive characteristics of adult learners,
- compile a list of the differences between adult learners' emotional and cognitive characteristics.

Introduction

Adulthood is the period when the individual has achieved physical maturity. It is a stage at which the compulsory education has finished and the young adult either tries to find work or goes onto further or higher education. Most people find a partner, leave home and start their own families in adulthood stage. One of the important parts of adult life is settling into a career.

5.1 Emotional Development

Emotional development is about an individual's feelings for and about other people, objects, situations, and experiences.

Adults are able to use words to express their feelings and explain how they are feeling.

It includes feelings an adult develops about him/herself and aspects such as confidence, self-esteem, and self-concept.

It refers to the capacity of an individual to recognize, express, and control feelings and emotions.

It includes the development of self-esteem and self-confidence in an individual.

5.2 Emotional Characteristics of Adult Learners

The various emotional characteristics of adult learners are described as follows:

Achievement, Self-esteem, and Self-worth

Self-esteem continues to develop through adulthood. Adult learners' self-esteem may increase through the achievements they have made which, in turn, increases self-worth.

Real Understanding

During adulthood, an adult learner develops a real understanding of who they are and how to deal with situations more effectively and with more confidence.

Mature and Controlling

Adult learners start behaving in a mature manner. Adult learners are cable of controlling the way they respond to the emotions that they are feeling.

Independent and Self-reliant

When an adult learner leaves home, he/she has to be independent & self-reliant to cope.

Accepting New Responsibilities and Stress

Adults having children that mean they are ready to accept new responsibilities because babies are very demanding & this can cause a lot of stress on adults. When we talk about someone behaving in a mature manner, we usually mean that they are the people who have to understand their own emotions and those of their partner and be able to control the way they respond to their emotions. Living with a partner takes a high level of emotional maturity if the relationship is not to break down when there are problems. Therefore, adult learners have to be emotionally mature to cope with this.

Jobs - Identity & Self Concept

The jobs adult learners do are an important part of their identity & self-concept. Adult learners may feel proud of their job & think they have been successful in getting it. If they are not satisfied with their job, they may feel a failure.

Stable Emotional Behavior and Accurate Self-concept

Most adult learners are described as being mature. Mature people should show a stable emotional behavior and accurate self-concept (i.e. view of themselves).

Lack Confidence and Emotions of Relationships

Adult learners may lack confidence and find the emotions of relationships difficult to handle.

Stress

Many adult learners suffer from stress due to leading busy lives and having a lot to think about.

Emotional Instability

Sometimes adult learners may suffer from emotional instability. It may be due to physical problems or mental stress.

Establishing Intimate Relationships

Adult learners try to build close/friendly relationships with people, while still maintaining a sense of self.

Emotional Intimacy

Adult learners have emotional intimacy i.e., the ability to experience a caring, loving relationship with another person, sharing their own innermost feelings.

Mid-Life Crisis

Adult learners having a mid-life crisis may experience some of the following:

- a search for an undefined dream or goal,
- a deep sense of regret for goals not accomplished,
- fear of humiliation among more successful colleagues,
- a desire to achieve a feeling of youthfulness, and
- a need to spend more time alone or with certain peers.

Some who experience a quarter- or mid-life crisis struggle with how to cope and may engage in harmful behaviors, such as abuse of alcohol or drugs or excessive spending of money. Others may

experiment with different aspects of their personality, explore new hobbies, or otherwise seek out change in their lives. Events like Death, Divorce, & Job Change may cause a mid-life crisis.

Emotional Changes Integrity

Emotional changes integrity means a feeling of wholeness and contentment. Adult learners enjoy the life they have by caring for the family and close social relationships, give due importance to religion, and integrity.

Sense of Identity, Confidence, and Self-Esteem

An adult learner develops a sense of identity, confidence, and self-esteem. It strengthens as an individual gets older.

Happiness

The feeling of happiness is slightly higher amongst young and older adult learners than those middle-aged adult learners.

Positive Feeling

It is found that positive feelings usually increase with age. Generally, feelings are mellow as we get older i.e. Less reactive and the average feeling tends to remain stable. Therefore, adult learners have positive feelings among them. It is also said that life is less of a roller coaster.

Self-Esteem

The self-esteem of adult learners is influenced by Job and Marital Status.

Self-Image

The self-image of adult learners is influenced by others and their emotional attachment.

Importance of a Relationship

The importance of a relationship for adult learners affects by the loss of friends/loved ones.

In early adulthood, the emotional changes are going to be more noticeable than the physical ones. This is an important stage in adult emotional and psychological development, and an adult strives to find our place in the world. During this time, important life decisions are made by adults about career and living arrangements.

The independent choices and resulting emotional consequences can have a profound impact on the views of adult learners. It happens with adult learners as they find their way in the world and gain their independence. One of the significant aspects of the development is the importance of relationship formation among adult learners. The development of their own intimate relationships can be challenging among adult learners. Adult learners have to learn to understand their new independent identities in order for these relationships to fully develop. Marriage and family formation typically occurs during early adulthood. Adult learners' emotional and psychological well-being is often tied to how successful they are at forming these relationships.

5.3 Cognitive Development

Cognitive development means how individuals think, explore and figure things out. It includes the development of knowledge, skills, problem-solving ability, etc. These abilities help an individual to think about and understand the world around them.

As people move closer to the end of life, there is a general loss of cognitive powers. The study of cognitive changes is complex in the adult/older population. The response speeds in the case **of** neural and motor responses reporting to decline among adults. Some researchers believe that age-related decrease in working memory is the crucial factor underlying the poor performance of the adults or elderly on cognitive tasks.

The three stages of the adulthood period are as follows:

- Early Adulthood Stage
- Middle Adulthood Stage
- Late Adulthood Stage

The detailed description of various cognitive characteristics of the adult learners corresponding to the three stages of the adulthood period is as follows:

5.4 Cognitive Characteristics of Adult Learners

Early Adulthood Stage

Cognitively, it is a time to grow up and make life decisions. The cognitive stages during early adulthood refer to a period of realistic and pragmatic thinking, reflective and relativistic thinking.

According to Piaget, young adults are qualitatively similar and quantitatively advanced in their thinking. The reason for the same is that they have more knowledge. Piaget also believed that adults increase their knowledge in a specific area.

Cognitive characteristics of adult learners at the early adulthood stage are -

Realistic and Pragmatic Thinking

Realistic thinking means looking at all aspects of a situation (the positive, the negative, and the neutral) before making conclusions.

In other words, Realistic thinking means looking at you, others, and the world in a balanced and fairway.

Some experts argue that the idealism of Piaget's formal operational stage declines in young adulthood, replaced by more realistic i.e., pragmatic thinking.

Schaie argues that adults use information differently than adolescents.

According to K. Warner Schaie, adults progress beyond adolescents only in their use of intellect. We typically switch from actually acquiring knowledge to applying that knowledge in our everyday lives.

To support his theory of development, K. Warner Schaie included the following two stages to describe the cognitive changes in adults:

Achieving Stage

This stage involves applying an adult's intelligence to situations that have profound consequences on achieving long-term goals, such as those involving careers. This stage of development includes mastering the cognitive skills needed to monitor an adult's behavior. Young adults in this stage will also acquire a considerable amount of independence.

Responsibility Stage

This stage of development begins in early adulthood and extends into middle adulthood. It is the time when a family came into existence. At this stage, an adult gives more attention to the needs of a spouse and children. The adults understand their social responsibilities and start their careers. They take on some level of responsibility for others at work and in the community.

Reflective and Relativistic Thinking

According to William Perry, adolescents often engage in dualistic and absolute thinking, whereas adults are more likely to engage in reflective and relativistic thinking.

The term dualistic thinking describes an adolescent's view of the world. The understanding of everything is in polar terms of opposites.

Examples of this are right/wrong or good/bad. Multiple thinking takes the place of dualistic thinking as youth mature. They gradually become aware of the diversity of opinion in other people and realize that authority may not have all the answers. Young adults begin to create their style of thinking. They believe that others are entitled to the opinion they hold. They also think that their idea is good as compare to others.

It leads to another form of thinking, that is, relative subordinate thinking. Here, personal opinions begin to be challenged by others. And a logical evaluation of knowledge is actively pursued. It leads to the final form of thinking, which is known as full relativism. In this level of thinking,

young adults completely understood that the truth is relative, and knowledge is constructed and not given, contextual and not absolute.

Post formal thought is qualitatively different than the formal operational thought suggested by Piaget. It involves an understanding that the correct answer to a problem requires reflective thinking. It may vary from one situation to another. As the search for truth is often an ongoing and never-ending process. Along with this is the belief that solutions to problems need to be realistic and that emotion and subjective factors can influence thinking.

Middle Adulthood Stage

For many, midlife is a period when they start to think about how much time they have left. Adults begin to reexamine their lives, relationships, work, and even to question the meaning of it all. The name given to this process is a mid-life crisis. Middle adulthood is indeed a time change and development.

Adults find significant changes in many areas of their lives. The most observable changes related to our lifestyle include physical development and health, career and finances, marriage, and leisure activities.

Middle adulthood is a period in which adult changes in their cognitive functioning as apprehensive to their intelligence (crystallized and fluid), information processing and memory, expertise, career, work, leisure, religion, health, coping, and meaning in life.

Intelligence

Cognitive development is multidirectional. It gains in some areas and losses in others.

Cross-sectional measures of intelligence show a decrease with age. There may be a cohort effect of better or more schooling.

Longitudinal measures show an increase, at least until the age of 50s. It can enhance due to practice effects and attrition.

Cognitive abilities are more likely to increase than decrease except for arithmetic skills, which begin to shift slightly downwards by age 40.

The two types of intelligence are fluid and crystallized intelligence.

Fluid intelligence

Fluid intelligence refers to our ability to see relationships, use abstract reasoning, and analyze information.

Fluid intelligence declines with age, but crystallized intelligence regularly grows as we learn more during middle age.

Fluid intelligence is flexible reasoning. It is composed of the fundamental mental abilities such as inductive reasoning, abstract thinking, and speed of brain/thinking required for understanding any subject. It is fast and abstract reasoning in adults. There is a decline with age. It includes nonverbal abilities and nonverbal puzzle-solving, novel logic problems.

It allows best works at the age 20s and 30s by mathematicians, scientists, and poets. Fluid intelligence peaks during early adulthood and then decline the ability to apply mental powers to new problems, perceiving relationships, forming concepts, and drawing inferences. The decline in fluid intelligence is probably due to changes in the brain. These differences might be due to cohort effects related to educational differences rather than to age.

Crystallized intelligence

Crystallized intelligence refers to our ability to use knowledge, experience, vocabulary, and verbal memory (Horn & Hofer, 1992).

Crystallized intelligence is the verbal reasoning that holds across the lifespan. It reflects accumulated knowledge and vocabulary. It allows best works at the age of 40s, 50s, and older by historians, philosophers, prose writers. It refers to the accumulation of facts, information, and knowledge which comes with education and experience within a particular culture. Crystallized intelligence improves through middle age and on.

The ability to remember and use acquired information over a lifetime is enhanced. It also depends on the education and culture of the individual. An individual can use stored information's and process automatically in their daily lives.

Many psychologists believe that fluid intelligence was primarily genetic and crystallized intelligence was mainly learned. This nature-nurture distinction is probably invalid in part. The reason for the same is the acquisition of crystallized intelligence is affected by the quality of fluid intelligence.

According to Robert Sternberg, there are three types of intelligence -

- Analytic / Academic
- Creative
- Practical

Analytic/Academic

It consists of mental processes that foster efficient learning, remembering, and thinking multiple-choice tests, with one and only one correct/right answer reward analytic intelligence. They tend to have an extensive, highly organized knowledge of a particular domain and increase work satisfaction.

There is an honest commitment towards the job. Adults have the best physical and psychological well-being. The current middle-aged worker faces more challenges, and increased career challenges lead to career changes. The midlife career changes can be self-motivated or imposed by others.

Creative

Creativity is another significant/important adult skill related to intelligence. Like intelligence, though, it is hard to agree on what it is. We know that some kinds of creativity, like writing, peaks during middle adulthood. Creativity and practical intelligence often combine to create people we call experts in their fields, whether repairing cars, farming, writing, or designing a spacecraft.

It involves the capacity to be flexible and innovative when dealing with new situations. In the middle adulthood years, the expertise increases. They tend to use the accumulated experience of their life situations to solve problems.

There is more creativity and flexibility in their domain than novices. They prefer to make their own decisions and plans. They favor their judgment over that of others and don't tend to back down in the face of criticism or disagreement. They are most resourceful when faced with unique circumstances or problems.

They show the imaginative use of many different words. They illustrate more flexibility in their approach to problems. They are eager to try new avenues. They are not bound to rules or accepted ideas of the way things work. They show originality and do not often come up with off-the-shelf solutions.

Practical

It enables individuals to adapt their abilities to contextual demands. They tend to have a pleasant time after work. They have more time and money to pursue activities and interests. There is a decreased rate of heart disease and death due to vacations and leisure. During this time, they are preparing themselves for retirement.

Information Processing and Memory

During middle adulthood, the speed of information processing, reaction time, and memory declines. The use of effective memory strategies can decrease the decline.

Religion, Health, Coping, and Meaning In Life

Religion and spirituality is a significant dimension of life during this stage. A remarkable increase in religiosity and spirituality is there during middle age. There is an individual difference in religious interest, as the females show more interest in religion than males have.

There is a positive association between religious participation and longevity. Religion promotes physical and psychological health and positive functions of religious coping.

Late Adulthood Stage

Erik Erikson suggests that, at this stage, it is significant to find meaning and satisfaction in life rather than to become bitter and disillusioned, that is, to resolve the conflict of integrity vs. despair.

The cognitive characteristics of adult learners at the late adulthood stage are -

- Memory
- Language Processing
- Problem Solving

Memory

Older adults are taking in information more slowly, and they use strategies less, can't inhibit irrelevant information, and retrieve important information from long-term memory. So memory failure increases. Slower processing speed means there will be less retained from current activities. They also forget the context, which helps us recall information. Recognition memory does not decline as much as free recall.

The different types of memory have been discussed below:

Deliberate vs. Automatic Memory

Deliberate memory is the memory with conscious awareness.

Automatic/Implicit memory is memory without conscious awareness. This memory is more intact than deliberate memory, trying to recall information.

Associative Memory

Associative memory deficit is a problem creating and retrieving links between pieces of information. This is more common for elders.

Remote Memory

Remote memory is a very long-term recall. It is not any clearer than recent recall for seniors, even though the myth is that seniors remember the past better than recent events.

Autobiographical Memory

Autobiographical memory is a memory for your own personally experienced events. Seniors best recall their adolescent and early adulthood experiences better than later life experiences. There was a lot of novelty in those times, as well as life choices being made- spouses, jobs, educational choices. These experiences were more emotionally charged, so they are remembered better. They become part of a person's life story and are remembered often.

Prospective Memory

Prospective memory is remembering to do planned activities in the future. There is more forgetfulness and absentmindedness as people age. They tend to do better on event-based memory tasks than time-based tasks.

Language Processing

The two aspects of language processing diminish in older age. Those are finding the right words and planning what to say and how to say it. Their speech will have more pronouns and unclear references. They will speak more slowly, pause more often, and have trouble finding the right words.

There will be more hesitations, false starts, sentence fragments, word repetitions as they age. They tend to simplify their grammatical structures, so they can better retrieve the words they want.

Problem Solving

Problem-solving declines in late adulthood so married people tend to collaborate more in problem-solving. They will be better at solving problems they think are under their control. They will make more rapid decisions in areas of health, as that is an area, they feel they have learned a lot about.

Increase in Wisdom

Wisdom includes practical knowledge, the ability to reflect on and apply that knowledge, emotional maturity, listening skills, and creativity in a way that helps others. This does increase

with age. It occurs as people deal with more difficulties in life and find various means to adapt to change.

Those with wisdom tend to have better education and are physically healthier. It requires insight into the human condition and often follows that people with this ability are found in high positions in business and politics and religion.

It also includes knowledge about fundamental concerns of life- human nature, social relationships, emotions; effective strategies for applying that knowledge to making life decisions, handling conflict, giving advice, etc.; and a view of people that considers multiple demands of their life contexts.

It concerns the ultimate human values, the common good, and respect for individual differences in values. It also makes awareness and management of the uncertainties of life – many problems have no perfect solution.

A few more cognitive characteristics of adult learners are mentioned below:

1. Adult learners tend to be self-directed and want control over their own learning.
2. They have self-imposed cognitive barriers due to years of academic failure and a lack of self-confidence.
3. They can be resistant to new ideas or approaches. They are less open-minded than younger people.
4. They underestimate their ability to learn.
5. They desire pragmatic and relevant instruction that they perceive as valuable.
6. They are intrinsically motivated.
7. They interpret new learning in the context of old learning.
8. They learn at a slower pace than that of youth.
9. They are very concerned about the effective use of their time.

Summary

Emotional development is about an individual's feelings for and about other people, objects, situations, and experiences. It includes the feelings adult learners develop about themselves and aspects such as confidence, self-esteem, and self-concept. It refers to the capacity to recognize, express, and control feelings and emotions. It also includes the development of self-esteem and self-confidence.

The various emotional characteristics of adult learners are the development of self-esteem, emotional intimacy, sense of identity, confidence, self-esteem, happiness, positive feelings, stable life, the establishment of intimate relationships, and facing a mid-life crisis.

The cognitive characteristics of adult Learners with respect to sub-stages of adulthood are -

At the early adulthood stage, adult learners have realistic, pragmatic thinking, reflective and relativistic thinking.

At the middle adulthood stage, there are changes in adult learner's cognitive functioning as apprehensive to their intelligence (crystallized and fluid), information processing and memory, expertise, career, work, leisure, religion, health, coping, and meaning in life.

At Late Adulthood Stage, there are changes in adult learner's memory, language processing, and problem-solving ability. Adults start searching for meaning and satisfaction in life rather than becoming bitter and disillusioned, that is, to resolve the conflict of integrity vs. despair.

Keywords

Adulthood is the period when the individual has achieved physical maturity.

Emotional development is about an individual's feelings for and about other people, objects, situations, and experiences.

Cognitive development means how individuals think, explore and figure things out.

Self Assessment

1. Self-esteem _____ to develop through adulthood.
2. Emotional changes integrity means a feeling of_____.
3. Fluid intelligence was primarily _____ and crystallized intelligence was mainly_____.

4. _____ is flexible reasoning.

5. Adult learners tend to be _____ and want _____.

6. Emotional development is about an individual's feelings ___ other people and experiences.

A. for
B. about
C. for and about
D. of

7. An individual's _____ may increase through the _____.

A. achievements, self-esteem
B. self-esteem, achievements
C. achievements, self-worth
D. control, feelings

8. Which of the following is not related with Mid-life crisis?

A. A search for an undefined dream or goal.
B. A fear of humiliation among more successful colleagues.
C. A deep sense of regret for accomplished goals.
D. A desire to achieve a feeling of youthfulness.

9. An adult can establish an intimate relationship by

A. building a close relationship with people
B. isolating himself/herself from people
C. sharing his/her feeling with children
D. thinking about his/her feeling for others

10. Feeling of happiness is slightly higher

A. amongst young adults that those middle-aged adults
B. amongst older adults that those middle-aged adults
C. amongst middle aged adults that those young and older adults
D. amongst young and older adults that those middle-aged adults

11. Adult learners were ____ advanced in their thinking; however, they are ____ similar.

A. qualitatively, quantitatively
B. less quantitatively, less qualitatively
C. quantitatively, qualitatively
D. more quantitatively, less qualitatively

12. Adult learners increase their knowledge in a _____ area.

A. general
B. vague
C. broad
D. specific

13. Realistic and Relativistic thinking associated with

A. Early Adulthood Stage
B. Middle Adulthood Stage
C. Late Adulthood Stage
D. Delayed Adulthood Stage

14. K. Warner Schaie suggested _____ of cognitive changes in adult learners.
A. two stages
B. three stages
C. four stages
D. five stages

15. Who proposed that intelligence is composed of three distinct parts?
A. Warner Schaie
B. Robert Sternberg
C. Jean Piaget
D. Ivan Pavlov

Answer for Self Assessment

1.	continues	2.	wholeness and contentment	3.	genetic, learned	4.	Fluid intelligence	5.	self-directed, control over their own learning
6.	C	7.	B	8.	C	9.	A	10.	D
11.	C	12.	D	13.	A	14.	A	15.	B

Review Questions

1. Write a short note on the emotional development among adult learners.
2. What do you mean by Mid-Life Crisis?
3. Evaluate the emotional characteristics of adult learners.
4. Analyze various cognitive characteristics of adult learners at the early stage of adulthood.
5. Describe cognitive characteristics of learners at the middle stage of adulthood.

Further Readings

- Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
- Development of Learner and Teaching Learning Process by Laxmi Publications (P) Ltd. for Lovely Professional University, Phagwara.
- Fundamentals of Educational Psychology by M. Dash and Neeena Dash, Atlantic Publishers and Distributors.
- Fundamentals of Educational Psychology by Dr. J. S. Walia, Ahim Paul Publishers.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://www.scholarify.in/ugc-net-study-materials-for-paper-1/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/
- http://resources.hwb.wales.gov.uk/VTC/2012-13/22032013/hsc/eng/unit_2/hsc_u2_hgd/hsc_u2_emotional-dev.htm
- https://helpmegrowmn.org/HMG/HelpfulRes/Articles/WhatCognitiveDev/index.html

Unit 06: Individual Differences

CENTENTS

Objectives
Introduction
6.1 Meaning and Definition of Individual Difference
6.2 Types of Individual Differences
6.3 Causes of Individual Differences
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Reading

Objectives

After studying this unit, you will be able to:

- define the concept of individual differences.
- identify the basis of individual differences with respect to characteristics.
- enlist different types and causes of individual differences
- differentiate individuals based on physiological and psychological aspects
- analyze the basis and different causes of individual differences.

Introduction

Individual differences are the traits and blessings of nature. Nature and environment both play important roles in these types of differences. Heredity and environment are the basis for individual differences obtained by virtues. Everybody has unique characteristics, which present him as a different person. It is a universal phenomenon. It is the characteristic of all living organisms and includes the range of human behavior.

6.1 Meaning and Definition of Individual Difference

Concept and Meaning

Individual differences mean the differences of one man from other in color, physique, special ability, interest, nature, achievement, and other virtues of man. There is no person in the world, which is completely like the other. Even the similarity is not found between two sons of one parent.

The individual difference may be measurable and non-measurable aspects. Individual difference is related to all those capabilities and traits by which personality is developed and constructed.

According to Skinner, individual differences should be included as the only measurable aspects of the whole personality of an individual.

According to Tailor, Individual differences are those differences that are measurable in physical size and shape, physiological functions, motor capabilities, intelligence, achievement and knowledge, interests, attitude, and personality traits.

According to Charles Darwin, individual difference means no two individuals of the same race are alike.

Individual differences include the differences in the learning, retention, and transfer of information; the domain of remembering; recognition; between younger and older; between mildly retarded and non-retarded; the range of subject abilities; degree of cognitive complexity; type of learning environment; transfer of learning or training; intelligence; personality; regions, social caste, race, gender, age, culture, members of a family; and between individuals that separate individuals from one another and make one a unique individual in oneself.

Individual differences are the differences between individuals that separate individuals from one another and make one a unique individual in oneself.

Individual differences also include the enduring characteristics that distinguish one organism from another and that are stable over time and across situations.

Individual differences also include the cognitive, affective, behavioral, and/or genetic traits ascribed to persons or animals.

Definition

Thomas and Chess (1970) define individual differences as the reliable individual differences that could be observed shortly after birth as activity level, attention span, adaptability to changes in the environment, and general mood.

Osborne defines individual differences as the dissimilarity between persons that distinguish them from one another.

Carter B. Good defines individual differences as the variation or deviations among individuals regarding single characteristics or several characteristics.

The Dictionary of Clinical Psychology, Individual differences as the deviation of individuals from the group average or each other.

The Dictionary of Education defines the individual differences as -

- the variation or deviations among individuals regarding a single characteristic or number of characteristics.
- differences which in their totality distinguish one individual from another.
- distinguish or separate humans from one another and makes one a single unique individual.

Classification of Individual Differences

Individual differences may be classified into two categories based on inherited and acquired traits.

Inherited Traits

Inherited traits are the mental, physical and temperamental traits.

Acquired Traits

Acquired traits are cultural, educational, emotional, and social traits.

Basis of Individual Differences

The various bases of the individual difference are described below:

Physical Differences

Physical differences among individuals are based on height, weight, the color of skin, eye, hair, etc.

Cognitive Differences

Cognitive differences among individuals are based on reasoning, thinking, imagination, and creative expression.

Motor Abilities

Individual differences based on motor abilities include time, speed of action, steadiness, and rate of muscular movement.

Emotions

Individual differences based on emotions include positive emotion, negative emotion, mature and immature emotion.

Interests and Aptitude

Individual differences based on interest and aptitude includes interest and aptitude towards the group, books, music, game, subjects, etc.

Attitude, Beliefs, and Opinions

Individual differences based on attitude, beliefs, and opinions include attitude, beliefs, and opinions about groups, objects, ideas, etc.

Learning Abilities

Individual differences based on learning abilities include memorization, learning styles, group learning, individual learning, etc. Therefore, individuals are also different from each other based on their visual, auditory, reading or writing, and kinesthetic abilities.

Social and Moral Development

Individual differences based on social and moral development include happy social life, disturbed social life, morally developed, morally less developed, etc.

Economic Status

Individual differences based on economic status mean individual belongs to the high, average, and low economic status of an individual.

Individual differences can also be studied based on individuals' achievement; reading, writing, and learning abilities; and performance in exams, training, and competition. Individuals can be differentiated based on their wisdom and acquired knowledge.

6.2 Types of Individual Differences

The differences that exist among human beings may be generally grouped into two broad categories -

- Physical or Physiological differences
- Psychological differences

Physical or Physiological Differences

Physical or physiological differences are the differences that are created on account of the variations in terms of the physical or physiological makeup of an individual's body.

Psychological Differences

Psychological differences are the differences in which psychological conditions are generated differences in terms of varying intellectual potentialities, interests, attitudes, aptitudes, emotional, social, and moral development, etc.

These two broad categories are divided into many specific sub-categories which are given below:

Achievement, Aptitude, Attitude, Beliefs & Opinions, Economic Status, Emotions, Gender, Intelligence, Interests, Mental Abilities (Intellectual development, Interest, Learning & Knowledge, Main Tendencies and Nature), Motor Ability, Nationality, Personality, Physical, Social and Moral, etc.

A brief description of individual differences based on the above-mentioned sub-categories is given below:

Achievement

It has been found that differences exist in achievement among individuals who have almost the same amount of intelligence and have been subjected to an equal amount of schooling and experience. There are differences among students based on their reading, writing, and mathematics abilities.

Students who are at the same level of intelligence still they are performing differently. The individual differences among students are also based on their experiences, interests, and educational background.

Aptitude

Individuals are found to have different aptitudes. It has been observed that every individual has different types of aptitude like linguistic, logical, mechanical, organizational, physical, scientific (or science, technology, engineering, and math), and spatial aptitude. Some have more mechanical aptitude, while others have more scholastic, musical, or artistic aptitude.

Therefore, these differences in aptitude lead to individual differences among individuals.

Attitude

Individuals are found to possess varying attitudes towards different institutions, authorities, people, groups, objects, and ideas. Their attitude may be positive, negative, or of a somewhat indifferent nature.

Beliefs & Opinions

Individuals may differ in respect of beliefs, opinions, and ideas. Some individuals firmly believed in one thing, others in another. Some individuals are conservative and rigid while others are progressive, liberal, and dynamic.

Economic Status

Economic status is broadly classified into three categories that are high-income group, middle or average-income group, and low-income group. Individuals fall into these groups based on the income and wealth they possessed. The differences in interests, tendencies, and character of individuals are also due to their economic differences.

Emotions

In some individuals, positive emotions like love, affection, and amusement are prominent whereas in some negative emotions are more powerful.

Individuals also differ in the manner they express their emotions. Some are emotionally stable and mature while others are emotionally unstable and immature. There exists a wide emotional difference among individuals based on their emotional reactions to a particular situation. Some are irritable and aggressive, get angry very soon, while others are easy-going, of peaceful nature, and calm or do not get angry very easily.

Gender

McNemar and Terman differentiated the individuals based on gender as follows:

Female

- Females have greater skill in memory.
- They have superior handwriting.
- They have greater skill in making sensory distinctions of taste, touch & smell, etc.,
- They are superior in language.
- They are better at mirror drawing.
- They commit less faults of speech.
- Girls take more interest in stories of love, fairy tales, schools, homes, daydreaming.
- Females are more susceptible to suggestions.

Male

- Males have greater motor ability.
- They are good at mathematics and logic.
- They have a greater reaction to and are conscious of the size-weight illusion.
- They are superior in physics and chemistry
- They are not better at mirror drawing.
- Males commit three times more faults of speech as compared to females.

- Boys take interest in stories of bravery, science, war, scouting, games, sports, occupation, and skill.
- Males are three times more color blind than females.

Intelligence

The intelligence of an individual also became the basis of individual differences. According to Lewis Madison Terman, based on intelligence, individuals can be classified into nine categories from supernormal or genius (120 IQ) to idiots (below 50 IQ), that is, genius, near-genius, very superior, superior, average, backward, feebleminded, dull, and idiot.

Mental Differences

Individuals differ in their intellectual abilities and capacities like reasoning and thinking, power of imagination, creative expression, concentration, etc.

In the field of general intelligence, we find tremendous differences between individuals. Based on these differences they are usually classified as idiots, imbeciles, morons, borderline, normal, bright, very superior, and genius.

The mental difference is also affected by differences in intellectual development, Interest, learning as well as knowledge, main tendencies, and nature of an individual.

Differences in Intellectual Development

Individual differences exist among peoples based on the difference in their intellectual development that includes their intelligent or foolish or wise behavior, level of mind (common or dull-minded), etc.

Interest

The variations occur among individuals with specific tastes and interests. Some take interest in meeting people, attending social functions, and are very fond of picnics and group excursions, whereas other feel happy in solitude, avoid social gatherings and are interested in meditation or enjoy the company of books.

Gender, family background, level of development, differences of race, nationality, etc. all also influences the interest of an individual.

Learning and Knowledge

Some learn more easily and can make use of their learning more comfortably than others. For some, one method of learning or memorization is more suitable, while for others, a different method suits. In the same way suitability of the learning environment also depends upon the individual nature of the learner. Therefore, there are wide differences among individuals based on their learning and knowledge.

Main Tendencies

The main tendencies like kind-hearted, strict, laughing, Cheerful, sad, disappointed, collective, and curious nature of the peoples also contribute towards individual differences.

Nature

Individuals differences also exist based on the nature of the people. Some are wicked by nature while others are polite by nature.

Motor Abilities

Individual differences also exist due to differences in motor abilities of individuals like reaction time, speed of action, steadiness, resistance to fatigue, and the rate of muscular movement.

Nationality

Individuals of different nations differ in respect of physical and mental differences, interests, personality, etc. There are differences in outlook (physical appearance), behavior, etc. of individuals based on their nationality.

Personality

Personality is also considered a significant element in individual differences. Different psychologists classify individuals into different categories based on their personalities. The classification of individual's personalities suggested by different psychologists is given below:

Spranger divided individuals into six categories based on their personalities, that is, Theoretical, Economic, Aesthetic, Social, Political, and Religious.

Jung classified individuals into three categories based on their personalities, that is, introvert, extrovert, and ambivert.

Trottor classified individuals into two categories based on their personalities, that is, stable and unstable-minded individuals.

Jordon also classified individuals into two categories based on their personalities, that is, active and reflective individuals.

Thorndike classified individuals into four categories based on their personalities, that is, abstract, ideational, object, and sensory thinkers.

Terman classified individuals into nine categories based on their personalities, that is, genius, near-genius, very superior, superior, average, backward, feebleminded, dull, and idiot.

Based on personality, individuals may be classified as Honest – Dishonest, Aggressive – Humble, Social – Isolated (Alone), and Critical – Sympathetic.

Physical Difference

Individuals differ in height, weight, the color of skin, the color of eyes and hair, size of hands and head, arms, feet, mouth and nose, length of waistline, structure as well as the functioning of internal organs, facial expression, mannerisms of speech and walk, hairstyle, and other such native or acquired physical characteristics.

Individuals differ in their appearance, that is, tall or short, thin, or fat, fair or black, normal or handicapped. The body built of individuals may influence their self-concept.

Individuals differ in their chronological age. According to the chronological age of individuals, little variation in methods and motivation makes their learning possible.

Individuals differ from each other based on their level of fitness and fatigue. Some are very fit but others are not. Some are feeling tired very soon, but others are working for long hours without having a feeling of fatigue.

Individuals differ in their physical maturity. Individuals have a different level of mental and emotional maturity at the same age. The difference in physical maturity of individuals affects their readiness to learn.

Individuals differ in their physical maturity. Individuals have a different level of mental and emotional maturity at the same age. The difference in physical maturity of individuals affects their readiness to learn.

Individuals differ in their health status. Malnourishment influences the learning efficiency of an individual, that is, poor learning efficiency. An individual having good health learning with ease and possess the best learning efficiency.

Social and Moral

Individuals differ in respect of their social and moral development. Some are adjusted to various social situations with ease and lead a happy social life. But those who are socially handicapped (unsocial or anti-social) find it difficult to adjust with others and lead an unhappy social life. Similarly, people also differ in respect of ethical and moral sense.

6.3 Causes of Individual Differences

Psychologists have enlisted many causes of individual differences, out of which important causes are enlisted and discuss in detail as follows -

- Acquired Powers
- Age

- Caste, Race, and Nation
- Economical Condition
- Educational Condition
- Emotions
- Environment
- Family Background
- Gender
- Health
- Heredity
- Intelligence
- Maturity
- Mental Development
- Motor Ability
- Personality
- Special Abilities
- Temperament

Acquired Powers

Psychologists have proved that acquiring power is found more in some or less in some. One child understands the subject easily, because of having acquired power, and the other understands it later. In the same class, any student has the fast ability to learn while others have the slow. Someone gets best marks in the examination, then someone common, we call them intelligent or dull based on it. Individual differences are seen because of this type of receiving power.

Age

The physical, mental, and emotional development of the child is done according to his age. So, the difference is seen in the child of different age.

Caste, Race, and Nation

Caste, Race, and Nation have an important place in the causes of individual differences. For example, the children of the Brahmin caste are studious, the children of Kshatriya are a lover of battle and courageous and the children of Vaishyas are experts in trading.

American children are more intelligent and skillful than the children of Negros. In the same way, the physical, mental, and emotional characteristics of one nation are different from others. We can recognize the person of different countries due to the causes of individual differences.

Economical Condition

The economical condition of family/parents affects physical, educational, emotional, and social development. The children of two economic classes can't have similarities and equality.

Educational Condition

Individual differences are caused by the education of the children. Man is properly developed by education and he becomes courteous, serious, and thoughtful. Education makes him different from the illiterate and uncivil man.

Emotions

Differences are seen among the men due to emotions. Men are seen angry, quarrelsome, and strict, while other is laughing, lover of peace and kind-hearted. Thus, individual differences are also affected by the emotional factor. The emotional stability of the individual is differently affected by physical, mental, and environmental factors.

Environment

Environment significantly influences individual differences. Changes in a child's environment are reflected in the changes in his personality. Psychologically, a person's environment consists of the sum of stimulation which receives from conception until his death. The environment consists of physical, intellectual, social, moral, political, economic, and cultural factors.

The environment is the significant cause of the individual difference. Under the environment, man is affected by the environment of family, social, geographical, and cultural environment. According to that, he has physique, mental development, living, behavior, conduct, and thinking.

For example, the child of an educated and well-mannered family is different from the child of an uneducated family. Differences are seen between the children of village and city, cold country and hot country. In a country that has a cold environment, the people, who belong there, are healthy and hard-working, and the people who belong to the country of the hot environment are lazy and weak.

Family Background

The children, who join the school, belong to whichever families and community, differences are found in their backgrounds. For example- the children of the highly educated rich family are quite different from the children of uneducated and lower-class families. Children emotional, social, moral, and appearance development is affected by their family and society. Individual differences are seen in the case of different family and social backgrounds.

Gender

There is a difference in the physical, mental and emotional development of boys and girls. From the physical point of view, a girl develops faster than a boy. The physical development of girls takes place a year or two earlier than boys. Girls are taller (11-14) & heavier than boys (after 15 boys are taller and heavier). Due to this development, the difference is found in mental development.

There is an affinity between nature and other virtues of personality. For example, boys are strict, brave, hard, choleric, efficient, competent, and hard-working by nature while the girls are soft, kindhearted, shy, affectionate, sympathetic, tender, and peace lovers.

Health

Individual difference is found due to physical health. Some are healthy and powerful, some people are weak, thus differences are found in their physical health and working capability. Physical health is related to mental health. There is much difference between healthy and unhealthy men. Physical health is the basis of individual differences.

Heredity

The important basis of individual difference is heredity. Psychologists Galton, Pearson, Turman, Mangugal, and Binet have proved it. Heredity is the important cause of the physical, mental, and conducts characteristics of man. The transition of ancestral virtues is found from one generation to another and that's why differences are seen in man.

For instance, the children of intelligent parents are intelligent, and the children of dull parents are dull. Sometimes differences are found between the children of one parent. They are a little bit different in mental power, nature, and other virtues from one another. They are so because of heredity.

Intelligence

Intelligence is accepted as innate capability. Yet the development of capability is related to age and environment. Differences are found in men due to intelligence. Hence in case of differences, found in men, they are put in such sequence, which can vary from foolish to talented. The difference in intelligence creates much difference among men.

Individuals, who are below the average in intelligence and mental age, find much difficulty in learning, and the average intelligent persons can learn quickly.

Maturity

Maturity is generally related to the age of a man. Physical and mental maturity comes after the birth of a child gradually. Some children are soon physically and mentally developed, maturity comes in those children early. The education of the child is closely related to maturity. This maturity comes in any child soon or in other later. Thus, this is also an important cause of the individual difference.

Mental Development

Mental abilities are not developed equally in all children. Intelligence, imagination, observation, logical power, memory, and the capability of learning come under mental abilities.

Intelligence is the most important among them. Individual differences are found due to the mental age and physical age of children.

Motor Ability

Due to motor-related ability, some people do work soon and skillfully. In the motor skill, there is intelligence along with age. According to this, differences are found between different men.

Personality

Personality is the sum of all traits of a man. Everyone has physical, mental and emotional, and intellectual traits different from others.

From the physical point of view beautiful- ugly, fatty- thin, from the emotional point of view strict-soft, quarrelsome –humble, lover of peace, courteous from the intellectual point of view, intelligent and dull men are found. Individual differences are found because of these types of personality traits.

Special Abilities

Everyone has some abilities besides common abilities. These mental abilities are related to mental, artistic, personality-related, and motor skills. Everyone cannot do the same work. When they select the occupation according to their interest and special ability, they succeed. Individual differences are seen in scientists, doctors, engineers, teachers, politicians, artists, and musicians due to special abilities.

Temperament

Some people are by temperament active and quick, while others are passive and slow. Some are humorous, and others are short-tempered.

Other causes of individual differences are achievements, aptitudes, character, interests, sentiments, and motivation of individuals.

Summary

Individual differences are the variation or deviations among individuals with single characteristics or many characteristics. It is the differences in the learning, retention, and transfer of information of an individual.

The basis of individual differences is physical, cognitive, motor ability, achievement, emotions, interest and aptitude, attitude, beliefs and opinions, learning, social development, moral development, knowledge, and wisdom.

Individual difference is also defined as the variation in motivation, intelligence, maturation, and environmental stimulation.

The personality of an individual is unique. Individuals differ from each other to all the dimensions, aspects of behavior, and personality traits. No one can be said to be exactly like another.

The basis or factors responsible for individual differences are - physiological, psychological, hereditary, and environmental.

Individual difference is universal phenomenon and characteristic of all living organisms. Individual differences are blessing of nature. Nature, heredity, and environment are basis and play significant role for individual differences.

There are various causes of differences like acquired powers, age, caste, race and nation, economical condition, educational condition, emotions, environment, family background, gender, health, heredity, intelligence, maturity, mental development, motor ability, personality, special abilities, and temperament etc.

Keywords

- **Individual differences** mean the differences of one man from other in color, physique, special ability, interest, nature, achievement, and other virtues of man.

- **Physical or physiological** differences are the differences that are created on account of the variations in terms of the physical or physiological makeup of an individual's body.
- **Psychological differences** are the differences in which psychological conditions are generated differences in terms of varying intellectual potentialities, interests, attitudes, aptitudes, emotional, social, and moral development, etc.
- **Inherited traits** are the mental, physical, and temperamental traits.
- **Acquired traits** are cultural, educational, emotional, and social traits.

Self Assessment

1. Which of the followings play important role in individual differences?

A. Nature only
B. Environment only
C. Heredity only
D. Environment, heredity and nature

2. Who said, "Today we think that in the individual differences, only such aspects of whole personality should be included, which can be measured.''

A. Charles Darwin
B. Skinner
C. Tailor
D. Thomas

3. Auditory and Visual are the types of

A. Aptitude
B. Emotion
C. Learning styles
D. Memory

4. According to Carter, individual difference means-

A. the deviation of individuals from the group average
B. the deviation of individuals in measurable difference
C. the variation among individuals in regard to single or a number of characteristics
D. the deviation of individuals within the group average

5. Individual differences, based on cognitive abilities, deals with

A. Creative expression
B. Steady expression
C. Kinesthetic expression
D. Balanced expression

6. The individual differences may be generally grouped into

A. two broad categories
B. three broad categories
C. four broad categories

D. five broad categories

7. The physiological differences created on account of the variations in terms of
A. aptitudes
B. attitudes
C. interests
D. physical makeup

8. McNemar and Terman found that boys committed ____ time more faults in speech than girls.
A. two
B. three
C. four
D. five

9. Which of the following is associated with expression of emotions?
A. Depression
B. Peaceful
C. Immature
D. Amusement

10. Who among the following classified personality into two categories?
A. Trottor and Jung
B. Terman and Jordon
C. Jordon and Trottor
D. Terman and Thorndike

11. An individual understands a subject easily, because of having
A. social power
B. physical power
C. acquired power
D. mechanical power

12. The _____ of an individual is done according to his/her age.
A. emotional development only
B. mental development only
C. physical development only
D. emotional, mental, and physical development

13. An individual is properly developed by the education and becomes
A. courteous, serious, and thoughtful
B. courteous and thoughtful
C. serious and thoughtful

D. courteous and serious

14. The change in _____ resulted changes in _____.

A. personality, environment

B. environment, personality

C. physique, intellect

D. intellect, physique

15. Which of the following statement is correct?

A. Boys develop faster than girls.

B. The rate of development is same in girls and boys.

C. Girls develop slower than boys.

D. Girls develop faster than boys.

Answer for Self Assessment

1.	D	2.	B	3.	C	4.	C	5.	A
6.	A	7.	D	8.	B	9.	C	10.	C
11.	C	12.	D	13.	A	14.	B	15.	D

Review Questions

1. Write your opinion about the concept of individual difference.
2. Explain the causes of individual differences.
3. Discuss various types of individual differences.
4. Do mental differences play a significant role in individual differences? Justify.
5. Describe the contribution of achievement, aptitude, attitude, physical, and intelligence in individual differences.

Further Reading

- Advanced Educational Psychology by Dr. S. K. Mangal, Prentice Hall of India Private Limited.
- Development of Learner and Teaching Learning Process by Laxmi Publications (P) Ltd. for Lovely Professional University, Phagwara.
- Fundamentals of Educational Psychology by M. Dash and Neeena Dash, Atlantic Publishers and Distributors.
- Fundamentals of Educational Psychology by Dr. J. S. Walia, Ahim Paul Publishers.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial

Board, Ramesh Publishing House.

Online Links

- http://dspace.lpu.in:8080/jspui/bitstream/123456789/506/3/DEDU402_DEVELOPMENT_OF_LEARNER_AND_TEACHING_LEARNING_PROCESS_ENGLISH.pdf
- https://www.scholarify.in/learners-characteristics/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

Unit 07: Factors Affecting Teaching

CONTENTS

Objectives
Introduction
7.1 Teacher
7.2 Learner
7.3 Support Material
7.4 Instructional Facilities
7.5 Learning Environment
7.6 Institution
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Readings

Objectives

After studying this unit, you will be able to:

- use appropriate support material in teaching-learning process
- understand the role of learner as an important factor affecting teaching,
- explore the benefits of instructional facilities for teaching-learning process,
- analyze various factors influencing the selection of instructional facilities for teaching-learning process.
- explore the role of learning environment as a factor affecting teaching-learning process,
- analyze the contribution of institution as a factor affecting teaching-learning process.

Introduction

In this unit, we are going to discuss the teacher, learner, support material, instructional facilities, learning environment, and institution as important factors affecting teaching.

7.1 Teacher

Teachers are the foundation or base for their students. Teachers play the most significant/important role in their student's life by providing support, boosting their confidence, guiding them in the right direction, and of course teaching them.

In the learning-teaching process, Teachers are the facilitator of learning. The best teacher is one who can apply the best teaching method to teach students and guide them towards a quality learning process.

The various factors, based on which the various qualities of a teacher are derived, are - adjustment level & mental health, approachability, behaviour & personality, colleague, co-creator, discipline, experience, facilitator, friendliness, knowledge of learners, leader, planner, professional training,

qualification, relation with learners, skills, subject knowledge, subject matter, and transmitter of knowledge.

The description of the above-mentioned factors is given as follows:

Adjustment Level & Mental Health

Teacher behavior & effectiveness is influenced by the level of adjustment between personal and professional life, state of mind, and mental health. It is very important to control and manage the teaching-learning process.

Approachability

The teacher should be within the easy approach of the learner. The teacher must invest time to solve the learner's problems. The teacher must open in his/her approach and always welcome the learners with a positive note when they approach.

Behaviour & Personality

The teachers must leave a positive impression on the learners through their actions, behavior patterns & working styles, and personality traits. Good Behavior and an effective, as well as impressive personality, leave a significant impression on the mind of the individuals. Teachers are role model for their students. There is a significant impact of the personality of the teacher on their students. Students imitate or follow the behaviour of their teachers.

Colleague

Teacher's humility and ability to reach out to other colleagues, without any prejudice and bias, is more important for forming good relationships. Teacher's over-involvement in matters of his/her colleagues can cause problems for him/her. The teacher is the best judge of the extent of his/her involvement. He should be receptive, supportive, and a team player.

Co-creator

National Curriculum Framework-2005 visualized teachers as co-creator of knowledge or knowledge partners of learners.

A teacher motivates learners to frame their questions about various observations.

A teacher asks learners to interpret a situation in their way and identify the probable solution of a problem with scaffolding by teachers.

A teacher encourages the learner to work in a group and become an active member of the group.

A teacher keeps learners active and motivates them to observe, react and reflect continuously.

A teacher helps learners in evolving new knowledge using their previous knowledge through discussions, debates, inquiry, or experimentation.

Discipline

A teacher must follow discipline in the teaching-learning process to develop positive behaviour and discipline among students. Rule to be followed by the teacher so that every activity should be at right time and for providing a safe as well as secure learning environment for students.

Experience

An individual acquires high qualifications which can make him/her qualified for teaching but lacking in experience which ultimately hamper his/her progress. Therefore, teachers can get a better understanding of the different topics or complex formulas, with high qualifications, but experience helps teachers to deal with the students and prepare them for how to teach students.

A teacher experiences real problem related to the teaching-learning process in the classroom with experience. A teacher about the what, why, and how of the teaching-learning problems through his/her classroom experience. A teacher became the expert or master with experience only.

A teacher learns many new things in teaching with increased teaching experience. A teacher can employ the learned things in the next teaching situation. It is observed that on the very first-day teacher may or may not or less effect on students, but after 5 years of teaching, the same teacher can have more effect on students. Therefore, experience plays a significant role.

Facilitator

A teacher is a facilitator of learning when s/he is providing certain guidance to bring about learning of students by way of their interaction with relevant instructional components.

As we know to facilitate means to promote, to help forward, or to make things easy. Therefore, the learner's role of interacting and moving forward is emphasized, whereas the teacher's role is in the background as a guide and as a facilitator of learning.

As a guide and as a facilitator, the teacher's role is to promote learning, to help learners, to develop more and more by learning, by providing them a conducive environment, to interact within the order, and to bring about learning as well as further development of learners.

Friendliness

When a student is friends with a teacher, it doesn't mean that the student stops treating the teacher as an authority figure. As we know that respect is a virtue that is mutually earned, and it's easier to develop esteem between two friends than two people stereotyped to be enemies. A friendship leads to comfortable student-teacher talks and mutual regard rather than one party commanding reverence because of superiority.

When a teacher, a source of authority, becomes a friend to a student, then they influence more and in a significant way the student in and out of the classroom. The interaction with a teacher after the quizzes and homework assignments gives learners a more positive outlook on school and adulthood.

Knowledge of learners

A teacher must have the detailed knowledge of their students or learners. S/he must know the academic, cognitive, and social as well as emotional characteristics of the learners. S/he must be aware of the individual differences, learning patterns/styles, needs, and abilities of learners.

Leader

A teacher should share various responsibilities in the school, or with the management for the success and betterment of the school. For example, in various school committees, responsibilities to organize various events like co-curricular and professional development activities for fellow teachers, etc. S/he is supposed to keep the professional aim in sync with the institution's vision and mission. S/he has to complete a task or sometimes develop and maintain a positive and effective relationship among the class. Therefore, a teacher plays the role of an effective and efficient leader.

Planner

The role of a teacher as a planner is quite visible. A teacher plans many things for the teaching-learning i.e. for learners, subject, and school. In these types of planning, a teacher work as a planner. The description of important core steps involved in any type of planning in the teaching-learning process is as follows:

Objective: Every type of planning has some objectives. It may be an explanation of any concept, reflection on any practice, observation of any event or development of life skills, etc.

For whom: Learner is the center of every planning in the teaching-learning. Therefore, the learners' abilities, strengths, weaknesses, etc. are to be kept in mind while planning anything for them.

When: Whether it is lesson planning, assessment planning, or any event planning, as a planner, teachers should keep in mind the time i.e., When will it (any event/activity) take place?

Where: The place of the event i.e. the classroom or the school premises or outside of the school should be kept in mind when teachers are planning the place and space for an event or activity.

How: The appropriate strategy for execution is also an important component of planning. As a planner, a teacher has to plan the method, media, process, sequence, etc. which will help to execute the plan in the desired manner.

Outcome: A good planner always has plans about expected outcomes/learning outcomes.

Being a teacher, an individual should also plan the desired learning, which helps in executing the plan on the right track to facilitate learners.

Professional Training

A teacher must have the appropriate professional training to teach a specific subject to a particular class. It is an important factor in being able to teach that class effectively. For teaching in the public school system, teachers should have taken courses in the subjects they wish to teach. For teaching college-level courses, a Ph.D. degree in the discipline or a related field is normally required. Effective teachers engage in continuing education to stay abreast of developments and advances in their field.

Perspective teachers are trained professionally through micro-teaching, simulation (simulated teaching), and school-internship in schools. Professional training is provided to in-service teachers through seminars, workshops, refresher courses, etc.

Qualification

A higher qualified teacher can provide high scholarly instructions which can have more effect than the general graduate teacher. Many teachers hold different degrees which is a sign of their higher education qualification. A teacher is just B.A. and another teacher is M.A., M.Ed., Ph.D. if we compare both, then is sure that a higher qualified teacher can yield good teaching results.

Qualification matters the maximum amount because of the professional training. An educator who features a higher degree apparently will have a far better knowledge of the topic. Someone who has secured professional training like B.Ed., M.Ed., M.Phil., Ph.D., etc. is going to be ready to yield better learning outcomes as a student than someone who has not been professionally trained.

A trained and more qualified teacher will help students to inculcate the attitude of dialogue, questioning, investigation, inquiry, and important thinking in them. His or her lessons are rich in content and have relevance. The trained teacher does not use the mechanical mode of instruction that's are dull for the learners.

The academic qualifications for teachers are – B.A., M.A., M.Phil., Ph.D.

The professional qualifications for teachers are - N.T.T., E.T.T., B.Ed., M.Ed.

The eligibility qualifications for teachers are - T.E.T. (Teaching Eligibility Exam), and U.G.C. (For lectureship and junior research fellowship).

Relation with Learners

A teacher who only relies on lecture methods fails to grab attention and appreciation from the learners. That teacher's teaching suffers significantly. The teacher must be ready to connect with learners. There should be a culture of dialogue for creating interesting teaching instruction.

A teacher has to help students in developing an honest civic and conscience, kindles student's intellectual curiosities and quests, and always respects his or her students. A teacher must be aware and sensitive to the social-cultural and economic background of his or her students.

Skills or Teaching Skills

Skill is the ability to do any work in a better way. If a teacher has teaching skills, then he can provide effective teaching.

From the training point of view, we classify teaching skills into three broad categories. These are:

- Core teaching skills (common for all subjects)
- Specific teaching skills (for specific subject areas like Language, Social Science, Science, Mathematics, etc.)
- Target group-specific skills (for exceptional children).

Generally, the teaching skills are associated with the attitude towards students, connect to students, effective communication skills (for better involvement and engagement), explanation of concepts, guidance, human relationship, monitoring, passion for teaching, teaching aids, teaching approach, teaching methods, and teaching techniques.

In 1982, The National Council of Educational Research and Training (NCERT) in its publication 'Core Teaching Skills' has laid stress on the following core teaching skills:

writing instructional objectives, organizing the content, creating set for introducing the lesson, introducing a lesson, structuring classroom questions, question delivery and its distribution, response management, explaining, illustrating with examples, using teaching instructional

facilities, stimulus variation, the pacing of the lesson, promoting pupil participation, use of blackboard, achieving closure of the lesson, giving assignments, evaluating the pupil's progress, diagnosing pupil learning difficulties and taking remedial measures, and management of the class.

The present time is the time of science and technology; therefore, the teacher must acquire the ICT skills to use the technology effectively in the teaching-learning process.

Subject Knowledge

There comes a time when teachers who do not know a particular subject are assigned to teach that subject. In such a situation, passion and motivation to research about the topic and teach students to help them. Subject Knowledge does matter. However, the chances of assigning subjects that are not the forte of a teacher are very rare. A teacher must have mastery over the subject matter and a passion for the subject. A teacher must possess scholarly knowledge related to his/her area of specialization.

Subject Matter

The syllabus of the subject is formed by educationists and psychologists keeping the mental and physical capabilities of students in mind. The important subject matter-related factors which influence teaching are the difficulty of the task, length of the task, meaningfulness of the task, similarity of the task, organized material, and life learning. The teacher must have the passion and motivation to research in the field of education.

Transmitter of Knowledge

When a teacher is part of the environment in which learners are learning, or is participating in the process of instruction, the s/he acts as a transmitter of knowledge.

A teacher introduces a lesson in the class, explains a concept to learners, clarifies doubts of learners with suitable illustration, draws a diagram while explaining to learners, asks questions to learners, transacted the content to learners, share learning experiences within the class, use different methods and different audio-visual aids in the teaching-learning process for the transformation of knowledge to the learners.

There are few other factors like basic potentials, goals, mental health, physical health, readiness, willpower, etc. of teachers which affect teaching.

7.2 Learner

Like a teacher, the learner also plays an important as well as significant role in teaching. The whole teaching process is organized for the student. As the teacher and learner are the important components/ends/key figures of the teaching-learning process. The student's/learner's characteristics and way of learning influence his/her learning and achievements in learning.

The various factors, based on which the various characteristics or qualities of learners are derived, to be classified broadly into two categories:

- Physiological Factors
- Psychological Factors

Physiological Factors

Physiological factors include age, atmospheric conditions, diet & nutrition, fatigue, physical health, sense perception, and time of learning and their description is as follows:

Age

It is a fact that the learning capacity varies with age. Some learners can better be learned at an early age, and some during adulthood. On the evidence of experiments conducted, Thorndike said that mental development does not stop at 16 or 18 but increases up to 23, and halts after 40. Learning proceeds rapidly between 18 and 20 remains stagnant till 25 and declines up to 35. Therefore, age accompanies mental maturation.

So some complex problems cannot be solved till the person is sufficiently mature. Children learn school subjects more easily than uneducated adults can learn. This is perhaps because the children's minds are not burdened with worldly problems, and they have a more flexible nervous system.

But there are instances when a person of 50 made remarkable progress in learning new subjects like music, a foreign language. Mahatma Gandhi studied Hindi at the age of 40. Tagore began to study fresh scientific subjects even after 50.

It has been seen that as a child proceeds towards maturity from the physical and mental viewpoint, the rate of his learning increases, and his level of learning rises.

Atmospheric Conditions

High temperature and humidity lower mental efficiency. Low ventilation, lack of proper illumination, noise, and physical discomfort (as we find in factories and overcrowded schools) hamper the learning capacity. Distractions of all sorts affect the power of concentration and consequently the efficiency of learning.

Diet & Nutrition

Nutrition is responsible for efficient mental activity i.e., the quality of diet matters. Poor nutrition adversely affects learning. The type of food also has some effects i.e. a balanced diet has a positive effect and an unbalanced diet has a negative effect. A poor diet harms health, and consequently upon the learning capacity of the learners.

Fatigue

Muscular or sensory fatigue causes mental boredom and indolence. Many factors in the home and school environment may cause physical and mental fatigue, such as lack of accommodation, bad seating arrangement, unhealthy clothing, inadequate ventilation, poor light, noise, over crowdedness, and pure nutrition. Longer hours of study also cause fatigue which affects the learning capacity.

Physical Health

Physical health has a direct relation to learning. Ill health hampers learning. A sound mind is only in a sound body. Sound physical health gives vigor and vitality to pursue learning activities for a longer education. A diseased person is handicapped by the normal physical strength necessary for any mental activity.

Sense-Perception

Sensation and perception are the basis of all cognitive learning. Weaker the power of perception, lesser the amount of learning. A blind man learns far less than a normal person. Impairment of sense organs is a handicap in the process of learning.

Time of Learning

Morning and evening hours are the best periods of study. During the day, there is a decline in mental capacity. Experiments on children have shown that there are great variations in learning efficiency during the different hours of the day.

Psychological Factors

Psychological factors include attention & interest; goals in life; goal–setting & level of aspiration; intelligence, aptitude, attitude, interest, and attention; level of motivation and will to learn; level of aspiration; level of aspiration and achievement motivation; maturation; mental health; motivation & interest; motive & behaviour; previous learning experiences; readiness & will power; and reinforcement and their description is as follows:

Attention & Interest

Both attention and interest are related to each other and part of the motivation. Interest originates attention and attention creates interest. If a learner has an interest in a particular subject, then that learner pays more attention to that subject and vice-versa.

Goals in Life

The immediate and ultimate goals of an individual's life affect the process and products of learning. An individual's inclination towards learning and ways of looking the thing depends on his/her goals in life.

Goal –Setting & Level of Aspiration

The goal setting i.e., fixation of goal and the level of aspiration of an individual plays a significant role in the learning. The fixed goals give a specific direction to an individual and a high level of aspiration makes the learning easy, comfortable, and significant outcome.

Intelligence, Aptitude, Attitude, Interest, and Attention

Intelligence, Aptitude, Attitude, Interest, and Attention are the basis for the Cognitive Development of an individual. They have Positive relation with Learning. But their relationship with learning is not linear.

Generally, a learner learns with his conformity and with his IQ. Despite high IQ if a learner does not have aptitude and attitude for the subject, then s/he cannot learn properly. Besides, a learner may have all the above three but if he does not have an interest in a subject then s/he would not be able to pay her/his attention to the subject. As a result, the teaching-learning process cannot be effective. Therefore, all the above factors have their effect on the teaching-learning process.

Level of Motivation & Will to Learn

It is seen that, when a student is not motivated to learn an activity, it is difficult to teach him anything. The will to learn is necessary along with motivation. The level of the learner's will and motivation decides the duration of his learning.

Level of Aspiration

Every individual desire to attain something at each level of his/her life. Some aspire more than their ability and capability, some aspire according to their ability and capability, and some aspire less than their ability and capability. This is called aspiration level in psychological terminology. Because this decision is taken by the individual, himself, so, it functions like self-motivation.

It has been seen in the context of the learner's learning that a learner who wants to have higher achievement in the class, his/her level of aspiration is higher, and he/she is more active, (that is, his/her aspiration level is higher). All this is helpful in his/her learning. Aspiring more than one's ability and capability and failure to achieve it disappoints him/her which obstructs his/her learning. Aspiration level is acceleratory only when it is according to one's ability and capacity.

Level of Aspiration and Achievement Motivation

The level of aspiration and achievement motivation possessed by a learner plays a significant role in his/her gains in learning. The learner's level of aspiration and achievement motivation has to maintain a reasonable level i.e., not too high or not too low. Because a high level of aspiration and achievement motivation leads to frustration if not achieved whereas a low level of aspiration and achievement motivation does not prepare a learner to try for the things for which s/he is quite capable.

Maturation

Maturation, here, means the physical readiness of the learner for learning. It plays a significant role in learning and acquiring reading and writing skills as well as knowledge. It helps an individual to determines - What to learn and How to learn.

Mental Health

Good mental health is the sound base for better learning. Mental tension, complexes, conflicts, mental illnesses, and mental diseases hamper learning. A maladjusted individual finds it difficult to concentrate. Concentration needs mental poise and the absence of mental conflict or complexity. Some learners find it difficult to prepare for the university examination, simply because of fear of the examination and anxiety neurosis. A calm, serene, and balanced mind, here, is the power to concentrate and learn better.

A mentally healthy learner takes interest in learning and feels less fatigue, so s/he learns sooner. On the contrary, a learner suffering from mental ailments (as fear, anxiety, and frustration, etc.) does not take interest in learning. Thus the process of teaching-learning cannot be run smoothly and efficiently.

Motivation & Interest

Motivation and interest are the foundation of learning. No learning takes place unless it is motivated. Purposeless learning is no learning at all. Every learner is impelled by some motive to

learn new things. In the absence of motivation, the learner cannot feel interested in the act of learning. A learner's behaviour in learning is energized by motives, selected by motives, and directed by motives.

Motive & Behaviour

Motive energies, select, and direct behaviour which are explained as follows:

Motives Energize Behaviour

Hunger and thirst induce the acquisition of food. Reward induces further success. Punishment or failure induces action for achievement.

Motives Select Behaviour

Only those acts of learning are selected which are supported by some motive. A boy visits a village fair. He sees only those toys, objects, or things that interest him.

Motives Direct Behaviour

These activate the person, enthuse him and impel him to do the desired action. These direct his energies to reach the desired action and goal. Sultan of Kohlar was directed by hunger to reach the bananas and that way he strived and learned the way.

Previous Learning Experiences

Learners' previous learning experiences, with similar or somewhat similar material or situation, decides the learner's rate of and ease in learning. It prepares the base for new learning for the learner.

Readiness & Will Power

A learner's readiness and power to learn is a great deciding factor about his/her results in learning. No power on earth makes an individual learn if s/he is not ready. If an individual is ready/has a will to learn then the learning is effective or the learner himself/herself finds a way for effective and better and learning.

Reinforcement

Reinforcement has both positive and negative effects on learning. Positive and negative reinforcement has positive and negative effects respectively on learning.

Thorndike's law of effect is applicable most commonly. Experimental evidence shows that praise stimulates learners to work and learn, although it does not produce much effect on superior and elder learners.

Elder learners are more sensitive towards reproof and blame than younger children are. The rewards of all sorts are powerful incentives to learn. Punishments, arousing fear in anticipation, may influence the learner to work and learn, but not in all cases. Sometimes punishment creates a bad reaction, retaliation, hatred, and disgust.

Experimental studies show that punishment interferes with complex learning activities when punishments become frequent. The absence of punishment becomes a basis of low activity on the part of the learner. In the absence of fear, learners disobey and waste time.

7.3 Support Material

Support material is very essential which affects the teaching-learning process. It is an important resource in teaching. It includes textbooks, magazines, journals, periodicals, practice questions, teacher solution manuals, etc. It aims to support teachers and students in achieving outcomes of any subject. It is a set of tools that will improve students' achievement by improving the capacity of teachers.

Different teaching aids and support systems influence the way decisions are made and information is passed to students. It helps to analyze the area in which students are underperforming. This also helps teachers to gain a new skill to increase student learning by the use of effective strategies. It is a vast area that included many sub-sections to be worked upon by teachers to improve the overall learning process through effective use of tools, assessment methods, and professional development.

Support materials in teaching are effective tools for student assessment and scores, teaching strategies and lesson plans, standards and benchmarks, effective use of traditional, modern, and ICT-based tools.

The factors associated with support material that affecting teaching are - study material/subject matter, teaching aids (audio and video), and use of technology.

The description of the factors associated with support material that affecting teaching is as follows:

Subject Matter

Subject matter includes nature of subject matter, difficulty, length, meaningfulness, and similarity of the task, organization of learning material, and relation with life learning.

Nature

Subject Matter

Nature of the subject matter means its direct and indirect components and its formal and informal form. Text material can be direct for children of one level and indirect for children of another level. In the same way, it can be formal for the children of one level and informal for the children of another level. The direct and formal text material is helpful for an effective teaching-learning process.

Organization

If the text material is organized in a logical sequence i.e. from simple to complex and from direct to indirect and is presented in that form, the teaching-learning occurs in a more proper form.

Relation with Life

If the subject matter is related to the level of utility of present and future life of the children, then, it influences the process of teaching-learning. The more useful a subject matter is for life, the faster the children learn it.

Difficulty level

The subject matter is neither too difficult nor too easy from the viewpoint of the students, then teaching-learning is effective. The difficulty level of the subject matter is determined based on age, maturity, and related previous knowledge of the students to make the teaching-learning process effective.

Difficulty of the Task

The task should be of the appropriate difficulty level. It is neither too easy nor too difficult. It is as per the development level and ability of the learners. It is also based on the previous knowledge and experiences of the learners.

Length of the Task

The length of the task is inversely proportional to the learning of the learner. The learners learn quickly if the length of the task is less and vice-versa. The difficult task should be performed in small parts to learners for development the proper understanding of difficult tasks among learners.

Meaningfulness of the Task

There is a direct relationship or association between the learning outcomes and the meaningfulness of the task. It is easy for learners to learn a meaningful task that ultimately increases the rate of learning among learners.

Similarity of the Task

If a new task has some similarities with the already learned tasks, then the learners learn that new task very quickly and comfortably.

Organization of Learning Material

The logical organization of the learning material makes its learning easy and result in better learning outcomes. There must be an appropriate use of maxims of teaching while organizing the learning material i.e., concrete to abstract, direct to indirect, simple to complex, etc. While organizing the learning materials for the learners, then the focus of the teacher must be on the

physical and intellectual development of learners. If it is not considered by the teachers, then most of his/her efforts and energy of the learner will be wasted.

Relation with Life Learning

The task to be learned by the learners must be presented to them by teachers in an interrelated manner i.e., an appropriate interrelationship must be developed between the material of the different subject matter by the teacher before presented it to the learners. A significant association of the learning material or subject matter with real-life makes the learning of the learners more effective and permanent i.e., the effectiveness of the learning increases and forgetting decreases.

Teaching Aids

Teaching aids are an integral component of the teaching-learning process. The proper illustration and reinforcement of the concepts are done with the help of effective teaching aids. Therefore, the teaching aids, make the teaching-learning process more relaxed, full of excitement, effective, and permanent. The learners visualize the things, get the experience, understand, and comprehend the concepts with ease, interest, and excitement with the use of teaching aids that ultimately leads to better learning. Therefore, teaching aids are an important component of support material.

Use of Technology

The use of technology i.e., computer, LCD projector, mobile, internet, multimedia devices, smart board, interactive board, etc. make the teaching-learning process more effective and lively. Through the virtual and online modes of learning, learners learn the subject matter in an interesting way and get real-time experience.

7.4 Instructional Facilities

Instructional facilities are those facilities that assist a teacher (or an instructor) in the teaching-learning process, supplement teaching methods, and are themselves not as self-supporting as teaching methods. Instructional facilities play a great role in the effective teaching-learning process.

The instructional facilities include audiovisual instructional facilities (TV, Radio, Tape recorder, projectors film strips, internet, etc.). They follow the assumption that learning originates from the senses' experience. They help in better learning, retention, and recall, thinking and reasoning, activity, interest, imagination, better assimilation, and personal growth and development.

Instructional facilities include classrooms, laboratories (science lab, language lab, geography lab, computer lab etc.), library, seminar rooms, on-campus clinics, teaching aids, etc. It also includes the space that is used principally for the purpose of delivering formal instruction to learners. The availability of instructional facilities ensures effective teaching and if these are not available in adequate amount as per the number of learners/students then learners/students will not be able to learn properly.

Teaching aids are an integral component in any classroom. The many benefits of teaching aids include helping learners improve reading comprehension skills, illustrating or reinforcing a skill or concept, differentiating instruction, and relieving anxiety or boredom by presenting information in a new and exciting way.

Audio Instructional Facilities

These are instructional devices through which messages can only be heard. Examples of audio instructional facilities include language labs, radio sets, sound distribution sets, etc.

Visual instructional facilities

Instructional devices through which the message can only be seen are known as visual instructional facilities. Examples include posters, flashcards, charts, bulletin boards, maps, models, photographs, etc.

Audiovisual instructional facilities

These are those instructional facilities that help in completing the triangular process of learning, i.e., motivation, classification, and stimulation. They are instructional devices in which the message can be heard and seen simultaneously. Examples of audiovisual instructional facilities include television, video films, documentary films, etc.

Teaching instructional facilities according to projection or show is divided into projected and non-projected instructional facilities that are given below:

Projected instructional facilities

Visual instructional devices that are shown with a projector are called projected instructional facilities. Examples-slides, film strips, silent films, cartoons, etc. These are projected through an opaque projector (epidiascope) or an overhead projector.

Non-projected instructional facilities

Visual instructional devices that are simply presented without any projection equipment are non-projected instructional facilities. Examples include the blackboard, chart, etc.

Apart from these instructional facilities, there are two additional categories of teaching instructional facilities, they are displayed instructional facilities and presentation instructional facilities.

Display Instructional Facilities

Visual instructional facilities are spread before the audience for viewing information and instruction. Examples are posters, bulletin boards, models, exhibits, etc.

Presentation Instructional Facilities

Visuals instructional facilities are presented or projected before the audience for viewing, explaining, or presenting the message of the visuals, so that the audience gets a meaningful understanding of the subject. Examples are flashcards, slides, filmstrips, etc.

Projected Visual Instructional Facilities

Any visual instructional facilities that are used for magnification of the image on a screen in dark or semi-dark conditions can be called projected visual instructional facilities. There are three important methods of projection and they are listed below.

Methods of Projection

- Direct Projection: Use slide and film projectors
- Indirect Projection: Use overhead projector
- Reflected Projection: Use opaque projector and epidiascope

Non-projected Visual Instructional Facilities

Non-projected visual instructional facilities are those instructional facilities that are used without projection or the help of any projector.

Non-projected visual instructional facilities include -

Charts

There are many varieties of charts. Some common types of charts are briefly discussed below for your understanding.

Process charts are used to show steps in a process. For example, charts can show the life cycles of insects, energy cycles, etc.

Organizational charts are used to represent hierarchal relationships, the flow of communication among different departments in an organization.

Time charts are used to represent events, occurrences in chronological sequences, such as the evolution of man, political empires, etc.

A ***tabular chart*** represents data in tabular form for easy comparison and understanding. For example, types of plantations, etc., are represented in tabular form, which makes comprehension easier.

The ***tree chart*** shows the growth and development from a single source to many branches like in a tree. For example, the family tree is a familiar example.

A ***stream chart*** is opposite to a tree chart wherein many branches come together to converge into a single stream. For example, many rivers like Yamuna fall in Ganga, which then flows down to fall in the sea.

Sequence charts or flip charts are a collection of charts like flip charts used to show many events or series of events in succession.

Flash cards are brief visual messages on poster board.

A **poster** is displayed in a public place with the purpose of creating awareness among the people.

Pictures and Photographs are the representation made by drawing, painting, or photography, which gives an accurate idea of an object.

Graphs are the image that represents data symbolically.

Maps are the visual representation of an area.

Diagrams are the plan, sketch, drawing/outline designed to demonstrate/explain the working of something and clarify the relationship between the parts of a whole.

Display Boards

Blackboard or Chalkboard a vehicle for a variety of visual materials. and facilitates step-by-step presentation of the topic, creates a dramatic impact, and sustains learner's interest.

A ***White Board*** is also called a marker board or multipurpose board. It is used for writing with colored markers, surface for projecting films, slides, and transparencies.

Bulletin Board is a surface that displays bulletins, news, information, and announcements of specific or general interest.

Flannel Board and Flannel Graph is a flannel-covered flat surface. It is used to paste the messages written on thick paper and presented step-by-step to the audience to synchronize with the talk.

Magnetic Board is a board made up of a sheet of tinplate and used to pasted or mounted pictures and objects on it with small magnets.

Peg Board is pre-drilled with evenly spaced holes that are used to accept pegs/hooks to support various items like tools in a workshop etc.

Three-dimensional Models include various objects, specimens, globes, etc.

Audio instructional facilities include radio (mass broadcast medium), podcast (personalized broadcast medium), recordings, digital audio player, telephone, mobile, etc.

Television is an effective tool in expressing abstract concepts or ideas.

Activities

Field trip

A field trip is a structured activity that occurs outside the classroom. It can be a brief observational activity or a longer, more sustained investigation or project. It offers an opportunity for students to get exposure to real people, events and the opportunity to make connections with others.

Experimentation

The experiments are specifically useful in science subjects so as to relate theory with practice.

Dramatics: They can convey some message to society or the public at large. These are usually theme-based, and the students are assigned different roles.

Teaching Machines

Teaching machines are usually programmed and present a question to the user. As soon as the user indicates the answer, it provides the user with the correct answer. They are particularly useful in subjects that require a drill, such as arithmetic or a foreign language. The users can proceed at their own pace. They also have an opportunity to review their work. By using teaching machines in the class, teachers give more attention to individuals with specific problems or difficult areas of instruction.

Programmed Instructions

Programmed instructions are also useful instruments and work like teaching machines with the use of computers.

Benefits

1. Instructional facilities help in capturing the attention of learners in the classroom. Instructional facilities provide a variety of stimuli, which helps in making classroom teaching most effective.
2. The use of instructional facilities is not a haphazard exercise but based on maxims of teaching.
3. The more the number of sensory channels involved in interacting with instructional facilities, the longer will be the retention of information. Therefore, the learning will be effective and will last long.
4. Pictures, models, etc., helps in the inculcation of positive attitude of learners.
5. The teachers need to use visual or verbal instructional facilities to present accurate data in a sequentially organized manner and try to provide realistic learning experiences.
6. The varied learning experiences (cognitive, affective, and psychomotor) can be provided to the learners through instructional facilities. Instructional facilities supplement classroom teaching and cater to individual differences as well.
7. Instructional facilities promote scientific temper, which is one of the main goals of education.
8. Instructional facilities show the application of theoretical knowledge into practical applications.
9. Learners enjoy the novelty of handling new objects and learn new concepts through instructional facilities.
10. Instructional facilities facilitate the formation and attainment of concepts among learners. They concretize abstract concepts among learners and make them able to understand without rote learning.

Factors Influencing the Selection of Instructional Facilities

1. Select appropriate instructional facilities.
2. A suitable combination of the selected instructional facilities.
3. A sequence of instructional facilities.
4. The nature of the audience is an important factor. Audio-visual instructional facilities are used singly or in combination, thereby taking into consideration the following factors. Printed media are meant for literate people, whereas exhibits, pictures, and symbols are for less literate people.
5. The size of the audience must be taken into consideration. The internet or mass media, such as radio or television can be used to inform/influence a large number of learners.
6. Due consideration is given to teaching objectives. Therefore, select the audio-visual instructional facilities based on the objective of teaching, i.e., to bring about a change in - thinking or knowledge, attitude or feeling, and actions or skills.

7.5 Learning Environment

Learning environment refers to the diverse cultural, physical and social environment in which learners learn. It is also called the ecosystem of school or classroom or an environment where the teaching-learning process takes place. It includes biological, physical, and psychological components and their continuous interactions among them will determine the learning environment. Thus, we can say, the learning environment is an ecosystem wherein individual entities play a key role in creating it.

Learning environments have both a direct and indirect influence on learning, including their engagement in what is being taught, their motivation to learn, and their sense of well-being, belonging, and personal safety.

Learning environments filled with sunlight and stimulating educational materials would likely be considered more conducive to learning than learning environments with drab spaces without windows or decoration, incidents of misbehavior, disorder, bullying, and illegal activity.

Aspects of Learning Environment

Learning environment includes teachers' beliefs and behaviours, learners' beliefs and behaviours, school policies, motivation among learners and teachers, learners need and interests, appropriate ventilation and sunlight, etc.,

The learning environment includes the adults-learners and learner-learner interaction. It may also be considered important aspects of a learning environment and phrases such as positive/favourable learning environment or negative/unfavourable learning environment are commonly used in reference to the social and emotional dimensions of a school or class.

Components of Learning Environment

The important components of the learning environment are described as follows:

Classroom Environment

The classroom environment plays an important role in the learning process. It has a significant effect on both the teacher and learner. It is to be maintained by both the teacher and learners. The concentration of the learners is required for active participation in education. The teacher needs to focus on the behaviour of the learners along with other factors to improve the classroom environment so that learners listen to teachers' voices while interacting with learners.

Fatigue

The element of fatigue influences the construction of the school timetable in a number of ways. Learners are fatigued at certain periods or certain days. It is not only physical but also psychological in nature. It results in a definite weakening of attention and diminishing interest and effects of learning. Mental freshness is the greatest in the morning. This is also true after recess.

It has been observed that fatigue does not allow teachers and students to work properly. Some subjects are more fatiguing than others. They involve more mental strain and effort. So, it should be kept in view while constructing the timetable of a school that the difficult subjects are taught during early hours when the student's mind is fresh, or difficult subjects are kept earlier than the easier subjects, an easy subject is kept after one difficult subject and recess in between. Seasons also cause fatigue/ness. In summer due to heat, we do not like to work.

Physical Environment

Physical environment involves physical infrastructure like the building of the institution, cleanliness, furniture, laboratories, library facilities, teaching aids, arrangement of proper light, etc.

Natural Environment

The arrangement of fresh/pure air, adequate light, and peaceful (less noise) is required at the place of teaching-learning. The learners are fatigue in the absence of these, which has an adverse impact on teaching-learning.

Social and Educational Environment

The social environment includes family, society, community, school, etc. If learners have a proper social and educational environment at all places i.e., family, society, community, and school, then their teaching-learning process becomes effective. If the environment of any one of the above places is not favourable, then the process of teaching-learning is less effective.

Time of Teaching-learning

Time is the most important factor when the process of teaching-learning is undertaken. Morning time in hot countries and daytime in cold countries are favorable. The duration of teaching-learning has also a great effect on it.

Timetable

As we know that mental freshness is the greatest in the morning and after break/recess. The fatigue principle is true for days of the week also. Tuesdays and Wednesdays are considered to be the best days on which maximum work can be done. The duration of a class period should be 30 to 35 minutes for younger learners. Mathematics, English, Hindi, Science, Social Sciences, Science Practical, and drawing/Physical Education.

7.6 Institution

The institution should ensure the availability of all the essential facilities, requirements, resources, and services. The discipline of the institution should be followed in teaching while negative pressure in the institution should be avoided. The following aspects related to the institution have a significant impact on the teaching-learning process and learning of the learners.

- The achievements of the institution such as ranking of institution based on its academic performance, professional performance, performance in board exams, sports, competitions, etc.
- The infrastructure of the institution i.e., the building and facilities available in the institution.
- The concern of the management of the institution towards the welfare of teachers, the vision of the institution, the basis of recruitment, opportunities for professional enhancement, etc.
- The availability of proper material resources like books, teaching aids/material, computers, LCD projectors, essential instruments for Lab in the institution.
- The availability of proper physical resources such as cleanliness, furniture, laboratories, library, arrangement of proper light,
- The quality or qualification of recruited teachers and staff in the institution i.e., The availability of well-qualified, academically and professionally trained, and skilled teachers and staff members, etc.
- The stability of the teaching and non-teaching staff i.e., regular/permanent/ad-hoc/contractual/temporary.
- The student-teacher ratio in the institution i.e., the requirement of the required number of teachers as per the strength of students, no overcrowded classes, etc.
- The type of teaching methods used in the institution i.e., new, innovative, experiential, Blended learning, scientific, activity-based learning, constructivist approach, etc.
- The prevailing policies in the institution. The effectiveness of teaching is also affected by the policies framed by the institution. These policies can give autonomy to the teacher to choose teaching methods and various classroom activities resulted in an element of flexibility. If a teacher feels extremely controlled (classroom activities are controlled), then it will suffer his/her performance. The Administrative set up of an institution with variety and freedom of choice to the teacher generates a healthy teaching environment. Teachers are free to prepare a lesson plan and use a variety of teaching aids. It should be designed in such a manner so that balance of the relationship between the teacher-student, teacher-parent, teacher-school staff should be ensured.

Summary

The teacher is a supporter and facilitator for the learner in the teaching-learning process. The teacher must - act as a friend; have refined behaviour, a balanced personality, and knowledge of learners psychology; reach out to other colleagues; possess good mental health; be well adjusted, approachable, a co-creator of knowledge, disciplined, experienced, a leader, an expert planner, a professionally trained, well qualified, skilled, subject expert, the transmitter of knowledge, etc.

The learner plays an important as well as a significant role in teaching. The whole teaching process is organized for the student.

Physiological factors include age, atmospheric conditions, diet & nutrition, fatigue, physical health, sense perception, and time of learning.

Psychological factors include attention & interest; goals in life; goal–setting & level of aspiration; intelligence, aptitude, attitude, interest, and attention; level of motivation and will to learn; level of aspiration; level of aspiration and achievement motivation; maturation; mental health; motivation & interest; motive & behaviour; previous learning experiences; readiness & will power; and reinforcement.

The support materials are important catalysts of effective teaching/instructions.

The instructional facilities include audiovisual instructional facilities (TV, Radio, Tape recorder, projectors film strips, internet, etc.) Instructional facilities follow the assumption that learning originates from the senses' experience. Instructional facilities help in better learning, retention, and

recall, thinking and reasoning, activity, interest, imagination, better assimilation, and personal growth and development. Their availability ensures effective teaching.

Learning Environment and Institution are considered to be important factors affecting teaching.

Learning Environment refers to the diverse physical, cultural, social environment in which learners learn. It is also called the ecosystem of school or classroom or any environment where the teaching-learning process takes place. It includes biological, physical, and psychological components and their continuous interactions among them will determine the learning environment.

The institution should ensure the availability of all the essential facilities, requirements, resources, and services. The discipline of the institution should be followed in teaching while negative pressure in the institution should be avoided.

Keywords

Teachers are the foundation or base for their students.

Learners are the key figures of the teaching-learning process.

Support material is an essential resource in teaching and aims to support teachers and students in achieving outcomes of any subject. It is a set of tools that will improve students' achievement by enhancing the capacity of teachers.

Instructional facilities assist a teacher in the teaching-learning process and play a significant role in the teaching-learning process.

Learning environment refers to the diverse cultural, physical and social environment in which learners learn. It is an ecosystem of school/classroom/an environment in which the teaching-learning process takes place.

An **institution** is an organized place that provides all facilities, requirements, resources, and services essentially required for an effective teaching-learning process.

Self Assessment

1. From the training point of view, teaching skills can be classified into three broad categories.

A. five
B. two
C. three
D. four

2. Which of the following is most appropriate concerning the formation of a teacher's good relationship with his/her colleagues?

A. Teacher's humility to reach out to other colleagues without any prejudice.
B. Teacher's ability to reach out to other colleagues without any bias.
C. Teacher's humility to reach out to other colleagues without any bias.
D. Teacher's humility and ability to reach out to other colleagues without any prejudice and bias.

3. Which of the following is the correct sequence of steps of planning?

A. Objective, Whom, When, Where, How, and Outcome
B. How, Objective, Whom, When, Where, and Outcome
C. Objective, How, When, Whom, Where, and Outcome
D. Outcome, Whom, When, Where, How, and Objective

4. A learner's behaviour in learning is

A. only energized by motives
B. only selected by motives
C. only directed by motives
D. energized, selected and directed by motives

5. The factors affecting teaching related to the learners broadly classified into
A. four categories
B. six categories
C. two categories
D. three categories

6. In which of the following condition, the learner does not learn properly?
A. Leaner has an aptitude and attitude for the subject with a high intelligence quotient.
B. Leaner does not have aptitude and attitude for the subject with a high intelligence quotient.
C. Leaner has an aptitude, attitude, and attention for the subject with a high intelligence quotient.
D. Leaner has an aptitude, attitude, attention and interest for the subject with a high intelligence quotient.

7. Support material aims to support ____ in achieving outcomes of _____.
A. teachers and students; any subject
B. students; teachers
C. teachers; any subject
D. teachers; students

8. Which of the following statement is correct?
A. The length of task is directly proportional to learning.
B. The length of task is inversely proportional to learning.
C. There is no relationship between the length of task and learning.
D. There is positive relationship between the length of task and learning.

9. Which of the following statement is not correct?
A. The more useful a subject matter is for life, the faster the learners learn it.
B. The less useful a subject matter is for life, the learners learn it with slow speed.
C. The rate of learning among learners is fast if the subject matter is significantly useful for life.
D. The rate of learning among learners is slow if the subject matter is significantly useful for life.

10. Which of the following is the example of the visual instructional facility?
A. sound distribution sets
B. bulletin boards
C. documentary films
D. language labs

11. There are ____ important methods of projection.
A. two
B. three
C. four
D. five

12. Which of the following is not the benefit of instructional facilities for the teaching-learning process?
A. based on maxims of teaching
B. better organization of classroom teaching
C. no holistic learning
D. making learning a fun

13. The another name for learning environment is
A. ecosystem of classroom
B. ecosystem of school
C. ecosystem of any environment
D. ecosystem of classroom or school or any environment

14. Fatigue is
A. only physical
B. not only physical but also psychological
C. only psychological
D. only physiological

15. Learning environments will be considered more conducive to learning if
A. it is full of incidents of misbehavior
B. it is full of incidents of bullying
C. it is full of stimulating educational materials
D. it is full of incidents of illegal activity

Answer for Self Assessment

1.	C	2.	D	3.	A	4.	D	5.	C
6.	B	7.	A	8.	B	9.	D	10.	B
11.	B	12.	C	13.	D	14.	B	15.	C

Review Questions

1. Analyze the role of the teacher in the teaching-learning process.
2. Discuss the role of the learner as an important factor affecting teaching.
3. Explore the benefits of instructional facilities for the teaching-learning process.
4. Describe the non-projected visual instructional facilities used in the teaching-learning process.
5. The components of the learning environment are significant in the learning of the learners. Justify.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://www.aprcet.co.in/2020/12/factors-affeacting-teaching-related-to-teacher-learner-support-material-instructional-facilities-learning-environment-and-institutions.html

- https://ugcnetpaper1.com/factors-affecting-teaching/
- https://www.scholarify.in/factors-affecting-teaching/
- https://cbseugcnetforum.in/teaching-aptitude/factor-affecting-teaching/
- https://classroom.synonym.com/can-behavior-affect-academics-students-9290.html
- https://onlinenotebank.wordpress.com/2019/03/10/factors-affecting-teaching/
- https://www.myexamsolution.com/2020/04/factors-affecting-teaching-notes.html
- https://www.digitalclassworld.com/blog/important-factors-affecting-teaching/
- https://unacademy.com/lesson/factors-affecting-teaching-teacher-learner-support-material-learning-environment-in-hindi/24VAC9PN

Unit 08: Methods of Teaching - I

CONTENTS

Objectives
Introduction
8.1 Methods of Teaching in Institutions of Higher Learning
8.2 Teacher Centred Methods
8.3 Learner Centred Methods
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Readings

Objectives

After studying this unit, you will be able to:

- define the concept of teaching method, teacher centred, and learner centred methods of teaching,
- explore various methods of teaching used in institutions of higher learning,
- select and apply appropriate teacher and learner centred method as per content and context,
- compare teacher and learner centred methods.

Introduction

Teaching method means the general principles, pedagogy, and management strategies used for classroom instruction. The selection of teaching method depends on what fits an individual i.e., individual's educational philosophy, classroom demographic, subject area(s), and institution's mission statement. To learn any concrete issue, a teacher has to use different methods or a combination of methods. Methods often supplement each other in the process of teaching. A teacher should choose the proper method as per the concrete aim and problem.

8.1 Methods of Teaching in Institutions of Higher Learning

The various methods of teaching in institutions of higher learning are discussed below:

Activity-oriented Method

In the activity-oriented method, the teaching implies teachers' and learners' active involvement in the teaching process when the practical interpretation of the theoretical material takes place.

Analytical Method

It helps an individual to divide the whole teaching material into constituent parts. By doing this, the detailed interpretation of separate issues within the given complex problem is simplified.

Assignment Method

It enhances the ability to research any topic as the students search topics from different books, websites, etc. It involves active learning.

Brainstorming Method

This method implies forming and presenting as many radically different ideas and opinions on a given topic as possible. This method sets conditions for developing a creative approach towards a problem.

Case Study Method

The teacher discusses concrete cases together with the students and students study the issue thoroughly. E.g., in the field of education, classroom situations, reasons behind behavior problems of students, poor performance, personality issues, etc.

Collaborative Method

The collaborative method implies dividing students into separate groups and giving each group its task. The group members work on their issues individually and at the same time share their opinions with the rest of the group. According to the problem raised, it is possible to shift the functions among the group members in this process. This strategy ensures the students' maximum involvement in the learning process.

Conference Method

Conference Method gives chance to meet other people of the same profession. There is proper networking with other institutions and professionals.

Cooperative Teaching Method

It is a teaching strategy in the process of which each member of a group not only has to learn the subject himself, but also to help his fellow learners to learn it better. Each member of the group works on the problem until all of them master the issue.

Deductive Method

It determines a form of conveying any kind of knowledge which presents a logical process of discovering new knowledge based on general knowledge, i.e. the process goes from general to concrete.

Demonstration Method

This method implies presenting information with the help of visual aids. It is quite effective in reaching the required result. It is frequently advisable to present the material simultaneously through audio and visual means. The material can be presented both by a teacher and a student. This method helps us to make different steps of perceiving the teaching material more obvious, specify what steps the students are supposed to take independently. At the same time, this method visually shows the essence of an issue/problem. The demonstration should be very simple.

Discussion/Debates Method

This is the most widely spread method of interactive teaching. A discussion process greatly increases the quality of students' involvement and their activity. A discussion may turn into an argument and this process is not merely confined to the questions posed by the teacher. It develops students' skills of reasoning and substantiating their ideas.

E-learning Method

The e-learning method uses the internet and multi-media means in the process of teaching. It comprises all the components of the teaching process i.e., aims, content, methods, means, etc. and their realization takes place through specific means.

There are three types of e-learning methods which are described below:

Full-time Tuition

When the teaching process takes place during teachers' and students' contact hours and conveying the teaching material occurs through an e-course

Distant learning

It implies conducting the teaching process in the absence of a professor. The teaching course is conducted distantly in the e-format.

Hybrid (Full-time/Distant)

The teaching is mainly conducted distantly but a certain part of it is conducted during contact hours.

Explanatory Method

It is based on discussing a given issue. In the process of explaining the material, the teacher brings concrete examples and a detailed analysis of which is made in the framework of the given topic. It is based on the step-by-step solving of a given problem. It is realized through independent fixing of the facts in the teaching process and determining the ties among them.

Inductive Method

It determines a form of conveying any kind of knowledge when in the process of learning the train of thought is oriented from facts towards generalization, i.e. while presenting the material the process goes from concrete to general.

Laboratory Method

It implies the different forms of activity like conducting experiments, showing video materials, etc. It involves experimentation of different phenomena to get first-hand experiences and develop scientific aptitude, critical thinking, reasoning ability, and analytical powers among students.

Lecture Method

The lecture is a creative process in which both a teacher/lecturer and a learner take part. The basic aim of the lecture is to help students to comprehend the major notions of the subject taught which imply creative and active perception of the material. In addition, attention should be paid to basic concepts, definitions, designations, and assumptions.

Practical Methods

This method unites all the teaching forms that stimulate developing practical skills in learners. In this case, a student independently performs different kinds of activity based on the knowledge acquired e.g. field study, teaching practice, fieldwork, etc.

Presentation Method

In the words of Hamm (2008), "a presentation method involves motivating listeners to accept a new idea, alter an existing opinion, or act on a given premise."

In the presentation method, the learners first thoroughly understand the topic before giving a presentation i.e. mastery of the topic. It increases confidence among students. It is a good way to learn, for only one learner, who is presenting. Learners search a lot of books to collect material. Teacher supervision is important.

Problem-based Learning Method

It is a method that uses a concrete problem as the initial stage both for acquiring new knowledge and integration process. It develops problem-solving ability among the students.

Project Method

While designing a project a learner applies the knowledge and skills she/he has acquired for solving a problem. Teaching through designing projects increases students' motivation and responsibility. Working on a project involves the stages of planning, research, practical activity, and presenting the results according to the chosen issue. The project is considered to be completed if its results are presented, convincingly, and correctly. It can be carried out individually, in pairs, or in groups. It can also be carried out within the framework of one or several subjects (integration of subjects). On completion, the project is presented to a large audience.

Role Play Method

In role-play method, the games played according to a previously prepared scenario enable students to estimate the problem from different standpoints. They help students to form alternative points of view. Such games, as well as discussions, help students to develop skills of independently expressing their ideas and participating in discussions.

Seminar Method

This method gives chance to meet other people of the same profession. It motivates and makes learners active in learning. It is an interesting method of teaching and learning.

Synthetic Method

It implies forming one issue from several separate ones. This method helps students to develop the ability to see the problem as a whole.

Verbal or Oral Method

It comprises a lecture, narration, conversation, etc. During the process of the verbal or oral method, the teacher conveys, explains the material verbally, and learners perceive and learn it by comprehending and memorizing.

Written Method

The written method includes different forms of activity like copying, taking notes, composing theses, writing essays, etc.

8.2 Teacher Centred Methods

It is the more traditional/conventional approach. The teacher functions in the familiar role of classroom lecturer, presenting information to the students in teacher centred methods, who are expected to passively receive the knowledge being presented. The teachers are the main authority figure in a teacher-centered instruction model. Students are viewed as empty vessels who passively receive knowledge from their teachers through lectures and direct instruction. The teacher is looked upon by the learners as the master or an expert of the subject matter. Learners on the other hand are presumed to be passive and recipients of knowledge from the teacher. There is little or no involvement of learners in the teaching process. Due to the lack of involvement of the learners, it is also are called closed-ended.

The various teacher centred methods of teaching are-

- Lecture Method
- Team Teaching Method
- TV/Video Presentation Method

The description of the above-listed teacher centred methods is given below:

Lecture Method

The lecture method is the most conventional and dominating teaching method and is preferred by many teachers. In this method, a teacher attempts to explain facts, principles, or relationships to help learners understand. Here, the teacher is an active participant, the students are assumed to be passive listeners. Usually, the students do not converse with the teacher during the lecture by the teacher. That way, it is one-way communication. The teacher talks more or less continuously to the class. The class listens, writes, and notes facts and ideas for remembering and to think them over later. It can be made a two-way communication if the teacher allows students to ask few questions to clarify a point but no discussion is usually held.

Characteristics

1. It is formal and narrative.
2. It presents a series of events or facts.
3. It explores the problem.

Advantages

1. It is economical and a single teacher can teach a large number of students at a time which is not possible by using other methods.
2. It saves much time and the syllabus can be very easily covered within a limited time.
3. It simplifies the task of the teacher.
4. It is useful for imparting factual information and drawing attention to its important points.
5. Interruptions and distractions are usually avoided during the lecture method.

Limitations

1. It provides very little opportunity for student activity.
2. The teacher takes special care to make the class interesting.
3. It usually does not provide opportunities to learners to solve problems.
4. It offers limited opportunities for checking learning progress, whether the students are attending, and understanding all that the teacher is explaining.
5. The interests, abilities, and intelligence of students are not taken care of.
6. It does not allow the individual pace of learning.

Suggestions

1. The teacher should avoid the tendency to read from the lecture notes word by word.
2. The teacher should maintain eye to eye contact with the students to seek their continuous attention.
3. Good lesson planning with introductory remarks, main headings, sub-headings, figures, important data, and concluding remarks.
4. The students should get the opportunity to make notes.
5. The teacher should make effective use of audio-visual instructional facilities to improve the communication of ideas.
6. The teacher should make appropriate use of illustrations and examples. There is a need to ensure a fair presentation of different views and theories.
7. The teacher should provide short breaks during the lecture period for asking thought-provoking, stimulating, and problem-solving questions. The teacher should leave time in the end for clarifications and questions.

Team Teaching Method

Team teaching is an innovative approach in teaching large groups in which two or more teachers are involved in planning, executing, and evaluating the learning experiences for a group of students.

Advantages

1. There is a provision of sharing the best faculty with more students.
2. There is optimum use of multiple teaching techniques and devices.
3. It results in the improvement of teaching quality.

Limitations

1. Finding teachers with special competencies is a difficult task.
2. More teachers are required for this method.
3. It is not useful for teaching all subjects.
4. It requires much time for planning and scheduling.

TV/Video Presentation

Television or a video presentation is an improved presentation of radio or audio presentation. It can virtually bring the whole world inside the classroom. It involves the screening of a video presentation which is followed by a discussion or task.

Advantages

1. Many important personalities and experts are brought to the classroom through a video presentation.
2. It is specifically useful for adult learners.
3. The illustrated lectures and demonstrations can be supplemented by other teaching instructional facilities, such as slides, models, specimens, etc.
4. It is easily accessible for learners in remote areas.

5. It is specifically useful for subjects, such as geography, astronomy, etc.

Limitations

1. There is less possibility for two-way communication in the TV/video presentation method.
2. The telecast period is fixed. Therefore, there can be difficulty in adjusting to complicated schedules for the telecast period.

Benefits of Teacher Centred Methods

1. Teacher Centred Methods ensure order in the class.
2. Students are quiet as the teacher exercises full control of the classroom and activities.
3. Being fully in control minimizes an instructor's concern that students may be missing key material.
4. When a teacher takes full responsibility for educating a group of students, the class benefits from a focused approach to research, planning, and preparation.
5. Teachers feel comfortable, confident, and in charge of the classroom activities.
6. Students always know where to focus their attention on the teacher.

Limitations of Teacher Centred Methods

1. This method works best when the instructor can make the lesson interesting. Due to the absence of the element of interest, students may get bored, their minds may wander and they may miss key information.
2. As the students work alone, so missing potential opportunities to share the process of discovery with their peers.
3. Collaboration, which is an essential and valuable skill in school and life, is discouraged in the teacher centred methods.
4. Students may have less opportunity to develop their communication and crucial thinking skills in the teacher centred methods.

8.3 Learner Centred Methods

In learner centred methods, the teacher is still the main authority in the class but the teacher act as a coach or facilitator, or guide. In these methods, the learners play a more active and collaborative role in their learning. These methods try to accommodate the differences displayed between the learners. The main learner centred teaching methods of teaching includes –

- Assignment Method
- Case Study Method
- Computer-assisted Learning Method
- Differentiated Instruction Method
- Heuristic Method
- Interactive Video Method
- Personalized System of Instruction Method
- Programmed Instruction Method
- Open Learning Method

The description of the above-listed learner centred methods is given below:

Assignments

Assignments are given to learners for several purposes i.e., for acquiring additional information, surveying, application of knowledge, and solving numerical problems. In assignments, although the main role is of the learner, the teacher too has a crucial role. The teacher has to plan the assignments and guide the learner regarding references for collecting relevant information. The assignments can be prepared on any type of topic, but the nature of the assignment should be such that the learners may not merely copy from the books. The assignments should be open-ended and should promote creativity among the learners.

Advantages

1. It develops the habit of independent working among learners.

2. It helps in sharpening the learner's analytical, comprehension, and problem-solving abilities.
3. It helps in the inculcation of creativity among the learners.

Limitation

1. The learners may copy each other's material if assignments are not planned carefully.

Case Study Method

A case is usually a description of an actual situation, commonly involving a challenge, a decision, an opportunity, and a problem/an issue faced by a person or persons in a social setup such as an organization.

In the case study method, the learners learn through case studies and must deal with situations described in the case, i.e., the learners play the role of a decision-maker while facing the situation. This method has applications across disciplines, such as psychology, management, biology, law, sociology, history, etc. By allowing the learners to gain hands-on experience of the real world and shifting the work focus from teacher to the learner, the case-study method becomes an efficient tool for the creation of a learner centred education rather than a teacher centred education.

The learner becomes actively involved in the course and is no longer an observer in class developments. The cases can be short from brief classroom discussions to long and elaborate semester-long projects. It is important for bringing real-world problems into a classroom or a workshop. They ensure active participation and may lead to innovative solutions to the problems. For learners, who have been exposed only to the traditional teaching methods, the case studies call for a major change in their approach to learning.

Advantages

2. It provides an opportunity for the participants to analyze, critically examine, evaluate and give reasoned opinions/reflect.
3. It enhances decision-making and problem-solving skills.
4. It ensures active participation, which may lead to innovative solutions.

Limitations

1. It requires training for the teachers to use this method.
2. It is not useful for all subjects and situations.

Computer-assisted Learning (CAL)

It is concerned with the use of a computer to mediate the flow of information in a learning process. A computer can process information very quickly, accurately, adapt and respond to the learner's needs, difficulties, and progress, which is much greater than that of a book or videotape.

Advantages

1. It has more flexibility and better control in comparison to other methods.
2. It can be effectively used for drilling, practicing, simulation, and modeling.

Limitation

1. It is an impersonal method of teaching.
2. It is a costly method of teaching.

Differentiated Instruction

It is a dynamic and proactive method of teaching. It means that the teacher plans and uses a variety of ways in the teaching-learning process. It is a combination of individual, small group, and whole group instruction methods. In this method, the qualitative aspects are given more weightage than quantitative aspects. It uses multiple approaches to accommodate multiple intelligences. It is learner-centred, meaning that, the lessons are engaging, relevant, interesting, and active. It is an organized and planned method of teaching.

Advantages

1. It is a student-centered approach to teaching and learning.
2. It strives for equity.
3. It increases the engagement of the students.
4. With differentiated instruction, the teachers can teach much more effectively.

5. A teacher will teach one topic to a class but give each student a different experience.
6. The differentiated instruction approach is focused on ensuring content as per the needs of students.
7. In differentiated instruction, the learning environment is flexible to the needs of students.

Limitations

1. It is time-consuming.
2. It is resource intensive.
3. It leads to dumbing down the content.
4. It cannot apply to every student.
5. It is unrealistic in the context of standardized tests.

Heuristic Method

In this method, the learners have to find out the answer to their problem by unaided efforts. Thus, the learner becomes a discoverer of knowledge by developing a spirit of inquiry. The main aim of teaching, by this method, is not to provide many facts (about Science, Mathematics, Grammar, etc.) but to teach the way to obtain the knowledge of the facts.

Advantage

It is a self-learning approach.

Limitation

It is not much focus on factual knowledge.

Interactive Video Method

The interactive video method is a method of teaching that can be employed to achieve cognitive, psychomotor, and affective objectives. It allows the learner to randomly access any piece of information and provide immediate feedback regarding the consequences of their action. The essence of the interactive video experience is video simulation with more video presentations of the actual images as possible.

Advantage

The interactive video approach enhances the decision-making power of the individual.

Limitation

This method is time-consuming and requires resources and expertise.

Personalized System of Instruction Method

The personalized system of instruction (PSI) method is a method that is applicable for all subject matters except where the students are to select the contents. Learners must achieve mastery of a series of written mastery units, assisted by teachers, proctors, and enriching lectures before proceeding to the final test.

The five basic and essential elements of PSI are mastery learning, self-pacing, stress on written material, proctors, and lectures.

It is best suited for the content that is, otherwise, conveyed through written material.

Advantages

1. It is based on mastery learning.
2. It facilitates self-paced learning.

Limitations

1. It is not suitable for rapidly changing course contents.
2. It is not fit for psychomotor and affective domains.

Programmed Instruction Method

It is a general term for a highly structured system of learning. It has a foundation on the logical sequence of the self-paced learning steps with feedback between each step. The learner gets immediate feedback after each step.

Advantages

1. There is regular feedback in this method.
2. It ensures the active participation of the learner.
3. It applies to any subject.

Limitations

1. The learner motivation may get diminished after some time in this method.
2. It is a monotonous method.
3. Real-life situations are not there.
4. The subject matter is not sequenced.
5. The learner does not act as a discoverer.
6. It is not applicable for remedial purposes.

Open Learning Method

It is a flexible method of delivering the instruction, where the learner has open access to learning resources of people, material, equipment, and accommodation. Regular class attendances, although, are not necessary for it. There are no or minimal restrictions on admissions. The face-to-face interaction between teachers and students through tutorials should form a part of open learning. The development of learning packages is there in this method. It makes use of multimedia. It is, however, not suitable for the rapidly changing nature of content as this involves time, expertise, and resources.

Advantage

It offers flexibility to the learner.

Limitations

1. It is not suitable for achieving psychomotor and affective learning objectives.
2. It requires time, expertise, and resources.
3. It is not suitable for subjects of a rapidly changing nature.

Benefits of a Learner Centred Methods

1. In learner centred methods, the education becomes a more shared experience between the teacher and the learners and between the learners themselves.
2. Learners build both collaboration and communication skills in learner centred methods.
3. In learner centred methods, the learners tend to be more interested in learning because they can interact with one another and participate actively in their education.
4. Learners learn to work independently and interact with each other(s) as part of the learning process.

Limitations of a Learner Centred Methods

1. The problems are related to classroom management in learner centred methods.
2. With Learners free to interact, the classroom space can feel noisy or chaotic.
3. Classroom management can become more of an issue for the teacher, possibly cutting into instructional activities.
4. A few learners may miss important information.
5. With less focus on lectures, there can be a concern that some learners may miss important information.
6. Though collaboration is considered beneficial, this approach may not feel ideal for learners who prefer to work alone.
7. Learners, who prefer to work alone, face problems.

Summary

The teaching method refers to the general principles, pedagogy, and management strategies used for classroom instruction. There are various teaching methods like activity-oriented, analytical, assignment, brainstorming, case study, collaborative, conference, cooperative, deductive, demonstration, discussion, e-learning, explanatory, heuristic, inductive, laboratory, lecture, practical, presentation, problem-based learning, project, role-play, seminars, synthetic, verbal or oral, and written method.

The teacher centred methods are traditional and closed-ended methods. As the teacher plays an active and the learners play a passive role in the teacher centred methods, therefore, these are one-way communication processes.

The learner centred methods are the methods in which the teachers act as a facilitator or guide. In these methods, the learners are more active and collaborative. They play the role of an independent observer, investigator, researcher, etc. in their learning. The main learner centred teaching methods of teaching include assignment method, case study method, computer-assisted learning method, differentiated instruction method, heuristic method, interactive video method, personalized system of instruction method, programmed instruction method, and open learning method.

Keywords

The **teaching method** means the general principles, pedagogy, and management strategies used for classroom instruction.

The **teacher centred methods** are traditional/conventional approaches. The teacher plays the role of classroom lecturer and students are passive receivers of the knowledge being presented by the teacher.

The **learner centred methods** are the methods where the learners play a more active and collaborative role and the teacher act as a coach/facilitator/guide in their learning.

Self Assessment

1. In order to learn any concrete issue, teacher has to use

A. one method
B. different methods
C. different methods or combination of methods
D. combination of methods

2. _____helps an individual to divide the whole teaching material into constituent parts.

A. Case study method
B. Analytical method
C. Lecture method
D. Deductive method

3. Which of the following method implies forming and presenting as many radically different ideas on a given topic as possible?

A. Laboratory method
B. Collaborative method
C. Analytical method
D. Brain storming method

4. Field study is an example of

A. practical method
B. presentation method
C. synthetic method
D. inductive method

5. While designing a __ a learner applies the __ he/she has acquired for solving a __.

A. project; knowledge; problem
B. project; knowledge and skills; problem
C. project; skills; problem
D. problem; knowledge and skills; project

6. Teacher centred methods of teaching are also called

A. open ended
B. closed ended
C. open as well as closed ended
D. partially closed ended

7. Lecture method is ___ in nature.
A. uncommunicative
B. fact
C. verity
D. narrative

8. Which of the following is the limitation of team-teaching method?
A. It shares the best faculty by more students.
B. It is useful for imparting information.
C. It requires much time for planning and scheduling.
D. It is useful for drawing attention to its important points.

9. Many important ____ are brought to the classroom through ____.
A. personalities and experts; video presentation
B. personalities; lecture method
C. experts; lecture method
D. learners; video presentation

10. Which of the following is/are incorrect limitation/limitations of teacher centred methods?
    i. Collaboration, an essential skill in school, is discouraged.
    ii. Collaboration, an essential skill in school, is encouraged.
    iii. Collaboration, a valuable skill in life, is discouraged.
    iv. Collaboration, a valuable skill in life, is encouraged.
A. (i) and (iv)
B. (i) and (iii)
C. (ii) and (iv)
D. (i), (ii), and (iv)

11. Which of the following is learner-centred method of teaching?
A. Video presentation method
B. Team teaching method
C. Lecture method
D. Interactive video method

12. In assignment method of teaching,
A. the teacher has a crucial role along with the main role of the learner
B. the main role is of the learner
C. the main role is of the teacher
D. the main role is of the assignment

13. In Heuristic method, the learner has to find out the answer to his/her problem by
A. aided efforts
B. the support of teacher
C. unaided efforts
D. the support of peers

14. Open learning method is not suitable for achieving
A. cognitive learning objectives
B. psychomotor and affective learning objectives

C. cognitive and psychomotor learning objectives
D. psychomotor learning objectives only

15. Which type of learner's face problems in learner-centred methods of teaching?
A. Learners, who prefer to work in team.
B. Learners, who prefer to work in a group of three.
C. Learners, who prefer to work alone.
D. Learners, who prefer to work in a group of five.

Answer for Self Assessment

1.	C	2.	B	3.	D	4.	A	5.	B
6.	B	7.	D	8.	C	9.	A	10.	C
11.	D	12.	A	13.	C	14.	B	15.	C

Review Questions

1. Write a short note on teaching method, teacher centred, and learner centred methods of teaching.
2. Discuss various teaching methods used in institutions of higher learning.
3. Describe the different teacher centred methods.
4. Explain various benefits and limitations of learner centred methods.
5. Differentiate teacher and learner centred methods.

Further Readings

- Foundation of Educational Technology by Dr. S. K. Mangal, Tandon Publisher.
- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://www.youtube.com/watch?v=98oKN69YhFA
- https://ugcnetpaper1.com/teaching-methodology/
- https://www.scholarify.in/ugc-net-study-materials-for-paper-1/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/
- https://gtu.ge/ids-en/pdf/Forms_Methods_Teaching.pdf
- https://teach.com/what/teachers-know/teaching-methods/
- https://onlinedegrees.sandiego.edu/teacher-centered-vs-student-centered-learning/
- http://www.nzdl.org/cgi-bin/library/
- https://onlinedegrees.sandiego.edu/teacher-centered-vs-student-centered-learning/
- https://onlinedegrees.sandiego.edu/teacher-centered-vs-student-centered-learning/
- https://helpfulprofessor.com/differentiated-instruction/
- https://www.readingrockets.org/article/what-differentiated-instruction
- http://mooc.nios.ac.in/mooc/pluginfile.php?file=/11948/course/summary/UNIT4-LEARNER_AND_LEARNINGCENTRED.pdf

Unit 9: Methods of Teaching - II

CONTENTS

Objectives
Introduction
9.1 Off-line Methods
9.2 On-line Methods
Summary
Key Words
Self Assessment
Answers for Self Assessment
Review Questions
Further Reading

Objectives

After studying this unit, you will be able to:

- define off-line and on-line methods of teaching,
- enlist off-line and on-line methods of teaching,
- describe the characteristics of off-line and on-line methods of teaching,
- analyze advantages and disadvantages of off-line and on-line methods of teaching.
- compare off-line and on-line methods of teaching.

Introduction

As we know that, the development of science and technology makes human life convenient and fast. The education industry also develops rapidly with the advancement of network technology. As a result, the use of technology is there in classroom teaching. Technology-equipped classrooms, using high-tech equipment such as computers, laptops, smart phones, etc., replaced the traditional classrooms. Therefore, there is a change in the teaching methods used in classroom teaching. Now the teacher is using on-line methods of teaching to teaching students in a technology-supported teaching-learning process.

Therefore, in present times, there is a use of both the off-line and on-line methods to teach the students by teachers in the regular teaching-learning process. Both the methods have their advantages and disadvantages. So, there is a detailed description of both the off-line and on-line methods given in this chapter.

9.1 Off-line Methods

Meaning

The off-line methods are referred to as the traditional methods or training.

The off-line methods in the education system mean a student needs to go to a school, a classroom, and attend a class face-to-face with a teacher.

In the off-line methods of teaching,

- the teacher act as a source,
- educational material as information,
- learners as receivers of information, and
- chalk and talk or overhead/LCD projector as a medium of content delivery to the learners.

Examples

The various examples of the off-line method are **case study, demonstration, discussion, lecture, simulation, etc.**

Characteristics

The various characteristics of off-line methods are written below:

Face-to-Face Interaction

The focus of the off-line methods is on face-to-face interaction between the teacher and learners.

Fixed Duration and Period

The duration and period of study are fixed in the off-line methods.

Knowledge and Subject Content

The teacher concentrates on delivering knowledge and subject content to the learners in the off-line methods.

Motivation

The learners have less chance for motivation in the off-line methods.

Passive

Learning is more passive in the off-line methods because there are fewer roles for learners during the instructional process.

Rigid

The off-line methods are the traditional method in the teaching-learning process. Due to this reason, their character is rigid.

Self-Leaning

The learners have less chance for self-learning in the off-line methods.

Teacher-Centered

The offline methods are the teacher-centered (focused) method. Therefore, the teacher is the central component of the teaching-learning process in the off-line method.

Use of Technology

The use of technological instruments (like the computer, overhead/LCD projector, etc.) is less in the off-line methods. The students' interaction with technology is less in the off-line methods.

Traditional Methods of Teaching

The various traditional styles of teaching are more used in the off-line method. The offline methods are based on traditional methods of teaching.

Verbal Instructions

The instructional strategy used in the off-line methods is verbal oriented. The multimedia may be used in the off-line methods, but the delivery of instruction is mainly verbal.

Limited Interaction

The opportunity for interaction between students and teacher is limited in the off-line methods.

Advantages

The various advantages of off-line methods are as follows:

Competitive Atmosphere

As the physical presence of learners is essential in off-line methods, the classroom has a competitive atmosphere because the learners have the opportunity to compete with their peers.

Discipline

Everything is properly organized and managed by the teacher in off-line methods. The students are well-disciplined in the class in off-line methods.

Interaction

As we know that the physical presence of the teacher and learners is essential in off-line methods, it gives maximum opportunity to the learners for face-to-face interaction with their teachers and classmates. There is the development of crucial qualities such as patience and team spirit, and most importantly, respect among learners.

Interpersonal Skills

The physical presence and face-to-face interaction inside and outside the classrooms help the learners to develop their relations with other learners and teachers, which might cause interpersonal skills development among learners.

Monitoring

The off-line methods help the teacher in individualized monitoring of the learners because the learners are physically present in the class.

Structured

The teacher has complete control over the teaching-learning process in the off-line methods. Therefore, the classroom setting is very well structured. Everything is well planned and executed effectively by the teacher.

Disadvantages

The various disadvantages of off-line methods are as follows:

Cost

An individual has to spend money in the form of course fees, traveling expenses in moving from home to the place of learning, accommodation charges if the educational institution or training center is not nearby, on textbooks, extra-curricular activities, etc. in off-line methods.

Location

The learning takes place in a fixed location (school/college/university/training center), with a well-defined or predetermined schedule, and requires an individual to travel and be on time in the off-line methods.

Presence

The physical presence is essential for the learner in the off-line methods. There is no flexibility in the attendance of the learners, i.e., their physical attendance is compulsory in the class. Off-line learning requires an individual to physically present in an educational institution (a school/college/university) or a training center for fixed hours.

Schedule

The schedule of the various activities in the off-line methods is fixed or pre-decided. Also, the organization and conduction of different activities be at a scheduled place and time.

Study Materials

The lecture or class notes and textbooks are the significant study material in the off-line methods.

Teacher Dependent

The off-line methods are teacher-dependent. The class is under the control of a teacher and is well-disciplined. The teacher always maintained discipline in the class by checking if students have focused on instructions and content taught in the class and not doing anything else. The teacher does this by coming to the students physically and reminding them to focus.

Transport and Accommodation

The off-line methods require an individual to travel and be on time at the place of learning. Offline learning requires an individual to physically travel to an educational institution (a school/college/university) or a training center and be present at and for fixed hours. If the

educational institution or training center is far away, in that situation, the learner is supposed to take accommodation in the nearby hostel/PG to the educational institution or training center.

One way Communication

The off-line methods follow teaching in the classroom by using chalk and talk strategy. Therefore, it is one-way communication. A negligible opportunity is there with learners to put their views in offline methods. The teacher continuously delivers the lecture without knowing students' responses & feedback.

Focus on Memorization

In off-line methods, more emphasis is on memorization than the understanding of the content by the learners.

Focus on Theory

In off-line methods, more emphasis is on theory and not on practical as well as real-life situations. That is, the problem-solving approach is less followed.

Focus on Marks

The off-line methods are marks/grades oriented and not result-oriented. They focused on temporary learning based on rote memorization and not on lifelong learning based on experiences.

9.2 On-line Methods

On-line methods allow learners to study anywhere and anytime in the world. The on-line methods are very flexible learning system that allows learners to study solely via the internet. Learners learn on their own computer/laptop/smart phone at home/any place with the help of the internet.

There is no face-to-face interaction between learners and teachers in the on-line methods. The physical presence of learners and the teacher is not essentially required in the on-line methods.

On-line methods are a new paradigm for teaching and learning. It is a pedagogical shift in how we teach and learn.

There is a shift from lecturing and passive learners to a more interactive and collaborative approach in which learners and teachers co-create the learning process i.e. partner of knowledge. The teacher acts as a guide in the online methods.

In short, on-line methods involve that type of learning which takes place over the internet. It is also called e-learning.

The various examples of the on-line method are learning management system, massive open online courses (MOOC), online learning, open source educational resources, SWAYAM, SWAYAM PRABHA, and virtual learning.

Characteristics

Active

There is less passive listening and more active learning in on-line methods. The role of learners is more in the instructional process. That is, learners are not just passive listeners but they actively participate in every activity. Therefore, there is a greater sense of connectedness and synergy in on-line methods.

Convenience

As we know that there is 24/7 access from any (on-line computer or) computer with internet connectivity. It accommodates the busy schedules of an individual. There is also no commuting and no searching for parking in on-line methods. Therefore, individuals can learn at their convenience and suitability.

Duration and Period

The duration and period of study are not fixed in the on-line methods. Individuals can learn from anywhere and anytime as per their free time.

Flexible

The on-line methods are a new paradigm for teaching and learning. They allow learners to study anywhere and anytime in the world. Therefore, on-line methods are very flexible that allows learners to study on their own computer/laptop/smart phone at home/any place with the help of the internet.

Interaction with Technology

Teachers' and learners' interaction with technology is more in online methods because teachers and learners use technological gadgets like computers, smart phones, laptops, tablets, etc. with internet connectivity for the teaching-learning process.

Knowledge Construction

The teacher helps the learner in the construction of knowledge during the on-line methods.

Learner Focused

On-line methods are learner-focused because the learner is the central point of the teaching-learning process. It provides a more student-centered learning environment.

Face-to-Face Interaction

There is less opportunity for face-to-face interaction between teachers and learners in the on-line methods because learners and teachers are not physically present on the campus at the time of instructions i.e., when the teaching-learning process is going on.

Verbal Instruction

There is less focus on verbal instruction in on-line teaching. The instructional strategies make use of different styles and methods of teaching in on-line methods.

Motivation

The on-line methods give learners many chances for self-motivation because no one is observing the learner.

Multimedia

Multimedia is used in a variety of ways during the teaching-learning process through on-line methods.

Saving

There is a saving of huge amount of money by an individual in on-line methods by not spending money on accommodation, traveling, books, etc. During the Pandemic situation (like COVID-19), on-line methods of teaching and learning became a boon to learners and teachers. It makes the continuity of academic sessions. Learners continue their studies due to online methods and save their academic year(s).

Self-learning

The on-line methods give learners chances for self-learning and motivation because no one is monitoring the learner.

Teacher-learners Interaction

Teacher and learners interaction is less in on-line methods as compared to the interactions held during real classroom situations. There is more virtual interaction in on-line methods. There is increased student-to-teacher and student-to-student virtual interaction and discussion.

Techniques of Instruction

The teachers and learners make use of innovative techniques of instruction (e-learning, e-content, synchronous instruction, etc.) in on-line methods of teaching.

Technological Instruments

The use of technological instruments like computers, smart phones, laptops, tablets, etc. with internet connectivity is more in the on-line methods.

Advantages

Cheaper

On-line methods of teaching/learning are usually cheaper in terms of fees and study material because all study materials are available on-line. There is no need to buy textbooks, manuals, etc.

Class Recorded

Classes/Lectures are recorded simultaneously in on-line mode. Therefore, if a learner missed a scheduled class/lesson due to any reason, then he/she studied the same with the help of a recorded lecture.

Convenient

On-line methods of teaching are more convenient. On-line methods provide 24/7 access to learners anywhere and anytime around the world.

Enhanced Learning

The on-line methods enhanced learning among the learners. The research findings show that there is increased depth of understanding and retention of course content; more meaningful discussions; development of writing skills, technology skills, and life skills like time management, independence, and self-discipline, among learners who taught through on-line methods.

Flexible

There are flexible hours of study for learners in online methods. The learner can study from repeat telecast and chose the time of study as per his/her convenience.

Location

The location of the individual learner (urban or rural, plains or hills, etc.) does not matter in online methods. It allows an individual learner to study wherever and whenever.

Improved Administration

There is an improvement in the administration work of teachers. Teacher's ability to examine students' work more thoroughly, document and record online interactions with ease, manage the students' grades online properly with the use of on-line methods.

Innovative Teaching

On-line methods are using student-centered approaches. It increased the variety and creativity of learning activities. It addresses the different learning styles of the learners. It also brings various changes and improvements in the teaching-learning process which can translate to on-ground courses as well.

Interaction

The learner-teacher and learner-learner interaction and discussion are increased in the virtual mode in online methods. It provides a more learner-centered learning environment and a more active learning environment for learners.

Maximize Physical Resources

On-line methods maximize physical resources because there is less demand for campus infrastructure. It decreases congestion on campus and parking lots.

Outreach

On-line methods give students various options. It reaches new student markets and appeals to current students. Therefore, it helps in increasing the enrollments of students in various program or courses.

Time Saving

It saves the traveling time of the learners to reach the education center.

Disadvantages

Isolating

The level of human interaction is quite less in on-line methods of teaching as compared to real-time classroom teaching, and therefore, it is quite isolating.

Limited Topics

Limited topics are taught through on-line methods. It is not feasible to teach each and everything (i.e.100% syllabus of a course or every topic of a subject) on-line by exposing learners to real-life experiences.

No Competition

There is a very negligible or less chance of competition among learners because of less interaction among learners (through virtual mode) as compared to real classroom interaction (in-person mode).

Self Discipline

In absence of classmates, still, there are a lot of distractions at home or outside the off-line classroom. On-line learning requires a lot of self-discipline on the part of learners, as learners will have less interaction with their teachers in virtual mode as compared to the real classroom, and thus also need strong motivation. Learners need to get up, open his/her laptop and be there during class without anyone always reminding him/her to be there. If learners don't want to join the on-line class, the teacher won't come for learners. Therefore, self-discipline and motivation play an important role in online learning.

Social Interaction

The on-line methods lacking in social interactions i.e., activities like the small chats between learners in the classroom and corridor during breaks, asking questions to teachers, etc. Therefore, in on-line methods, teacher-learner and learner-learner interaction are very low.

Lacks Interpersonal Skills Development

As teachers and learners are comfortably seated behind a screen in on-line methods, this results in less spontaneous debates and exchanges of ideas. It causes a lack of interpersonal skills development among learners.

Summary

The off-line methods refer to as the traditional methods or training. The off-line methods in the education system mean a student needs to go to a school and attend a class through face-to-face interaction with a teacher. It is a teacher-centered method. There are more opportunities and chances for face-to-face human interaction in offline methods.

The online methods are a pedagogical shift in how we teach and learn. There is a shift away from top-down lecturing and passive students to a more interactive and collaborative approach. The learners and teachers co-create the learning process in online methods. It is less expensive, convenient, flexible, and using technology for better learning, but lacks social interactions among the learners.

Key Words

Off-line methods refer to the traditional methods that involve face-to-face interaction between teacher and students.

On-line methods allow learners to study anywhere and anytime in the world.

Self Assessment

1. Case study and simulation are examples of _____.
2. Massive open online courses are examples of _____.
3. The focus of the off-line methods is on face-to-face interaction between _____.
4. The on-line methods give learners chances for self-learning and motivation because _____.
5. The on-line methods of learning are also called _____.

6. Which of the following is the medium of delivery in off-line methods?
A. Educational material
B. Teacher
C. Chalk & Talk
D. Learners

7. In off-line methods, teacher concentrates on
A. delivering knowledge and subject content
B. motivation of learners
C. role of learners
D. knowledge of learners

8. Which of the following statement is correct?
A. Use of technological instruments is more in off-line methods.
B. Learners' interaction with technology is more in off-line methods.
C. There is more chance for self-leaning in off-line methods.
D. Teacher is the central component in off-line methods.

9. Identify the incorrect statement?
A. Learners develop crucial qualities such as patience and team spirit in off-line methods.
B. Learners develop interpersonal skills in off-line methods.
C. There is more use of modern styles of teaching in off-line methods.
D. The delivery of instruction is mainly verbal in off-line methods.

10. Off-line methods are
A. result oriented
B. marks oriented
C. result & grades oriented
D. understanding oriented

11. On-line method is a pedagogical shift in
A. how we teach and learn
B. what we teach and learn
C. why we teach and learn
D. who teach and learn

12. An example of on-line method is
A. case study
B. demonstration
C. massive open online courses
D. simulation

13. SWAYAM was designed to achieve the ___ cardinal principles of Education.
A. four
B. two
C. five
D. three

14. In on-line method, teacher helps the learner in the
A. construction of teaching aids
B. construction of knowledge
C. construction of multimedia devices
D. construction of technology instruments

15. Which of the following is the advantage of On-line methods?
A. It provides a less learner-centered learning environment.
B. There are minimum chances of human interaction.
C. It increased the depth of understanding and retention of course content.
D. There are fewer chances of competition among learners.

Answers for Self Assessment

1. off-line methods
2. On-line methods
3. the teacher and learners
4. no one is monitoring the learner
5. e-learning

6.	C	7.	A	8.	D	9.	C	10.	B
11.	A	12.	C	13.	D	14.	B	15.	C

Review Questions

1) Define the concept of off-line and on-line methods of teaching. Enlist various examples of off-line and on-line methods/methods of teaching.
2) Analyze the various advantages of off-line methods of teaching
3) Describe the characteristics of on-line methods of teaching.
4) Discuss different disadvantages of on-line methods of teaching.
5) Differentiate off-line and on-line methods of teaching.

Further Reading

1. NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
2. UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
3. Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
4. CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

https://ltl-school.com/online-vs-offline/

http://www.wlac.edu/online/documents/otl.pdf

https://www.scholarify.in/offline-vs-online-methods/

https://tutorroom.net/en/education-platforms/learning-difference-between-offline-online/

https://en.wikipedia.org/wiki/Learning_management_system

https://www.onlineeducation.com/guide/instructional-methods

https://www.scholarify.in/offline-vs-online-methods/

https://www.scholarify.in/ugc-net-study-materials-for-paper-1/

https://www.researchgate.net/publication/341290965_On_the_Online_and_Offline_Hybrid_Teaching_Mode_of_College_English

Unit 10: Teaching Support System - I

CONTENTS

Objectives

Introduction

10.1 Teaching Support System

10.2 Traditional Support System

10.3 Modern Support System

10.4 Difference Between the Traditional and Modern Support System

Summary

Keywords

Self Assessment

Answer for Self Assessment

Review Questions

Further Readings

Objectives

After studying this unit, you will be able to:

- define teaching, traditional and modern support system,
- justify the need and importance of teaching support system,
- describe the characteristics of traditional and modern support systems,
- analyze advantages and limitations of traditional and modern support systems,
- compare traditional and modern support systems.

Introduction

There is a need for a system that orient and guide the learners to maximize their academic achievement. This system of tools and resources is known as a teaching support system. It helps, guides, and develops the capacities of the teachers.

10.1 Teaching Support System

The teaching support system is a set of tools and resources that helps us to know how teachers acquire new skills and building new capacities. It guides the teacher to improve the students' performance after knowing about the areas where they are not performing well.

It provides the teachers with a set of instructional strategies for the standards and skills that students are not proficient in. It can be taken as a kind of process as well. It influences the way decisions are taken and what information is passed on.

A teaching Support System is a system that coaches, guides, instructs, teaches, and trains teachers on how to maximize the academic achievement of learners. A teaching support system caters to the teachers with an ultimate goal to improve learners' achievement.

In short, the teaching support system is the capacity building of teachers using resources and guides on how to teach. It helps teachers to acquire the knowledge and skills to deliver in the classroom.

Need of Teaching Support System

The need for the teaching support system is for the -

- better learning of the learners.
- correct and accurate learning of the learners.
- direct experience of the learners.
- concept learning of the learners.
- help of the teacher in developing interest and making learning permanent among learners.

Importance of Teaching Support System

The teaching support system has importance for the following reasons:

- Activeness - It develops activeness among the learners.
- Clarification - Teachers clarify the subject matter to learners effortlessly with the teaching support system.
- Experience - The teaching support system provides direct experience to learners.
- Motivation - The teaching support system motivates the learner for better learning.
- Live Environment - The teaching support system makes the classroom environment more lively and participatory.
- Understanding - The teaching support system facilitates a proper understanding of the subject matter among learners.

Types of Teaching Support System

The three types of teaching support systems are given below:

- Traditional Support System
- Modern Support System
- ICT Based Support System

10.2 Traditional Support System

Meaning

The traditional support system can also be somewhat compared with the conventional or orthodox system of education. The traditional support system is a conventional or traditional method of teaching. It uses chalk and talks strategy. The teacher uses various teaching aids (like books, chalk, blackboard, globe, map, specimens, models, charts, computer, etc.) in the traditional support system to make learning easy for the learners.

Examples

The various examples of the traditional support system are -

- Apparatus & Materials
- Abacus
- Atlas
- Blackboard
- Bulletin Board
- Charts
- Crossword Puzzles
- Dramatization
- Dictionaries
- Encyclopedias
- Flashcards
- Flip Cards
- Globes
- Maps
- Models
- Learning Toys
- One-Act Play,
- Pictures
- Posters
- Photographs
- Graph Paper
- Puppets

- Quiz
- Reference Books
- Textbooks
- Storytelling
- Worksheets
- Science Lab
- Oral Tests

Method

Methods of traditional support system are -

- Direct Instructions
- Lecture
- Listening & Observation
- Home-assignment

Characteristics

The various characteristics of the traditional support system are:

1. The traditional support system is teacher-centered instruction.
2. Memorization of facts and objective information is there in the traditional support system.
3. The correct knowledge is paramount in the traditional support system.
4. The traditional support system aims at the high performance of learners.
5. The traditional method has direct instruction and lectures.
6. The learners learn through listening and observation in the traditional support system.
7. The teacher relies on textbooks, lectures, and individual written assignments, etc.
8. In the traditional approach, presentation and testing methods favor students who have prior exposure to the material or exposure in multiple contexts.
9. In traditional methods, students matched by age, ability, etc.,
10. Learning is through listening and observation in the traditional support system.
11. The materials used in the traditional support system are textbooks and the blackboard.
12. The method of teaching used in the traditional support system is the lecture method.
13. Classroom management in the traditional support system means maintaining discipline.
14. The focus of the traditional support system is only on syllabus completion.

Advantages

The advantages of the traditional support system are:

1. The traditional support system is economical in terms of money and time.
2. The traditional support system is easy to use with any group of learners.
3. The traditional support system is very effective for huge or large groups of learners/students.
4. Students are more punctual and disciplined because there is specific and fixed timing for every activity is planned at the beginning.
5. There is ample chance for students to build their character through effective social interactions with their peers.
6. Students learn to share and respect each other.
7. Students have a chance to actively participate in extra co-curricular activities and get opportunities to showcase their talent to others.
8. There is more face-to-face interaction with students and teachers.
9. Students clarify their doubts by asking questions to their teachers
10. Students get more elaborated explanations from their teachers.

Limitations

The limitations or disadvantages of the traditional support system are:

1. As the traditional support system is the teacher-centered method of teaching, therefore, the teacher is very active whereas learners are passive in the teaching-learning process. So, there is less involvement of the learners in the traditional support system.
2. Students lack interest in classroom teaching due to their passive role in the teaching-learning process.

3. There is less emphasis on the concept understanding among learners in the traditional support system.
4. The education provided to the students is of generalized nature. It does not cater to the student's needs as per their different abilities and interests.
5. Individual differences are not considered or taken care of by teachers in the traditional support system.
6. It follows a fixed schedule. All activities are pre-planned in the beginning. Therefore, there is no scope for flexibility.
7. It is an expensive support system. The requirement of classroom setup, course books, fees, etc. requires more money. Students also have to pay fees to get specific facilities which are not possible for everyone.
8. The students have limited knowledge because the sources of their knowledge and information are books and teachers only.

10.3 Modern Support System

Meaning

The modern support system is the learner-centered system, and here the teacher is a facilitator. It uses technology resources like the internet, library, and outside experts. It makes the teaching-learning process very interesting and lively. Learners get immediate feedback in the modern support system.

Examples

The various examples of the modern support system are –

- Audio-Video Lecture
- Computer and Computer Games
- Laptop
- Compact Discs
- Digital Video Disc or Digital Versatile Disc,
- E-Books
- E-Dictionaries
- E-Encyclopedias
- E-Notebooks/Notepad
- E-Reader
- Film Strips
- Film Projector
- E-Tests
- Interactive Board
- Internet
- LCD Projector
- Mobile/Smart Phone
- Online Tests
- Power Point Presentation
- Smart Board
- Radio
- Tape Recorder
- Television

Methods

Methods of modern support system are –

- Activity
- Discovery
- Group Activity
- Project and Project-based Instruction

Characteristics

The various characteristics of the modern support system are:

1. It is a learners' centric approach that reflects educational progressivism.
2. More emphasis is on Analysis, Application of facts, Critical thinking, Innovation, understanding of the facts, and rigorous evaluation (by using technology) in the modern support system.
3. The focus of the modern support system is on the learning, retention, accumulation of valuable knowledge and skills, resources like the internet, library, and outside experts.
4. Subjects are integrated and multidisciplinary in the modern support system. Also, to integrate personal knowledge and context learning within the learning environment, efforts have been made.
5. The learners are matched based on the interest or ability for each project or subject in the modern support system.
6. Practicality, discoveries, and group activities are the main pillars of the modern support system.
7. Learners are active participants in the modern support system. Therefore, it is learner-friendly.
8. The modern support system (s) depends on information and communication technology (ICT)/ technologies.
9. The construction of knowledge is there in the modern support system instead of the delivery of knowledge.
10. There is more scope for creativity and flexibility in the modern support system.

Advantages

The advantages of the modern support system are:

1. As the modern support system is learner-centered, therefore, its focus is always on the learner.
2. The modern support system creates fun in learning, and therefore, it is an interactive way of learning.
3. There is more scope for using audio-visual teaching aids in the modern support system, i.e., MOOCs, online learning, videos, etc.
4. Learners can study anywhere and at any time.
5. Learners can learn at their pace and convenience.
6. The physical presence on campus is not essential.
7. Learners can save money on traveling to the campus/institution.
8. Learners can select a course as per their interests, plans, and career choices.

Limitations

The limitations or disadvantages of the modern support system are:

1. The teaching is more dynamic in this support system. Therefore, the teacher should always be ready to learn and relearn new skills.
2. Too much dependency on technology reduces the authority of teachers in the modern support system.
3. The modern support system requires investment in terms of effort, money, and time. Therefore, it is costly.
4. In the modern support system, the teacher-learner relationship suffers a lot due to less time to develop bonding with learners.
5. There is negligible student-teacher and student-student face-to-face interaction. Therefore, learners have limited social interaction that results in the development of a poor social relationship with others among learners.
6. The learners are isolated from society and feel lonely as well as depressed.
7. The learners with less self-motivation and determination can easily get distracted.

10.4 Difference Between the Traditional and Modern Support System

The difference between traditional and ICT support system is given in the table below:

Sr. No.	Basis of Difference	Traditional Support System	Modern Support System
1	Learners	There is a homogeneous group of learners. (i.e., same age,	There is a heterogeneous group of learners (i.e., different ages,

		nationality, etc.)	nationalities, etc.)
2	Time and Place of Learning	There is a fixed time and place for learning.	There is flexibility in time and place for learning.
3	Cost	The cost of the traditional support system is comparatively high as compared to the modern	The cost of the modern support system is comparatively low as compared to the traditional
Sr. No.	**Basis of Difference**	**Traditional System**	**Modern System**
3	Cost	support system. The reason for the same is the requirement of classroom setup, course books, fees, etc.	support system. The reason for the same is the less requirement of classroom setup, course books, fees etc.
4	Material	The study material (i.e., books, etc.) is available in printed form.	The study material (i.e., books, etc.) is available in soft form i.e., on online in e-form.
5	Course	The learners can study one course at a time.	The learners can study multiple courses at a time.
6	Place of Study	It is found very difficult to learn courses from abroad universities.	It is found very easy to learn courses from abroad universities through online mode.
7	University	The learner can register with one university at a time.	The learner can register with multiple universities at a time.
8	Examination	The schedule of the examinations of learners is after a term or semester.	The schedule of the examinations of learners is after each topic.
9	Evaluation	Evaluation of the learners is done manually by teachers.	Evaluation of the learners is done automatically by computers or software.
10	Source	There are limited sources of learning material.	There are unlimited sources of learning material.
11	Certification	Learners get certificates of different courses in much more time as compared to the support system.	Learners get certificates of different courses in less time period as compared to the traditional support system.

Summary

In short,

A teaching support system is the capacity building of teachers using resources and guides on how to teach. It helps teachers to acquire the knowledge and skills to be practice in the classroom.

The traditional support system is comparable with orthodox education. It is teacher-centered instruction, involves the memorization of facts, and uses various conventional methods of teaching. It also uses chalk and talk strategy in the teaching-learning process.

The modern support system is learner-centered. It aims at learning, retention, accumulation of valuable knowledge & skills among learners.

Practicality, discoveries, and group activities are the main pillars of the modern support system. It uses resources like the internet, library, and outside experts.

Keywords

The **teaching support system** is a set of tools and resources that helps us to know how teachers acquire new skills and building new capacities.

The **traditional support system** is a conventional method of teaching that uses chalk and talks strategy. It uses teaching aids like books, chalk, blackboard, globe, map, specimens, models, charts, computers, etc., to make learning easy for learners.

The **modern support system** is a learner-centered system and makes the teaching-learning process very interesting and lively.

Self Assessment

1. The teaching support system is a set of ____ and _____.
A. tools; resources
B. groups; tools
C. resources; facilities
D. theories; principles

2. The _____ is paramount in the traditional support system.
A. tools
B. resources
C. correct knowledge
D. concept

3. Learners get immediate feedback in the _____.
A. traditional support system but not in modern support system
B. traditional as well as modern support system
C. traditional support system
D. modern support system

4. There is _____ emphasis on the _____ among learners in the traditional support system.
A. more; concept understanding
B. less; concept understanding
C. direct; concept understanding
D. indirect; concept understanding

5. There is more scope for using audio-visual teaching aids in _____.
A. traditional support system
B. modern support system
C. traditional as well as modern support system
D. neither modern nor traditional support system

6. A teaching support system caters to the _____ with an ultimate goal to improve _____.
A. learners; teachers
B. learners; teachers' achievement
C. teachers; learners
D. teachers; learners' achievement

7. A teaching support system is needed for
A. better learning only
B. correct learning only
C. better learning, correct learning, and direct experience of learners
D. direct experience of learners only

8. Traditional support system aims at
A. high performance of learners
B. understanding of concepts
C. involvement of learners
D. individual differences

9. Which of the following is the characteristic of a traditional support system?
A. It is learner-centred instruction.
B. It has no direct instruction.
C. It focuses more on memorization.
D. It is not economical.

10. Who suffers the most in traditional support system?
A. teachers
B. weak learners
C. planners
D. examiners

11. Modern support system is _____ approach that reflects _____.
A. teachers' centric; educational progressivism
B. learners' centric; educational progressivism
C. technology centric; educational progressivism
D. material centric; educational progressivism

12. Modern support system aims at
A. knowledge of facts
B. information of facts
C. application and understanding of facts
D. memorization of facts

13. The main pillars in modern support system are
A. discoveries and practicality
B. discoveries, group activities, and practicality
C. discoveries and group activities
D. group activities and practicality

14. Identify the correct statement from the following concerning the modern support system.
A. Knowledge is delivered.
B. There is less scope for creativity.
C. Construction of Knowledge gives more importance.
D. There is less flexibility.

15. Which of the following is the limitation of the modern support system?
A. The Teacher-learners relationship suffers a most.
B. It is not costly.
C. Teaching is less dynamic.
D. It is less dependent on technology.

Answer for Self Assessment

1.	A	2.	C	3.	D	4.	B	5.	B
6.	D	7.	C	8.	A	9.	C	10.	B
11.	B	12.	C	13.	B	14.	C	15.	A

Review Questions

1. Define the term teaching support system. Justify the need and importance of the teaching support system.
2. What do you mean by the traditional support system? Describe its characteristics.
3. Analyze the concept of modern support system. Discuss its characteristics.
4. Which one is better out of the modern support system and traditional support systems? Give reasons.
5. Tabulate the comparison between the traditional and modern support systems.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://www.scholarify.in/ugc-net-study-materials-for-paper-1/
- https://www.scholarify.in/teaching-support-system/
- https://ugcnetpaper1.com/teaching-support-system/
- https://gradeup.co/teaching-support-system-traditional-modern-and-ict-i
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/
- https://xpertcube.com/modern-education-system/
- https://www.ldceandnetexam.com/2020/10/10/teaching-support-system-traditional-modern-and-ict-based/

Unit 11: Teaching Support System – II

CONTENTS

Objectives
Introduction
11.1 ICT Based Support System
11.2 Difference Between the Traditional and ICT Support System
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Readings

Objectives

After studying this unit, you will be able to:

- define ICT based support system,
- describe the characteristics of ICT based support system,
- Justify the significance of ICT based support system,
- analyze advantages and limitations of ICT based support system,
- compare traditional, modern, and ICT based support system.

Introduction

Information and communication technology (ICT) based teaching support is an approach to facilitate and enhance learning through, and based on, both computer and communication technology. It refers to the computer-based electronic technologies of the internet, e-mail, websites, and CD-ROMS. These technologies help to deliver, facilitate and enhance both formal and informal learning. These technologies also facilitate knowledge sharing from any place at any time. ICT-based learning is also called Computer-Based Training (CBT). Generally, CBT and e-learning are treated as synonyms, whereas CBT is the older term dating from the 1980s.

11.1 ICT Based Support System

Concept and Meaning

The ICT-based support system is a support system used for the teaching-learning process. It is also called computer-based training.he term ICT-based support system evolved from computer-based training with the maturation of the internet, CDs, and DVDs. It includes internet-based teaching-learning functioning with the support of web-based and online learning.

The ICT-based support system facilitates and enhances learning through both computer and communication technology. It refers to the use of the internet, e-mail, websites, and CD-ROMS. It delivers, facilitates, and enhances both formal and informal learning.

The ICT-based support system shared knowledge from any place at any time. The communication devices can also include digital television, personal digital assistants (PDAs), and mobile phones.

Examples

The various examples of the ICT-based support system are -

- Blended Learning
- Digital Television

- Flipped Learning
- Internet-based Learning,
- Interactive Video Tutorials
- Individualized Learning using Portable Devices
- Learning Manager System (LMS)
- Massive Open Online Course (MOOC)
- Mobile Phones
- Online Learning
- Open Education Resource (OER)
- Personal Digital Assistants
- Small Private Online Learning (SPOLs)
- Study webs of Active Learning for Young Aspiring Mind (SWAYAM)
- Swayam Prabha
- Virtual Lab
- Virtual Reality
- Video and Interactive Video
- Web-based Learning
- National Institute Open School (NIOS)
- Information and Library Network (INFLIBNET)

Method

- Teacher direct learning (TDL)
- Learner direct learning (LDL)

Significance

The ICT-based support system is significant in many ways. For example -

1. It enables a flexible system in learning where just-in-time, effective, and efficient learning.
2. The learners determined the pace of learning in ICT based support system.
3. It facilitates collaborative internet and web-based learning opportunities for the learners.
4. It supports distance learning with wide area networks (WAN) and by creating multimedia CD-ROMs or websites.

Approaches of the Use of ICT Support System in Education

The different approaches of the use of the ICT support system in education are as follow:

Active Teaching and Learning Approach

It offers a platform for students to construct, question, and investigate the new information in the teaching-learning process.

Collaborative Teaching and Learning Approach

The ICT support system creates collaboration and interaction among students and teachers regardless of where they are. The ICT support system provides learners with the opportunity to work with people of different cultures and backgrounds. It helps in improving the learner's team and communicative skills as well as their global awareness.

Creative Teaching and Learning Approach

The ICT support system promotes the manipulation of existing information. It focuses on the creation of real-world products through the learning approach.

Integrative Teaching and Learning Approach

The ICT support system improves learning by an integrative approach to teaching or learning. It eliminates the artificial separation between the different disciplines, theories, and practices.

Evaluation Teaching and Learning Approach

The ICT support system recognizes several different learning pathways and articulations of knowledge. The pedagogy enabled by the ICT support system allows learners to explore and discover.

The emerging pedagogies enabled by ICT support system are -

- Activities determined by learners
- Working in teams
- Find new solutions to problems
- Integrating theory and practice
- Student-directed
- Diagnostic

Characteristics

1. In ICT based support system, there is the advantage of having hyper-linking. There are interactive parts that illustrate difficult things.
2. In ICT based support system, doing some exercises is also possible.
3. It allows a range of learning experiences, such as there is educational animation for online learners.
4. It also imparts e-training through asynchronous and synchronous communication modes. Thus it permits learners the convenience of flexibility. The learners may look at many other options to learn.
5. The specialized training is made available through customized software, which addresses the particular needs of the clientele almost through the synchronous mode on a dedicated broadband internet connectivity.
6. It also made available the training to the learners through the generic software displaying universal contents in asynchronous mode. The learners can be exposed to the asynchronous mode through a shared network with limited internet access or the support of www (World Wide Web).
7. It enhances teaching by professional development of teachers through training on usage of ICT in education.
8. The world links enable the teachers to integrate technology into teaching and thus create a dynamic student-centered learning environment inside the classrooms.
9. The faculties can also interact with their peer groups in the world. The faculty can exchange ideas and notes on the subject also.

Advantages

The various advantages of the ICT based support system are -

Availability

The ICT-based support system is available 24 x 7, anywhere and anytime.

Center

The ICT-based support system is a planned effort towards providing centers around the trainees.

Collaborative

The ICT-based support system is a collaboratively learning process with the help of exciting group activities.

Complex Structure

Through the ICT-based support system, teachers can easily explain the complex structure and instruction. The ICT-based support system ensures proper comprehension among the learners.

Economical

The ICT-based support system feels free to send an email. It is, without a doubt, cheaper than phone calls.

Facilitate Learning

The ICT-based support system is a well-planned effort to facilitate the learning process.

Flexibility

The ICT-based support system is a planned effort towards providing flexibility in terms of time, place, and pace; participation and accessibility; expertise and qualitative subject matter.

Interactive and Experiential Learning

The ICT-based support system is a planned effort towards providing interactive and experiential learning.

Online Content

With the help of the ICT-based support system, online and recording content helps the learners to understand the subject better. It also helps the students to memorize the concept for a longer time.

Resource

The ICT-based support system is the best resource at the doorsteps of the learners. It is a type of personalized training. The ICT-based support system helps the teachers to create interactive classrooms and make the lesson more enjoyable.

Disadvantages

Expansive

The ICT-based support system is too expensive to afford its setup for an organization or educational institution.

Harmful Effect on Health

More screen time leads to problems related to eyes sights, headache, etc.

Lack of Job Security

The ICT-based support system has made job security a big issue since technology keeps changing nearly every day. Therefore, individuals secure their jobs only if they will be in touch with the new changes, new advancements and study regularly about the latest technologies.

Lack of Experience

The ICT-based support system is not easy for teachers who have lack experience in using ICT-related gadgets.

Less Integration with Teachers

The ICT-based support system is more reliant on technology. As a result, the learners have less integration with teachers.

Malfunction

Computer viruses, worms, Trojans, malware, spam, phishing, any one or all can cause problems in the functioning of the ICT-based support system.

Privacy

As we know that the information technology or the ICT-based support system may have made communication quicker, easier, and more convenient, it has also brought along privacy issues like hacking, etc.

Reliance on Technology

In the present time, people are more dep on technology for their memory. So, they have poor memory. Many times, peoples use the calculator to perform minor addition or subtraction.

Reliability of Information

Anyone with access to a computer and an internet connection can start a blog or post something up on a website, so just because something on the web doesn't mean it is reliable.

Setting

Sometimes, the setting up of the device, related to the ICT-based support system, is very troublesome.

11.2 Difference Between the Traditional and ICT Support System

The difference between traditional and modern support system is given in the table below:

Sr. No.	Basis of Difference	Traditional Support System	ICT Support System
1	Teaching	In the traditional support system, learners learn as they practice and, whenever appropriate, work on the real-life problem in depth.	The ICT support system offers a platform for students to construct, question, and investigate the new information in the teaching-learning process. The teaching and learning process becomes less abstract and more relevant to the learner's life through the ICT support system.
2	Collaboration and Interaction	It creates collaboration and the interaction between the students and teachers only in face-to-face interaction or when they are at the same place.	It creates collaboration and interaction among students and teachers regardless of where they are. The ICT support system provides learners with the opportunity to work with people of different cultures and backgrounds. It helps in improving the learner's team and communicative skills as well as their global awareness.
3	Information	In the traditional support system, the regulation of received information is the way of teaching. It uses reproductive learning.	It promotes the manipulation of existing information. It focuses on the creation of real-world products through the learning approach.
Sr. No.	**Basis of Difference**	**Traditional Support System**	**ICT Support System**
4	Integration	There is no such integration exists in the traditional support system.	It improves learning by an integrative approach to teaching or learning. It eliminates the artificial separation between the different disciplines, theories, and practices.
5	Knowledge Acquisition Mode	It focuses on one type of teaching or learning approach. It purely pays attention and keeps in mind.	It recognizes several different learning pathways and articulations of knowledge. The pedagogy enabled by the ICT support system allows learners to explore and discover.
6	Resources	It consists of a physical classroom environment where you get hands-on experience of everything.	It consists of learning or teaching through technological devices such as computers, laptops, mobile devices, etc.
7	Learners	There is a homogeneous group of learners. (i.e., same age, nationality, etc.)	There is a heterogeneous group of learners (i.e., different ages, nationalities, etc.)
8	Time and Place of Learning	There is a foxed time for learning.	There is flexibility in time for learning.

9	Cost	The cost of the traditional support system is comparatively high as compared to the modern support system. The reason for the same is the requirement of classroom setup, course books, fees, etc.	The cost of the ICT support system is comparatively low as compared to the traditional support system. The reason for the same is the less requirement of classroom setup, course books, fees etc.
10	Material	The study material (i.e., books, etc.) is available in printed form.	The study material (i.e., books, etc.) is available in soft form i.e., on online in e-form.
11	Course	The learners can study one course at a time.	The learners can study multiple courses at a time.
12	Place of Study	It is found very difficult to learn courses from abroad universities.	It is found very easy to learn courses from abroad universities through online mode.
Sr. No.	**Basis of Difference**	**Traditional Support System**	**ICT Support System**
13	University	The learner can register with one university at a time.	The learner can register with multiple universities at a time.
14	Examination	The schedule of the examinations of learners is after a term or semester.	The schedule of the examinations of learners is after each topic.
15	Evaluation	Evaluation of the learners is done manually by teachers.	Evaluation of the learners is done automatically by computers or software.
16	Source	There are limited sources of learning material.	There are unlimited sources of learning material.
17	Certification	Learners get certificates of different courses in much more time as compared to the support system.	Learners get certificates of different courses in less time period as compared to the traditional support system.

Summary

In short, ICT is a planned effort towards providing interactive and experiential learning; flexibility in terms of time, place, and pace; participation and accessibility; expertise and qualitative subject matter; best resource at the doorsteps of the learners; personalized training; and centers around the trainees.

Keywords

ICT is Information and communication technology.

The **ICT-based support system** facilitates and enhances learning through both computer and communication technology.

Self Assessment

1. CBT is the older term dating from the_____.

A. 1979s

B. 1980s
C. 1981s
D. 1982

2. The term ICT-based support system evolved from _____.
A. computer-based training
B. modern-based training
C. communication-based training
D. traditional based training

3. The _____can also include digital television, personal digital assistants (PDAs), and mobile phones.
A. Both Traditional and Communication devices
B. Conventional devices
C. Communication devices
D. Traditional devices

4. The _____ determined the pace of learning in ICT based support system.
A. Teachers
B. Learners
C. Both Teachers and Learners
D. Principal

5. In ICT based support system, there is the advantage of having _____.
A. Link
B. Device
C. communication
D. Hyper-linking

6. The term ICT evolved from computer based training along with the maturation of
A. CDs
B. DVDs
C. internet
D. internet, CDs and DVDs

7. ICT based support system enhances
A. formal learning only
B. informal learning only
C. both formal and informal learning
D. distance education only

8. The full form of SWAYAM is
A. Systematic webs of Active Learning for Young Aspiring Mind
B. Study webs of Active Learning for Young Aspiring Mind
C. Study webs of Attentive Learning for Young Aspiring Mind
D. Study webs of Active Learning for Youth and Aspiring Mind

9. ICT based support system facilitates _____ opportunities for the learners.
A. collaborative internet and web-based learning
B. cooperative internet and web-based learning
C. collaborative internet and learning

D. learning

10. ICT based support system imparts e-training through the ___ communication modes.
A. asynchronous
B. synchronous
C. internet
D. asynchronous and synchronous

11. The ICT based support system facilitates collaborative internet and web-based learning opportunities for the learners.
A. True
B. False

12. There are interactive parts that illustrate simple things in ICT based support system.
A. True
B. False

13. The ICT-based support system is available 23 x 7.
A. True
B. False

14. The ICT-based support system is a planned effort towards providing interactive and experiential learning.
A. True
B. False

15. The ICT-based support system is not reliant on technology.
A. True
B. False

Answer for Self Assessment

1.	B	2.	A	3.	C	4.	B	5.	D
6.	D	7.	C	8.	B	9.	A	10.	D
11.	A	12.	B	13.	B	14.	A	15.	B

Review Questions

1. Analyze the meaning of the ICT-based support system.
2. Justify the significance of ICT based support system.
3. Explain various characteristics of the ICT-based support system in detail.
4. Discuss various advantages of the ICT-based support system.
5. Describe various disadvantages of the ICT-based support system.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude by KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://sites.google.com/site/eportfolioduaa/home/advantages-and-disadvantages-of-i-c-t
- https://xpertcube.com/modern-education-system/
- https://www.quora.com/What-is-the-difference-between-traditional-education-and-ICT-education
- https://www.ldceandnetexam.com/2020/10/10/teaching-support-system-traditional-modern-and-ict-based/
- https://www.scholarify.in/teaching-concept-objectives-characteristics-levels/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/
- https://www.ldceandnetexam.com/2020/10/10/teaching-support-system-traditional-modern-and-ict-based/
- http://worldcomp-proceedings.com/proc/p2012/FEC2651.pdf
- https://www.quora.com/What-is-the-difference-between-traditional-education-and-ICT-education

Unit 12: Evaluation Systems – I

CONTENTS

Objectives

Introduction

12.1 Evaluation Process and Evaluation System

12.2 Elements of Evaluation

12.3 Process of Evaluation Systems

12.4 Types of Evaluation

Summary

Keywords

Self Assessment

Answer for Self Assessment

Review Questions

Further Readings

Objectives

After studying this unit, you will be able to:

- define evaluation and evaluation systems,
- describe the characteristics of evaluation systems,
- explain elements of evaluation systems,
- enlist different types of evaluation based on different approaches of evaluation,
- analyze the process and different types of evaluation,
- distinguish between different types of evaluation.

Introduction

Evaluation is a broad programme than examination in which achievements, attitudes, interests, personality traits, and skills are taken into consideration.

The combination of qualitative (Judgement) and quantitative (measurement) processes is known as the evaluation.

Definition

According to Bradfield and Moredock, evaluation is an assignment of symbols to a phenomenon to characterize the worth of a phenomenon, usually concerning some social, cultural, or scientific standard.

Hanna states that evaluation is the process of gathering and interpreting evidence on changes in the behavior of all learners as they progress through an educational institution.

In the words of Writing stone, evaluation is a relatively new technical term introduced to designate a more comprehensive concept of measurement, that is, implied in conventional tests and examinations.

Moffatt defined the term evaluation as a continuous process. It is concerned with more than the formal academic achievement of the learners. It is interested in the improvement of an individual in terms of the desired behavioral changes concerning learners' feelings and actions.

12.1 Evaluation Process and Evaluation System

The evaluation process ascertains the workability of learning experiences and the change of behavior of the learners.

The cognitive learning outcomes, affective learning outcomes, and psychomotor learning outcomes are measured in the evaluation process.

An evaluation system is a process of collecting evidence of behavioral changes among the learners.

It also judges the direction and extent of behavioral changes among learners.

It includes instructional objectives, which the teacher taught to learners, and teaching-learning objectives, which the learners learned after teaching.

Characteristics

The various characteristics of the evaluation system are as follows:

Comprehensive

It is comprehensive because it includes everything.

Continuous

It is a regular and uninterrupted process.

Cooperative

It involves learners, peers, teachers, and parents. Therefore, it is a cooperative process.

Effectiveness

It evaluates the effectiveness of teaching methods.

Learner-centred

It is a learner-centred process and

Learning Process

It gives importance to the learning process, not to the teaching process.

Remedial in Nature

It interprets the result, which, ultimately helps in remedial work.

12.2 Elements of Evaluation

An evaluation system includes three core elements:

- Intervention Logic,
- Evaluation Questions, and
- Indicators

A brief description of three core elements of evaluation is as follows:

Intervention Logic

The intervention logic serves as the foundation for evaluations. The programme plan or intervention logic is the logical link between the objectives that needs to be pursued the underlying drivers of that problem, and the available policy options to address the problem or achieve the objective.

Evaluation Questions

Evaluation questions are the focus of evaluations. Evaluation questions define the focus of evaluations concerning policy objectives and help to demonstrate the progress, impact, achievements, effectiveness, efficiency, and relevance of the policy.

Indicators

Indicators are tools to measure the achievement of an objective (e.g. a resource mobilized, an output accomplished, or an effect obtained). Indicators also serve to describe the context (i.e., economic, social, or environmental).

The information provided by indicators is used as a measurement tool. Indicators are aggregates of data that allow for quantification (and simplification) of a phenomenon. Indicators are the measurement tools to collect evidence for all evaluations.

To perform evaluations, the three elements of the evaluation (i.e., intervention logic, evaluation questions, and indicators) must be nurtured with different evaluation approaches, methods, data, and information.

Evaluation Approach

An evaluation approach is a way of conducting an evaluation. It covers the conceptualization and practical implementation of an evaluation to produce evidence on the effects of interventions and their achievements.

Evaluation Methods

Evaluation methods are families of evaluation techniques and tools that fulfill different purposes. They usually consist of procedures and protocols. These procedures and protocols ensure systemization and consistency in the way of conduction of each evaluation.

Evaluation approaches and methods help to attribute the effects and impacts to a specific intervention. Therefore, they help the policymakers to understand the actual value of each intervention.

Data

The data is quantitative information on selected indicators or variables. It can be collected from the source itself (i.e., through survey, monitoring, statistics of entities) or secondarily through pre-existing sources (studies, aggregated statistics, etc.).

Information

Information, here, means qualitative information. Qualitative information is collected to provide context for the evaluation. It can be collected primarily from various stakeholders (i.e., intervention managers, beneficiaries, etc.) while using different qualitative or mixed methods (i.e., surveys, case studies, focus groups, interviews, etc.).

Data and information represent the evidence for the evaluation.

The other elements of evaluation systems are audience, purpose, questions, scope, and resources. The various questions related to these elements of evaluation systems are -

For what audience is the evaluation being conducted?

For what purpose is the evaluation being conducted?

What type of questions will be there in the evaluation?

What is the scope of the evaluation?

What resources are available to conduct the evaluation?

These questions are helpful to determine these elements of the evaluation system (i.e., audience, purpose, questions, scope, and resources).

12.3 Process of Evaluation Systems

The process of evaluation system for the teaching-learning process involves the setting of the various objectives and criteria evaluation, development as well as use of measurement tools for data collection, interpretation of collected data, formulation of the judgments based on the results, and taking appropriate action for the improvement of the teaching-learning process.

12.4 Types of Evaluation

The three approaches of evaluation are used in assessing the learner's performance in the educational institutions/school/teaching-learning environment. These evaluation approaches can be classified on the basis of the nature of reference, school practices, and types and functions.

Nature of Reference Approach

Based on the nature of the reference approach, evaluation can be divided into two types –

- Criterion-Referenced Evaluation and
- Norm-Referenced Evaluation

Criterion-referenced Evaluation

Criterion-referenced evaluation is related to the performance of the learners in a well-defined learning task. It has nothing to do with the norms or relative rank or position of students in any well-defined group.

For example, a learner successfully solves 80 percent of questions of a particular chapter, of a particular subject, of a particular class. In this example, the performance of the learner is defined in relation to a learning task i.e., a particular chapter, of a particular subject, of a particular class.

A criterion is pre-determined in criterion-referenced evaluation. For example, a fixed standard in a learning task, say 40% or 70%. In criterion-referenced evaluation, an evaluator can refer an individual performance to a pre-determined criterion that is well defined.

In criterion-referenced evaluation, the individual's status is ascertained with respect to some performance standard. The standard is the measure representing the criterion, and the criterion itself being a specified performance. In criterion-referenced evaluation, there is no question of comparing one learner with the other.

Therefore, the criterion-referenced evaluation will be used for the selection of the learners who have achieved a particular level of performance.

The class tests are used during the progress of instruction in the criterion-referenced evaluation. The criterion-referenced evaluation supports formative and diagnostic evaluation. An example of the criterion-referenced evaluation is Teacher-made tests. The specific instructional objectives are developed in the criterion-referenced evaluation. It can be carried out within a limited area, even in a school, class, or section. It is internal and can be used to certification or grading the learners.

Norm-referenced Evaluation

A norm-referenced evaluation is applicable for measuring one's relative position in a well-defined known group. For example, to know a learner's position or rank in an examination held in a particular year or time in a state or place, we can use the norm-referenced test. In norm-referenced evaluation, the performance of a single learner compared with other learners' performance in that group.

Suppose a learner secured 55 marks in a science subject. The mark 55 is an individual learner's score which provides a limited interpretation.

A single score never provides us the interpretation of how good or poor the student is in science. The individual score gives a definite meaning when compared with the other scores in the group.

A norm-referenced test is also a type of standardized test. So, a norm-referenced test follows the procedure of the standardized test.

The setting of norms should be according to a local, state, or national group depending upon the use of the result.

As we know that the norm-referenced tests are applicable for a wide range of the population, so the test items which are average in difficulty value are generally retained, i.e., rejecting very easy and very difficult questions. Therefore, a norm-referenced evaluation will be applicable for selecting a particular percentage or number of students.

An example of norm-referenced evaluation is final exams, that is, evaluations at the end of a term. Therefore, it supports summative evaluation.

Another example of a norm-referenced evaluation is standardized tests.

Instructional objectives are not pre-determined in a norm-referenced evaluation.

Importance is given to course objectives in a norm-referenced evaluation.

The organization of a norm-referenced evaluation is for a vast population, like learners in a state, region, etc.

It is an external evaluation. It can be used to know the learning progress of a learner and identify the learning difficulties of the learners.

School Practices Approach

External and internal evaluations are the two types of evaluation based on the school practices approach.

External Evaluation

The evaluation is called external evaluation, when the teacher who teaches is not involved in the evaluation process and when examinations are organized and conducted by an external agency. Examples of external evaluation are school boards, university, and competitive exams.

The teachers concerned do not get directly involved in the process of evaluation.

The external evaluations do not proceed with a specific objective in view. Thus, the results of such external evaluations are beneficial for a large number of purposes.

The actual testing is limited to a candidate answering a question paper or a series of question papers within a set time limit.

Internal Evaluation

In general, an internal evaluation system conducts most of the continuous and comprehensive evaluation. It supports the formative and diagnostic assessment. It is applicable to know the learning progress of the students. It also helps in identifying the difficulties that the students face during the process of teaching and learning. It also provides a base for remedial in the teaching-learning process to the identified students.

The criteria that followed for internal evaluation are:

- evaluating the involvement of the students in the teaching-learning activities of the class;
- the setting of the question paper by the class teacher teaching that class; and
- conduct of the examination vis-à-vis evaluation of the scripts by the teacher.

Internal evaluation is applicable in observation, peer evaluation, portfolios, projects, discussions, demonstrations, etc.

Types and Functions Approach

Based on the types and functions of the evaluation approach, the four types of evaluation are –

- Placement Evaluation
- Formative Evaluation
- Diagnostic Evaluation and
- Summative Evaluation

Placement Evaluation

This is the first stage of evaluation. Placement evaluation provides information about the learners to the teachers. It is conducted just before the start of the teaching-learning process. It is used to assess the existing knowledge of the learners and to know whether the learner will be able to acquire the new learning experiences based on his/her previous knowledge or not. The word entry behavior is the keyword used for a placement evaluation. It helps a teacher to organize the teaching-learning activities based on the previous knowledge of learners.

The various examples of placement evaluation are –

- Demonstration
- Storytelling
- Role Play etc.

Conduction of an entrance examination for selecting learners to a particular course is also an example of the placement evaluation.

Formative Evaluation

In 1967, Michael Scriven used the concept of formative evaluation while working on curriculum evaluation.

According to Scriven (1991), Formative evaluation is typically conducted during the development or improvement of a programme or product (or person, and so on) and it is conducted, often more than once, for in house staff of the programme with the extent to improve.

The purpose of conducting formative evaluation is to monitor the learning progress of the learner. Formative evaluation is frequently used in teaching pedagogy and the process of teaching and learning.

It is also conducted to know whether the learning objectives are being achieved or not. The word learning progress is the keyword in the formative evaluation. It is considered the second stage of evaluation which is conducted during the teaching-learning process.

It provides feedback to the teachers to know about the effectiveness of their teaching and the modification required. It helps the learners to know about the progress of their learning. It also provides scope for diagnostic evaluation.

The formative evaluation starts from the very beginning of designing instruction and continues till the end of the course/instruction.

The examples of formative evaluation are –

- Unit End Examination,
- Monthly Examination,
- Quarterly Examination,
- Half-Yearly Examination, and
- Annual or Final Examination.

The various tools of formative evaluation are –

- Questionnaire
- Observation and Interview Schedule
- Checklist and Rating Scale
- Anecdotal Records
- Document and Portfolio Analysis
- Tests and Inventories

The various techniques of formative evaluation are –

- Action Plans
- Assignments Debates
- Elocution
- Examination
- Experiments
- Group Discussions
- Projects
- Quizzes
- Seminars and
- Worksheets

Diagnostic Evaluation

Diagnostic evaluation is conducted along with formative evaluation during the instructional process. It is carried out based on the data obtained from the formative evaluation. The word learning difficulties is the keyword used in diagnostic evaluation.

The purposes of diagnostic evaluation are -

- To identify & know the causes of the learning difficulties of learners.
- To provide remedies for the learning difficulties, personal, physical, and psychological problems of learners (Nervousness, fear of teachers, psycho-social and physical disorders).

For example, if a learner couldn't understand certain concepts in a particular subject and continuously performing poorly in that subject, we conduct the diagnostic test to know the causes of the difficulties and accordingly provide them remedial treatment to overcome the difficulties.

Summative Evaluation

Summative evaluation is used to find out the extent to which the instructional objectives have been achieved at the end of a terminal period. It also provides information for judging the appropriateness of the course objectives and the effectiveness of instruction. It is used primarily for assigning course grades or marks or for certifying student's mastery of the intended learning outcomes at the end of a particular programme.

The techniques used for summative evaluation are determined by the instructional objectives. For this evaluation, both external and teacher-made tests are used.

Few other types of evaluations based on types and functions are briefly discussed below:

Goals-Based Evaluation

Goal-based evaluation is done at the end of a programme.

Economic Evaluation

Economic evaluation measures programme implementation benefit against the cost involved in the implementation.

Impact Evaluation

Impact evaluation measures the effectiveness from beginning to end and assesses long-term impact.

Outcome Evaluation

Outcome evaluation measures programme effect by assessing outcome objective.

Portfolio Evaluation

Portfolio evaluation takes place over a long period of time.

The tools of Portfolio evaluation are projects, written assignments, tests, etc.

In portfolio evaluation, the feedback to the learner is more formal and also provides opportunities for learners to re-demonstrate their understanding after the feedback has been understood and acted upon.

Process Evaluation

Process evaluation is executed when programme implementation begun and still running and aims to measure the effectiveness of programme procedures.

Prognostic Evaluation

The prognostic evaluation aims to predict the possible degree of success in a specific subject area.

Scholastic Assessment

Scholastic assessment refers to the assessment of cognitive abilities of learners in various academic activities, which are associated with various subjects. Therefore, all those abilities in the cognitive domain, namely, knowledge, understanding, application, analysis, synthesis, evaluation, and creativity come under scholastic abilities. The assessment of these scholastic abilities is done with the help of the scholastic assessment. For example, continuous and comprehensive evaluation (CCE).

Summary

Evaluation is both qualitative (Judgement) as well as quantitative (measurement) process. The evaluation process ascertains the workability of learning experiences and the change of behavior of the learners. The cognitive, affective, and psychomotor learning outcomes are measured in the evaluation process. The evaluation systems judge the direction and extent of behavioral changes among learners.

It is comprehensive, continuous, cooperative, effectiveness, learner-centred, gives importance to the learning process, and remedial in nature.

Intervention Logic, Evaluation Questions & Indicators are important elements of Evaluation Systems

The process of evaluation systems includes the setting of objectives, development as well as use of tools, interpretation of collected data, formulation of judgments, and take appropriate action.

Though all types of evaluation are concerned with the assessment of learning and are conducted in the teaching-learning process at different phases of the teaching-learning process, but the use of formative and summative evaluation is popular among them.

Placement evaluation is done to know entry behavior before the start of the instructional process.

Formative and diagnostic evaluation is done to know mastery in content and to solve learning difficulties during the instructional process.

Summative evaluation is done to certify the learners after or at the end of the instructional process.

All types of evaluation differ in terms of their purposes, processes, techniques, and tools used in collecting evidence, processes of providing feedback, functions, time/period in the teaching-learning process, and their uses.

Keywords

Evaluation is the combination of qualitative (Judgement) and quantitative (measurement) processes is known as the evaluation.

Evaluation process ascertains the workability of learning experiences and the change of behavior of the learners.

Evaluation system is a process of collecting evidence of behavioral changes among the learners.

Intervention logic serves as the foundation for evaluations and is the logical link between the objectives that needs to be pursued the underlying drivers of that problem, and the available policy options to address the problem or achieve the objective.

Evaluation questions are the focus of evaluations concerning policy objectives and help to demonstrate the progress, impact, achievements, effectiveness, efficiency, and relevance of the policy.

Indicators are tools to measure the achievement of an objective and serve to describe the context (i.e., economic, social, or environmental).

Evaluation approach is a way of conducting an evaluation and covers the conceptualization and practical implementation of an evaluation to produce evidence on the effects of interventions and their achievements.

Evaluation methods are families of evaluation techniques and tools that fulfill different purposes. They usually consist of procedures and protocols.

Data is quantitative information on selected indicators or variables.

Qualitative information is collected to provide context for the evaluation.

Process of evaluation system involves the setting of the various objectives and criteria evaluation.

Criterion-referenced evaluation is related to the performance of the learners in a well-defined learning task.

Norm-referenced evaluation is applicable for measuring one's relative position in a well-defined known group.

External evaluation is an evaluation in which the teacher who teaches is not involved in the evaluation process and when examinations are organized and conducted by an external agency.

Internal evaluation system conducts most of the continuous and comprehensive evaluation.

Placement evaluation provides information about the learners to the teachers. It is conducted just before the start of the teaching-learning process

Formative evaluation is typically conducted during the development or improvement of a programme or product (or person, and so on) and it is conducted, often more than once, for in house staff of the programme with the extent to improve.

Diagnostic evaluation is conducted along with formative evaluation during the instructional process.

Summative evaluation is used to find out the extent to which the instructional objectives have been achieved at the end of a terminal period.

Goal-based evaluation is done at the end of a programme.

Economic evaluation measures programme implementation benefit against the cost involved in the implementation.

Impact evaluation measures the effectiveness from beginning to end and assesses long-term impact.

Outcome evaluation measures programme effect by assessing outcome objective.

Portfolio evaluation takes place over a long period of time.

Process evaluation is executed when programme implementation begun and still running and aims to measure the effectiveness of programme procedures.

Prognostic evaluation aims to predict the possible degree of success in a specific subject area.

Scholastic assessment refers to the assessment of cognitive abilities of learners in various academic activities, which are associated with various subjects.

Self Assessment

1. _____ defined the term evaluation as a continuous process.

2. _____ are the focus of evaluations.

3. Goal-based evaluation is done _____.

4. Unit end examination is an example of _____ evaluation.

5. _____ are tools to measure the _____ of an objective.
6. Evaluation is the combination of
   A. qualitative and judgement processes
   B. quantitative and measurement processes
   C. judgement and measurement
   D. examination and testing

7. An evaluation system includes ____ core elements.
   A. six
   B. three
   C. four
   D. two

8. In order to perform evaluations, the elements of evaluation must be nurtured with different
   A. evaluation approaches, information, and methods.
   B. data, evaluation approaches, and methods.
   C. data, evaluation approaches, information, and methods.
   D. evaluation approaches, data, and information.

9. _____ help to attribute the effects and impacts to a specific intervention.
   A. data and information
   B. evaluation approaches and methods

C. data and evaluation approaches
D. information and methods

10. Data and information represent the evidence for the evaluation.
A. data and information
B. data
C. information
D. approaches

11. The _____ approaches of evaluation are usually used in assessing the learner's performance.
A. two
B. four
C. three
D. five

12. Norm-referenced evaluation will be used for the selection of
A. a particular percentage or number of students**.**
B. the learners who have achieved a particular level of performance.
C. the learners who have performed extraordinarily.
D. the learners who have achieved above a particular level of performance.

13. External evaluation is the type of evaluation based on
A. Nature of Reference
B. School Practices
C. Types & Functions
D. Functions

14. Which of the following is the key word in formative evaluation?
A. entry behaviour
B. learning progress
C. learning difficulties
D. cumulative learning

15. Scholastic assessment refers to
A. measure programme effectiveness by assessing outcome objective
B. measure the effectiveness of programme procedures
C. predict the possible degree of success in a specific subject area
D. assess the cognitive abilities of learners in various academic activities

Answer for Self Assessment

1.	Moffatt	2.	Evaluation questions	3.	at the end of a programme	4.	Formative	5.	Indicators, achievement
6.	C	7.	B	8.	C	9.	B	10.	A
11.	C	12.	A	13.	B	14.	B	15.	D

Review Questions

1. Define and analyze the term evaluation, evaluation process and evaluation system.
2. Write various characteristics of evaluation system.
3. Explain various elements of evaluation system.
4. How Criterion-referenced evaluation is different from Norm-referenced evaluation.
5. Discuss different types of evaluation based on the types and functions of the evaluation approach.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://stepsandladderstosuccess.com/teaching-aptitude-4/
- https://enrd.ec.europa.eu/evaluation/back-basics/elements-evaluation-system_en
- https://www.aprcet.co.in/2020/06/elements-and-types-of-evaluation-nta-ugc-net-notes.html
- https://gradeup.co/study-notes-on-types-of-evaluation-for-paper-1-i
- http://egyankosh.ac.in/bitstream/123456789/46039/1/BES-127B1E.pdf
- https://cbseugcnetforum.in/teaching-aptitude/evaluation-system/
- https://aspe.hhs.gov/report/assessment-approaches-evaluating-telemedicine/3-elements-evaluation
- https://ctb.ku.edu/en/table-of-contents/evaluate/evaluation/evaluation-plan/main
- https://www.ahrq.gov/talkingquality/assess/evaluation-plan.html
- https://www.slideshare.net/vsk84/evalution-56492340
- https://www.scholarify.in/evaluation-systems/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

Unit 13: Evaluation Systems -II

CONTENTS

Objectives
Introduction
13.1 Choice Based Credit System (CBCS)
13.2 Evaluation in Choice Based Credit System in Higher Education
13.3 Computer Based Testing (CBT)
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Readings

Objectives

After studying this unit, you will be able to:

- define choice-based credit system and computer-based testing,
- explain the evaluation process in choice-based credit system in higher education,
- understand the procedure of computer-based testing,
- analyze advantages and disadvantages of choice-based credit system and computer-based testing,
- differentiate between computer based and paper-based testing.

Introduction

All over the world higher education institutions have been moving from the conventional annual system to the semester system. Currently, many of the institutions have already introduced the choice-based credit system.

It has been observed that the semester system accelerates the teaching-learning process and enables vertical and horizontal mobility in learning.

The credit-based semester system provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching. The choice-based credit system provides a cafeteria type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning.

In the present scenario, the higher education institutions should move to choose based credit system and implements the grading system.

13.1 Choice Based Credit System (CBCS)

Concept and Meaning

The choice-based credit system is an instructional package developed to suit the needs of students to keep pace with the developments in higher education. It also focuses on quality assurance in the light of liberalization and globalization in higher education. It essentially implies a redefining of the curriculum into smaller measurable entities with the hours required for studying or learning. Here, learning is the primary focus and not teaching. It also works for the development of a mechanism

whereby the various modules (i.e., curriculum into smaller measurable entities) can be combined in different ways to qualify students for a certificate, diploma, or degree.

Types of Courses

There are three types of courses in a programme -

Core,

Elective, and

Foundation

Core Courses

The description of these courses is given as follows:

Core Courses

Core courses are that type of courses which are there in every semester. These courses are supposed to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

Elective Courses

Elective courses are the courses that can be chosen from a pool of papers. These courses are very beneficial for students. These courses expose the students to some other discipline/domain, nurtures student's proficiency/skill, provide an expanded scope to students, and are supportive to the discipline of study.

An elective course may be a general or generic elective, focusing on those courses which add generic proficiency to the students.

An elective course may be discipline-centric or may be chosen from an unrelated discipline. It may be called an open Elective or sometimes a social elective.

Foundation Courses

The foundation courses may be of two kinds-

Compulsory Foundation

Elective foundation

Compulsory Foundation

Compulsory foundation courses are the courses based upon the content that leads to knowledge enhancement. They are mandatory for all disciplines.

Elective Foundation

Elective Foundation courses are value-based courses. These courses are aimed at man-making education.

Important Key Terms (Used in Credit Based Semester System)

As per UGC norms, the choice-based credit system (CBCS) includes some important key terms which are explained as follows:

Academic Year

Two consecutive (one odd + one even) semesters constitute one academic year. Generally, there are two academic years (including four semesters) in the post-graduation programme and three to four academic years (including six to eight semesters) in the graduation programme.

Choice Based Credit System (CBCS)

The choice-based credit system provides a choice for students to select courses or subjects from the prescribed list of courses (i.e., core, elective or minor, or soft skill courses).

Core Course

Core Course is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

Elective Course

The elective course (or minor or soft skill) is a course that can be chosen from a pool of papers. It adds general or generic proficiency to the students, exposes the students to some other discipline/domain, nurtures student's proficiency or skill, provides an expanded scope to students, and is supportive to the discipline of study.

Course

The course usually referred to as papers or subjects is a component of a programme. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes.

Credit Based Semester System (CBSS)

Under the credit-based semester system, the requirement for awarding a certificate/degree/diploma is prescribed in terms of the number of credits to be completed by the students.

Credit Point

The credit point is the product of a grade point and the number of credits for a course.

Credit

Credit is a unit by which the course work is measured. It determines the number of hours of instructions required per week for a course. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work or field work per week.

Cumulative Grade Point Average (CGPA)

CGPA is a measure of the overall cumulative performance of a student over all the semesters. It is expressed up to two decimal places.

Grade Point

Grade point is a numerical weight allotted to each letter grade on a 10-point scale.

Letter Grade

A letter grade is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P, and F.

Programme

Programme is an educational programme leading to the award of a certificate, degree, or diploma.

Semester Grade Point Average (SGPA)

SGPA is a measure of the performance of work done in a semester. It is the ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester.

Semester

A semester is a period that is equal to 15-18 weeks of academic work which is equivalent to 90 actual teaching days. The odd semester may be scheduled from July to December and even semester from January to June.

Transcript or Grade Card or Certificate

A transcript or grade card or certificate is a sheet showing the performance of a student in different courses/subjects of a programme. It is based on the grades earned. A grade certificate shall be issued to all the registered students after every semester.

The grade card or certificate will display the personal details and performance of a student in different courses (i.e., Personal information of students like regd. No., name of student Photo, etc., course code, title, number of credits, grade secured) along with SGPA of that semester and CGPA earned till that semester.

13.2 Evaluation in Choice Based Credit System in Higher Education

The usual approach in assessing the performance of the students in examinations is to award marks based on the examinations conducted at various stages (i.e., CAs/class test/assignments/sessional, mid-term, end-term exams, etc.,) in a semester.

Some of the institutions convert these marks to letter grades based on the absolute or relative grading system and award the grades to the students according to their marks.

There is a marked variation across the colleges and universities in the number of grades, grade points, letter grades used, which creates difficulties in comparing students across the institutions.

For making uniformity in all institutions while awarding grades and comparing students' performances across the institutions, The UGC recommends the implementation of a system in awarding the grades and CGPA under the credit-based semester.

The system recommended by the UGC for the evaluation in the choice-based credit system includes

Letter Grades and Grade Points

Fairness in Assessment

Letter Grades and Grade Points

There are two methods for awarding grades in a course i.e., relative grading or absolute grading.

Relative Grading

The relative grading is based on the distribution (usually normal distribution) of marks obtained by all the students of the course and the grades are awarded based on cut-off marks or percentile.

Absolute Grading

Under the absolute grading, the marks are converted to grades based on pre-determined class intervals.

For example, grade D for 40%, grade C for 60%, grade B for 80%, and grade A for 90% and above.

The UGC also recommends a 10-point grading system with the following letter grades as given below:

Letter Grade	O	A+	A	B+	B	C	P	F	Ab
Full Form	Outstanding	Excellent	Very Good	Good	Above Average	Average	Pass	Fail	Absent
Grade Point	10	9	8	7	6	5	4	0	Reappear

A student obtaining a grade 'F' shall be considered failed and will be required to reappear in the examination.

For non-credit courses 'Satisfactory' or 'Unsatisfactory' shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

The universities can decide on the grade or percentage of marks required to pass in a course and also the CGPA required to qualify for a degree taking into consideration the recommendations of the corresponding statutory body or professional councils such as NCTE (National Council for Teacher Education), AICTE (All India Council for Technical Education), MCI (Medical Council of India), BCI (Bar Council of India), etc.,

The statutory requirement for eligibility to enter as an assistant professor in colleges and universities in the disciplines of arts, science, commerce, etc. is a minimum average mark of 50% and 55% respectively for reserved and general categories in a relevant postgraduate degree.

Hence, it is recommended that the cut-off marks for grade B shall not be less than 50% and for grade B+, it should not be less than 55% under the absolute grading system.

Similarly, cut-off marks shall be fixed for grades B and B+ based on the recommendation of the statutory bodies (NCTE, AICTE, etc.) of the relevant disciplines.

Fairness in Assessment

UGC also recommends a system of checks and balances which would enable universities to effectively and fairly carry out the process of assessment and examination.

In case of at least 50% of core courses offered in different programmes across the disciplines, the assessment of the theoretical component towards the end of the semester should be undertaken by external examiners from outside the university conducting the examination, who may be appointed by the competent authority. In such courses, the question papers will be set as well as assessed by external examiners.

In the case of the assessment of practical components of such core courses, the team of examiners should be constituted on a 50 – 50 % basis. i.e. half of the examiners in the team should be invited from outside the university conducting the examination.

In case of the assessment of project reports/thesis/dissertation etc., the work should be undertaken by internal as well as external examiners.

Computation of SGPA

We know that

SGPA (Si) = Σ (Ci x Gi) / ΣCi .

Where

Σ (Ci x Gi) = the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student.

ΣCi = the sum of the number of credits of all the courses undergone by a student.

Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the itch course.

Illustration-1 for SGPA/TGPA

Course	Credit	Letter Grade	Grade Point	Credit x Grade Point
A	4	A+	9	36
B	5	O	10	50
C	2	C	5	10
D	3	B+	7	21
Total	Σ Ci =14	-	-	Σ(Ci x Gi) = 117

From the above table,

Σ (Ci x Gi) = 117

ΣCi = 14

Now,

SGPA (Si) = Σ (Ci x Gi) / ΣCi = 117/14 = 8.3571428

SGPA (Si) = 8.36 (Round up to 2 decimal places)

Computation of CGPA

We know that

CGPA = Σ (Ci x Si) / Σ Ci .

Where

Σ (Ci x Si) = the sum of the product of the total number of credits of a semester with the corresponding semester's grade points average scored by a student in all the semesters.

Σ Ci = the sum of the number of credits of all the courses undergone by a student.

Si is the SGPA of the itch semester.

Ci is the total number of credits of the itch semester.

Illustration 2 for CGPA

Semester	Credit	SGPA/TGPA	Credit x SGPA
1	20	6.90	138
2	24	7.65	183.6
3	20	7.22	144.4
4	26	7.77	202.02
Total	Σ Ci = 90	-	Σ(CixSi) = 668.02

From the above table,

Σ (Ci x Si) = 668.02

ΣCi = 90

Now

CGPA = Σ (Ci x Si) / ΣCi = 668.02/90 = 7.422444

CGPA = 7.42 (Round up to 2 decimal places)

Advantages of Choice Based Credit System (CBCS)

The various advantages of the choice-based credit system are discussed below:

Credit Transfer

The credits earned by a student at one institution can be transferred to another.

Educational and Occupational Aspiration

It helps in upgrading the educational and occupational aspirations of the upcoming generation.

Essential

In the present context, the CBCS is essential for higher education.

Facilitates Mobility

It facilitates the learner's mobility by offering him/her the opportunity to study at different times and in different places.

Freedom

It gives students the freedom to choose subjects which are beneficial for them.

Interdisciplinary Approach

The CBCS of courses helps the students to improve their interdisciplinary approach in education.

Job-Oriented Skills

The CBCS prepares students for the future. Industries want employees who are all-rounders with multidisciplinary knowledge and not students with knowledge about just one stream. Thus, the CBCS imparts job-oriented skills to students.

Learner Autonomy

It gives learner autonomy to the learners. Learner autonomy allows learners to choose according to their own learning needs, interests, and aptitudes.

Learning Environment

The CBCS provides a cross-cultural learning environment.

Performance

The CBCS allows students to choose subjects that they find interesting. Students perform better when they learn about things they like.

Quality Education

The CBCS improves the standards of education and provides quality education to the learners.

Self-reliant

As students choose their subjects, that means, they learn to make decisions that are beneficial for them. This helps students to become self-reliant at an early age.

More autonomy is given to the students in this system. In this system, students need not repeat the full semester if a student is failed in one paper.

If a student falls sick or is unable to cope up then he/she can choose fewer subjects and earn fewer credits in one semester. They can then compensate for the lost credits in the next semester.

Disadvantages of Choice Based Credit System (CBCS)

Complicated

It is complicated, especially because of the shortage of teachers or infrastructure.

Evaluation

There is no betterment system of evaluation in this system.

Estimation of Exact Marks

It is difficult to estimate the exact marks in CBCS.

For example, if the CGPA of a student is 8.97 out of 10 and the multiplication factor is 10 (say) to convert the CGPA into percentage, the corresponding percentage of the student is 89.7%. If the student studied 24 papers in the programme, then the exact marks the learner obtained in the aggregate are difficult to calculate. Let us suppose 100 be the maximum mark for each paper. The corresponding total maximum marks of all the 24 papers are 2400.

89.7% of 2400 = 2152.8, this is again not the exact estimation.

Infrastructure Facilities

Shortage of infrastructure facilities i.e., building, laboratory facilities, and practical classroom affects CBCS.

Irresponsible Behaviour

One subject can be repeated three times, which makes the students irresponsible.

Partial Knowledge

Students can have only partial knowledge of any new subject chosen by the student as an extra credit subject.

Planning

In CBCS, the students cannot plan effectively their list of subjects.

Punctuality

It needs more punctuality from the student in CBCS.

Overburden

In the CBCS, Numbers of courses are imposed, which is an overburden for the student as well as teachers.

Workload

The workload of teachers may fluctuate in the CBCS.

In short, it has been observed that the implementation of CBCS has some Practical limitations. It demands good infrastructure for the dissemination of education.

13.3 Computer Based Testing (CBT)

Concept and Meaning

Computer based testing refers to delivering assessments with computers as an alternative to pen and paper. Such a test can be conducted online through the use of the internet or a computer-aided facility.

Computer based testing is a time-efficient and effective means of hosting large-scale online examinations at the same time or concurrently. It enables educational institutions to evaluate candidates' performance quickly irrespective of their geographical location.

Some of the features of computer-based testing are online invigilation, randomization of questions, and simultaneous management of students.

Computer based testing provides auto-grading and section-wise feedback.

In computer-based testing, the candidates sit in front of a computer, and the questions are presented on the monitor and the candidates submit the answers through the use of a keyboard or mouse.

Each computer is connected to a server, which prepares the question set and delivers it to the candidates on the computer.

Types of Computer Based Testing

The different types of CBT are enlisted below:

- Class Quizzes/Tests (MCQ)
- Online Assignments
- Mid-Term & End-Term Exams
- Entrance Exams
- Google form (it can be used for quiz/tests)

Class Quizzes/Tests (MCQ)

The description of the online quiz or multiple-choice test is given below:

Question Pool

A teacher has to create a pool of questions by entering the multiple-choice questions. Four options and one correct option out of four have to be entered and selected respectively the teacher.

There is an option 'question editing' available in the question pool for correcting the wrong entry.

A single specific code is assigned to all the questions of a particular test with the help of which later on all the questions can be searched or selected for the test.

Text or images can be saved as per the requirement of the questions or test.

A teacher can frame a question having different options as the multi-choice single answer, true/false, yes/no, fill in the blanks, etc.,

The minimum number of options must be two and options may be text or image.

The marks corresponding to each question must be entered side by side.

Test Designing

After creating the pool of questions, the teacher has to create the test by entering the name of the test, the time allowed, no. of questions to display from the pool of questions, start and end date with time, maximum, as well as pass marks of the test, percentages of the negative marking (if any), random question and options, no. of warnings to students in case of e-cheating, select the

individual who can attempt the test, no of chances for students to attempt the test, and test-related instructions which are visible to the candidates before the start of the test.

The designing of the test will be done by searching the questions with the help of specific code assigning at the time of question punching. As per the requirement of the test, a specific number of questions will be shortlisted from the available list of questions and press final submission.

Attempt Test

The students can attempt the test on the scheduled date and time. They can assess their detailed result along with the different types of analysis and give their feedback related to the test.

The CBT can also be classified as **online** and **offline** tests.

Online Tests

It is computer-based testing using online assessment software. It can be used anytime, anywhere and results are auto generated. A single test can be conducted on many devices at the same time. The checking/grading is done automatically, and reports are generated automatically in online tests. Teachers or students can visit or create the result/report of the test at any time.

Offline Tests

Offline tests are computer-based test software and are available only on a single device. A single test cannot be taken on different devices simultaneously. The grades are prepared manually, and reports are prepared later. Offline computer-based tests are assigned manually.

Procedure

The procedure of CBT includes -

- Registration - First the registration of all the students must be ensured.
- Centre Allocation - Allocate the examination center to all the students.
- Admit Cards Generation - The organizer generates the admit cards for all the students and distributes the same to the students.
- Question Paper Creation - The subject experts prepare the questions for the test/exam. The question paper for the exam is created by punching the prepared questions in the database or on the portal or test interface.
- Test on Computer - The test will be conducted on the computer on the scheduled date and time.
- Result Declaration - The result of the computer-based test will be declared as per the scheduled and shared with the students.

Advantages

Accurate

It increases the accuracy of marking because marking is more accurate, consistent, and without human error.

Auto-grading

The grading of the answer or response sheets is done automatically with the help of CBT.

Convenient

CBT is a very convenient method of assessment as compared to paper-based tests.

Efficient

It enhances students' performance or efficiency.

Economical

It is very economical in terms of the paper, the time required for its conduction and grading.

Flexible

CBT is flexible in terms of the location of the conduction of evaluation and types of tests. Students can attempt exams at their place without spending money on travel. The formative and summative tests can be conducted comfortably with the help of CBT.

Impartial

The results are impartial or free from the biases of the evaluator. The subjectivity of the evaluator has no impact on the results of the students.

Motivation

There is an increase in the motivation level of students with CBT through interactive quizzes.

Performance

It enhances the performance of the students and gives immediate results as well as instant feedback.

Reduced Human Errors

In CBT, the marking is more accurate, consistent, and without human error.

Reuse

The teacher can reuse the same test with different students.

Disadvantages

Computer Literacy

It does not help the individual who has no or less computer literacy, is not computer savvy, and has less exposure to technology.

Depth of Learning

Students may skip-read the course just to complete it, so the depth of learning may be limited in students.

E-Cheating

Students try to do cheating (e-cheating) by search answers from other sites or sources.

Expensive

It is an expensive option, and this factor can deter many government organizations from opting for it.

Infrastructural Barriers

While the online examination system offers great scope to increase inclusion and accessibility for students across the world, its positive impact can still be mitigated by the infrastructural conditions of the location in question. Such barriers are out of the control of the system itself, however, it is undeniable that it is affected by it.

In many parts of the world things like steady internet connectivity, the existence of an electrical connection, and other infrastructural considerations might interfere with how an online examination system will work. It is thus important to keep the audience taking the exam in mind when implementing the use of this system at your school.

Interaction

The course may be boring due to the lack of interaction with other people.

Internet Connectivity

There is an uneven distribution of internet networks as the internet network in some areas can be poor.

Physical Practice

Training is mainly audio-visual with very little physical practice. But many things need to be learned by doing i.e., through physical practice. e.g. swimming, driving. Computer based training can only be a supportive measure in this instance e.g. tips for better technique.

Motivation

Due to the lack of motivation, students may miss important dates.

Revision

It is only helpful for revision purposes through simulation and practice.

Security Issues

If proper security measures are not taken, then there is a chance of the loss of total examination data by hacking the database of questions.

Technical Glitch or System Failure

There is a possibility of a technical glitch, power cut, or system failure.

Not suited for Collaborative Evaluations or Group Projects

The very nature of examinations in the online examination system prevents certain modes of evaluation from being implemented at the school. The most obvious one here is that it is not an ideal platform for collaborative evaluations or group projects. This is because the nature of the platform is objective, preventing subjective evaluations where points are handed out to a group for subjective efforts, rather than points awarded on an existing framework.

Disadvantages for Students

Answers on online assessments can only be right or wrong. There is no room for explaining your answer or getting partial credit. For example, in geometry or calculus exams on paper, a teacher can see how you worked out your equation.

He can identify where you went wrong to come up with the wrong answer. In this case, he can give you partial credit. Online assessments don't give teachers the option to see your line of thinking to get to your answer.

Disadvantages for Teachers

Technology isn't always reliable. Information can be lost if a system breaks down. In some cases, teachers need some technical expertise to create exams.

The costs to set up an electronic assessment system in a learning institution or business training environment can cost thousands, even tens of thousands. Testing online is not suitable for essay writing and analysis or cognitive thinking testing.

Summary

Choice Based Credit System is an instructional package developed to suit the needs of students. It is a better system and students can better their performance. It gives learners the freedom to choose subjects which is beneficial for students. CBCS system of courses helps the students to improve the interdisciplinary approach in education. Thus, CBCS imparts job-oriented skills to students. This helps students to become self-reliant at an early age. It demands good infrastructure for the dissemination of education.

Computer based testing is an alternative to pen and paper. It is a time-efficient and effective means of hosting large-scale online examinations at the same time. It can test the lower and higher-order skills of the learners. It can do auto-grading, quick analysis, and provides section-wise feedback. It also generated reports automatically. It evaluates candidates' performance quickly irrespective of their geographical location.

Keywords

Choice based credit system is an instructional package developed to suit the needs of students to keep pace with the developments in higher education.

Computer based testing refers to delivering assessments with computers as an alternative to pen and paper.

Self Assessment

1. There are _____ types of Courses in a programme.

2. _____ is a measure of overall cumulative performance of a student over all semesters.

3. Letter Grade is an _____ of students in a said course.

4. CBT enables educational institutions to evaluate candidates' _____ quickly.

5. CBT provide auto-grading and _____ feedback.

6. The Choice Based Credit System primary focus at
   A. learning
   B. teaching
   C. both learning and teaching
   D. neither learning nor teaching

7. There are _____ types of courses in a programme.
   A. four
   B. five
   C. three
   D. two

8. Grade Point is a numerical weight allotted to each letter grade on _____.
   A. a 11-point scale
   B. a 10-point scale
   C. a 9-point scale
   D. a 8-point scale

9. The relative grading is based on
   A. absolute grading
   B. pre-determined class intervals
   C. grade points
   D. normal distribution

10. As per UGC recommendation, letter grade B^+ means _____ and corresponding grade point is _____.
    A. average: 05
    B. above average: 06
    C. good; 07
    D. very Good; 08

11. Computer based testing provide
    A. auto-grading and section-wise feedback
    B. auto-grading only

C. manual-grading only
D. manual-grading and section-wise feedback

12. Which of the following is/are not the type/types of computer-based testing?
A. class quizzes and entrance exams
B. class tests
C. google form and offline tests
D. all are the types of computer-based testing

13. In offline computer-based testing,
A. grading is done automatically, and reports are generated automatically.
B. grades are prepared manually, and reports are generated automatically.
C. grades are prepared manually, and report prepared later.
D. grading is done automatically, and reports prepared later.

14. Which of the following is the third step in the procedure of computer-based testing?
A. center allocation
B. admit cards generation
C. question paper creation
D. result declaration

15. Computer based testing is not suitable for
A. multiple choice questions and essay writing
B. multiple choice questions and cognitive thinking
C. multiple choice and true-false questions
D. essay writing and cognitive thinking

Answer for Self Assessment

1.	three	2.	Cumulative Grade Point Average	3.	index of the performance	4.	performance	5.	section-wise
6.	A	7.	C	8.	B	9.	D	10.	C
11.	A	12.	D	13.	C	14.	B	15.	D

Review Questions

1. What do you mean by choice-based credit system? Explain different types of courses in a programme.
2. Explain different important key terms included in Choice Based Credit System (CBCS) as per UGC norms.
3. Analyze various advantages and disadvantages of choice-based credit system.
4. Computer based testing is considered to be a good evaluation system. Justify.
5. Explain the procedure of designing a multiple-choice test through computer based testing system.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude By KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.

- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- http://www.shanlaxjournals.in/pdf/ASH/V2N4/Ash_V2_N4_012.pdf
- https://www.aprcet.co.in/2020/01/evaluation-in-choice-based-credit-system-in-higher-education.html
- https://www.aprcet.co.in/2021/05/computer-based-testing-cbt-ugc-net.html
- https://www.quora.com/What-is-a-computer-based-test
- https://blog.mettl.com/computer-based-test/
- https://elearningindustry.com/15-benefits-of-computer-based-testing
- https://www.collegedekho.com/articles/advantage-of-taking-a-computer-based-test-cbt-exam/
- https://fedena.com/blog/2019/08/advantages-disadvantages-online-examination-system.html
- https://www.theclassroom.com/advantages-disadvantages-online-assessment-8243449.html
- http://www.teach-ict.com/as_a2_ict_new/ocr/A2_G063/334_applications_ict/
- https://www.onlineexambuilder.com/knowledge-center/exam-knowledge-center/advantages-and-disadvantages-of-online-examination-system/item10240
- https://www.scholarify.in/
- https://www.scholarify.in/choice-based-credit-system-cbcs/
- https://www.scholarify.in/computer-based-test-cbt/
- http://www.simplynotes.in/entrance-exams/ugc-net-paper-1-study-material/teaching-aptitude-study-notes/7/

Unit 14: Innovations in Evaluation Systems

CONTENTS

Objectives
Introduction
14.1 Concept Map or Maps
14.2 E-Portfolio
14.3 Podcasting
14.4 Vlog
14.5 Talk Show Performance
14.6 The Minute Paper
14.7 Artificial Intelligence
14.8 Assessment Rubrics
Summary
Keywords
Self Assessment
Answer for Self Assessment
Review Questions
Further Readings

Objectives

After studying this unit, you will be able to:

- define concept map, e-portfolio, podcast, vlog, talk show performance, artificial intelligence, and assessment rubrics,
- understand purpose of concept map, e-portfolio, minute paper, and assessment rubrics,
- analyze the various uses of concept map, podcast, vlog, minute paper, assessment rubrics,
- use talk show performance, minute paper, artificial intelligence, and assessment rubrics as an evaluation tool.

Introduction

Gomes et al. (2011) state that pedagogical changes have been propounded with an aim to transform the student into a critical, reflective individual who is able to fully learn how to learn in his/her practice.

14.1 Concept Map or Maps

A concept map is a visual tool that helps an individual to dig into an idea in detail.

A concept map explores subtopics, understands relationships, and organizes thoughts logically and systematically.

Therefore, it is a time to say goodbye to the unreadable mess of notes and welcome a concept map that gives information and context in need.

A concept map is a visual representation of information. It can take the form of charts, graphic organizers, tables, flowcharts, Venn diagrams, timelines, or T-charts.

A concept map benefits any learner, especially useful for students who learn better visually. It is a powerful study strategy. It helps an individual to see the big picture by starting with higher-level concepts.

A concept map helps an individual to chunk information based on meaningful connections.

In other words, knowing the big picture makes details more significant and easier to remember.

A concept map is a diagram that shows the relationships between different ideas. It helps an individual to understand how they're connected.

Every concept map, whether it's simple or complex, is made up of two key elements. The two key elements are concepts and relationships.

Concepts

Concepts represented by circles, ovals, or boxes and are called "nodes."

Relationships

Relationships represented by arrows that connects the concepts. Arrow often includes a connecting word or verb. These arrows are called "cross-links."

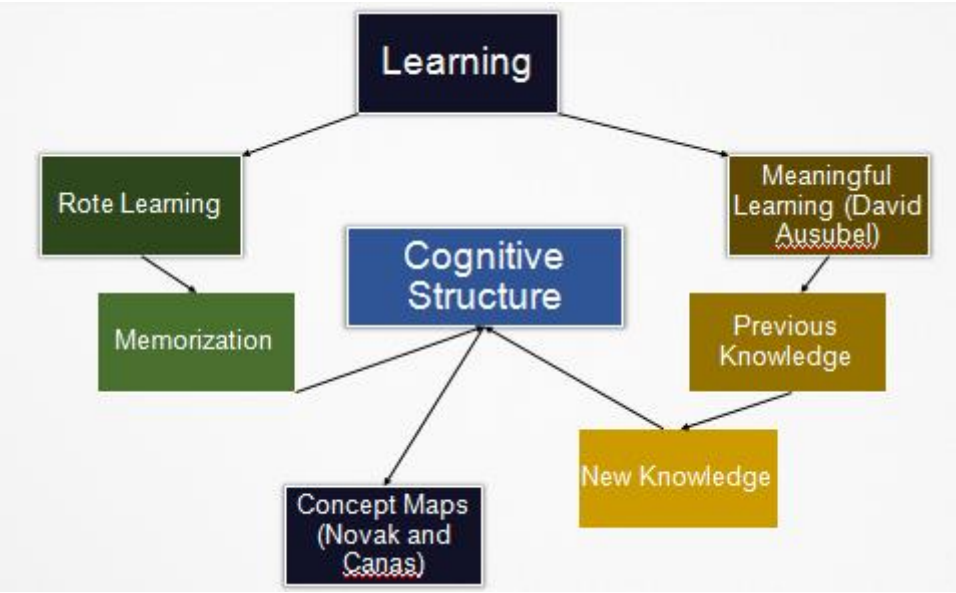
A concept map is a visual tool or diagram that illustrates the relationships between different ideas so that an individual can better understand their connections.

According to Torre, Durning, and Daley (2013), "A concept map is an instructional strategy for individual and group learning. It involves the integration of knowledge and creation of meaning by relating concepts."

Moreover, a concept map helps the learners to organize and represent ideas. With the help of a concept map, one can reflect on learning and develop a deeper understanding. Activities like teaching, testing, training, and thinking can use a concept map. All of these activities represent a learning continuum.

Novak, Canas, and collaborators (2006) developed a concept map from David Ausubel's theory called the meaningful learning theory. It proposed that knowledge construction is based on relevance and integration but not just on **mere/arbitrariness or** rote learning.

The visual presentation of the Concept Map based on Ausubel's Theory is given below:



According to Gomes et al. (2011), Ausubel reasoned that pre-existing cognitive structures promote assimilation of the new proposals. They nurture the connection between concepts. They allow the development of new concepts. They also allow the integration of concepts.

When a concept map is used effectively, it promotes critical thinking and problem-solving capabilities allowing students to convert theoretical into application-based knowledge.

Purposes of Concept Map

The purposes of the concept include digging into a topic, organization of thoughts, remembering important information, and understand relationships.

Dig into a Topic

When creating a concept map, an individual starts with an overall concept and then works to identify sub-topics. It requires that an individual and team sink their teeth into the subject/subjects, rather than grasping the surface-level information.

Organize Thoughts

If an individual and team participate in a brainstorming session or workshop, individuals are bound to end up with a ton of ideas. That big jumble can be difficult to act on, and a concept map helps an individual to make sense of them in a visual, easy-to-understand way.

Remember Important Information

Studies show that visual learning produces better recall than auditory learning. So, if an individual and team need to work through a problem or understand a topic, a concept map will boost comprehension and retention.

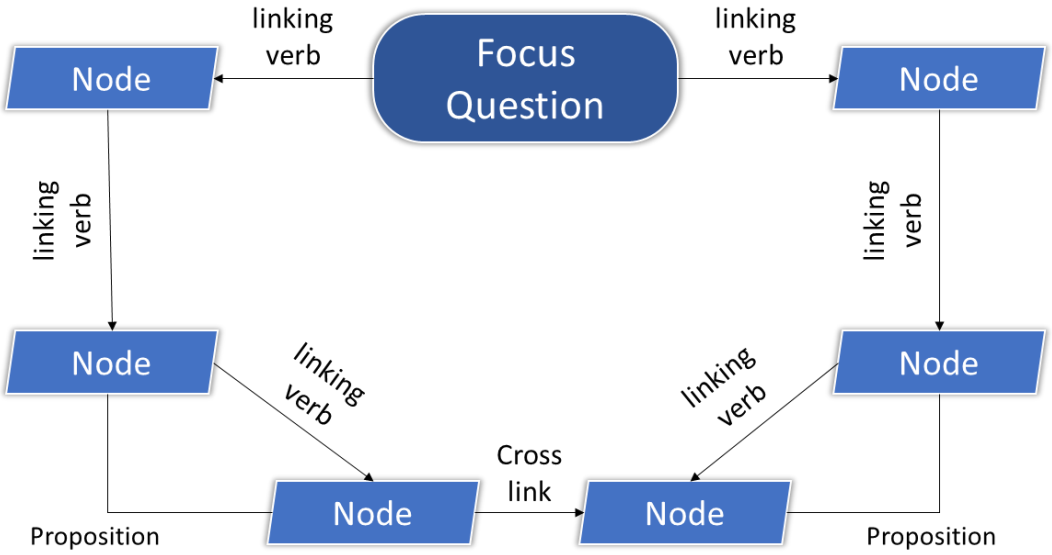
Understand Relationships

The emphasis on relationships is the biggest benefit of a concept map. It shows an individual's ideas and their relation with one another. It can help an individual and team uncover connections that an individual would not have identified automatically or on its own.

A concept map is more than just bubbles and lines. It is a powerful tool that can help you understand the ins and outs of the topic at hand.

Structure of Concept Map

According to Gul and Boman (2006), and Gomes et al. (2011), the structure of a concept map includes nodes, linking verbs, cross-links, and propositions. The complete structure of a concept map is built around a focus question or theme. Every concept or idea is represented as a word or short phrase and lies inside a box which is called a node. A linking verb connects the nodes and explains the relationship between them. The cross-links are relationships between concepts in different domains of the concept map, allowing us to visualize the connection between them. The proposition of a concept map involves two nodes and their linking verbs; a proposition should form a meaningful sentence and represents the smallest unit in the map. The visual presentation of the same is given below:



Pre-Requisites of Concept Map

The pre-requisites of the concept map are described below:

- To draw a concept map, it will be worthwhile to generate a list of the key concepts that need to be included.
- This list must be in a rank order from the most general concept to the most specific.
- This list is referred to as a parking lot, as items are picked from here and moved into the map accordingly.
- The interrelationship between concepts is critical.
- This requires meticulous usage of cross-links and precision in the choice of linking words.

Types of Concept Map

According to Gomes et al. (2011), the organization of concept maps depends on the creativity and innovation of the individual drawing them.

It is vital to understand that concept maps are not rigid, although they are a product of logical thought. The maps are very flexible. There is constant change in concept maps as new knowledge is acquired (Gul and Boman 2006; Gomes et al., 2011).

The nuts and bolts of concept maps remain the same. Those are concepts and connectors. The concept maps have been set up in a variety of different ways. Different types of concept maps have been described in the literature. Let's look at the most common types of concept maps and when you might want to use each one.

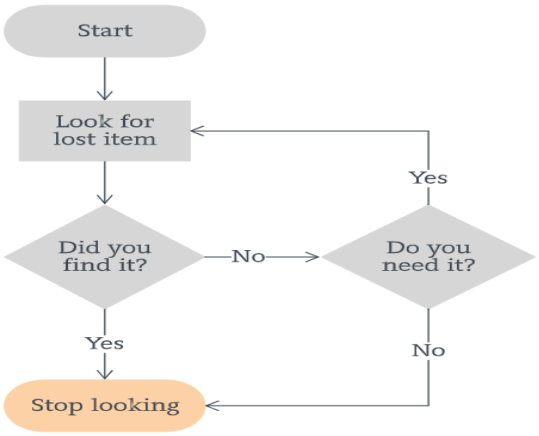
The different types of concept maps are:

- **Conceptual Way Concept Map**
- **Digital Concept Map**
- **Flowchart Concept Map**
- **Hierarchical Design Concept Map**
- **Landscape Structure Concept Map**
- **Mandala Concept Map**
- **Multidirectional Structure (3-D) Concept Map**
- **Spider/ Web Design Concept Map**
- **System Concept Map**

A brief description of each type of concept mentioned above is given below:

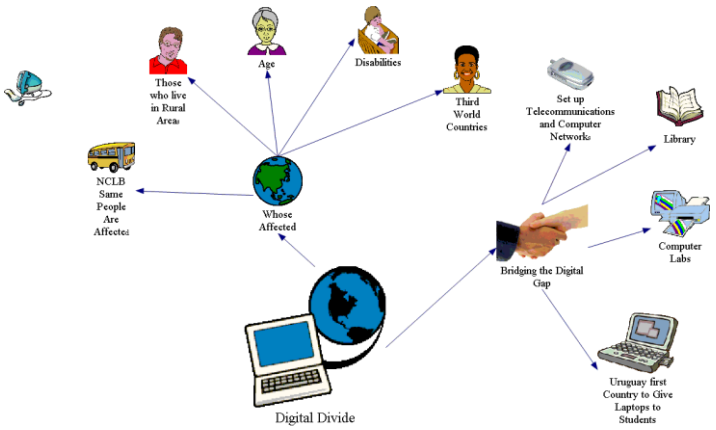
Conceptual way Concept Map

It is very similar to a flowchart, with the possibility of adding new concepts or deleting some.



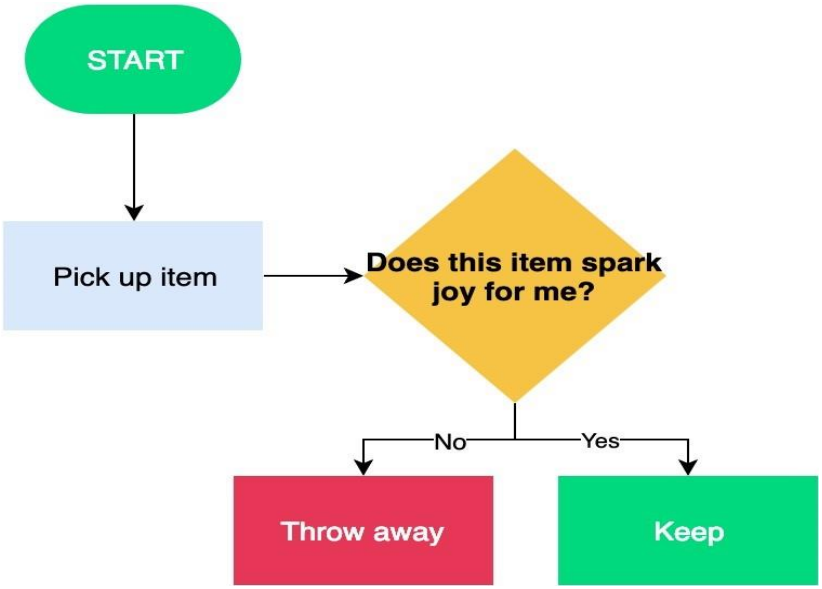
Digital Concept Map

The digital concept map facilitates real-time interaction and feedback between learner and instructor. The digital platform allows learners to include images, photos, and hyperlinks to support the content. It also provides the flexibility to co-create and co-edit concepts very easily. For today's student generation of technophiles, these applications are akin to putty in their hands for creating concept maps, thus, enabling more focus on knowledge construction than on its designing.



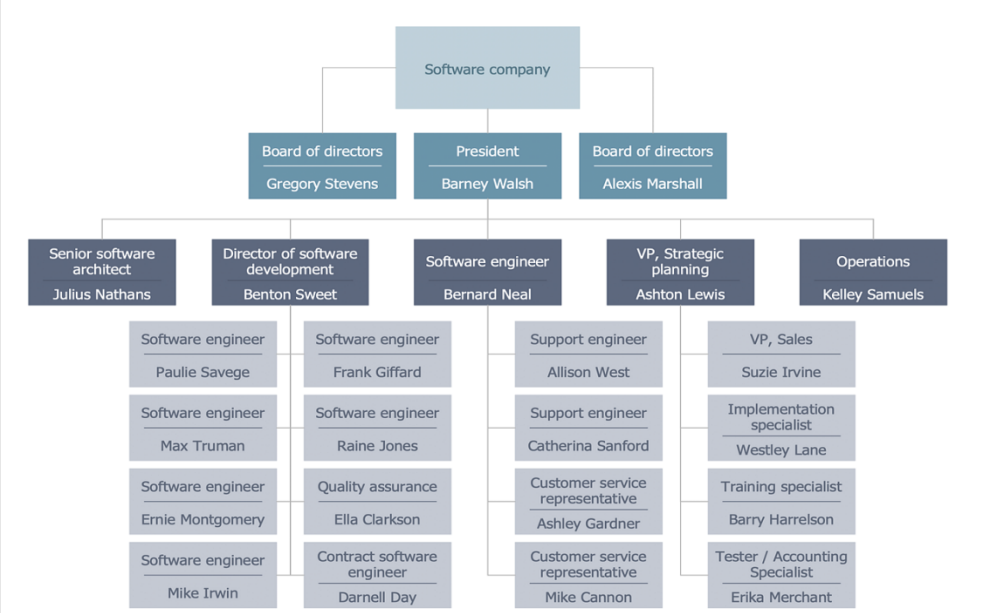
Flowchart Concept Map

A flowchart is also a type of concept map. You have probably seen a flow chart before, but you might not have known that it was a type of concept map. This concept map shows the steps of a process. Typically, the representation of different choices made or actions taken by an individual is through arrows. It is almost like you are choosing your adventure. A flowchart concept map is most useful when an individual needs to understand a process or making a decision.



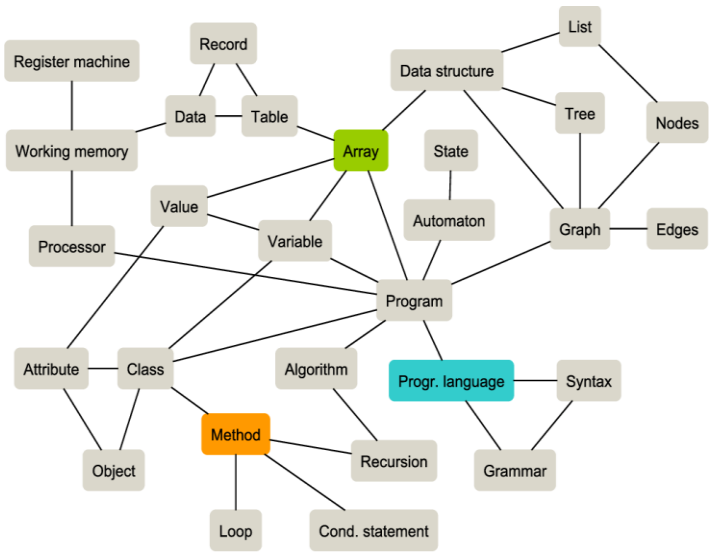
Hierarchical Design Concept Map

A hierarchy map is a type of concept map that shows the order of something. For example, think about a company's organizational chart. That's an example of a hierarchy map, as it depicts the people's roles and their levels of superiority. A hierarchy map is a type of concept map that shows structure and order to understand the elements of a system, the highest and the lowest level elements.



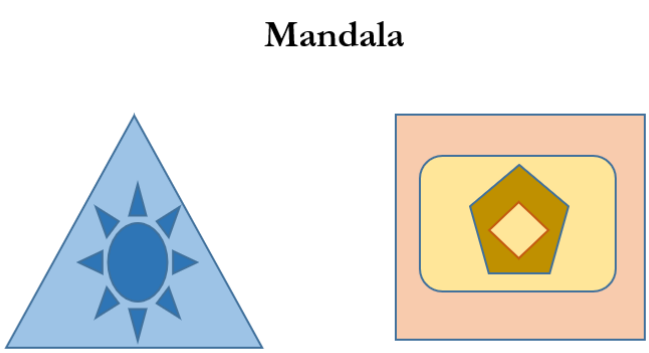
Landscape Structure Concept Map

It displays information in a panoramic manner.



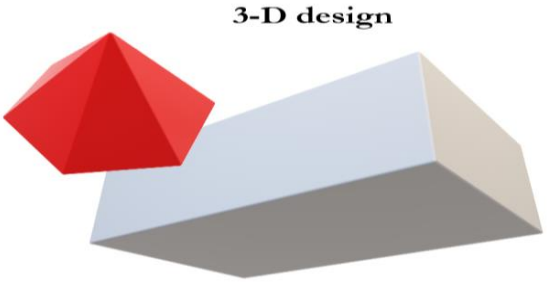
Mandala Concept Map

In the Mandala concept map, the display of information is in geometric forms.



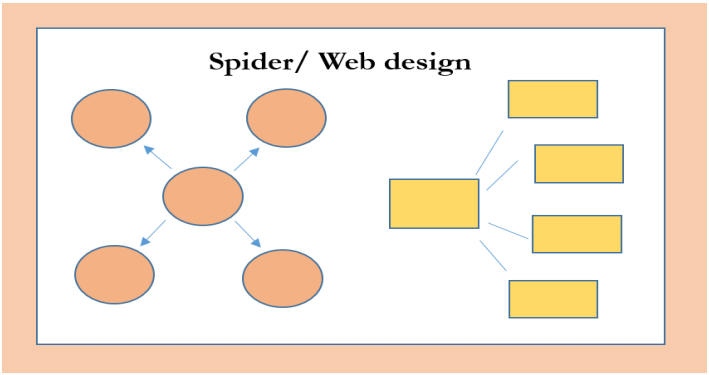
Multidirectional Structure (3-D) Concept Map

It uses depth to represent relationships because we know that there is a challenge to show the depth of the relationship with the help of two-dimensional maps.



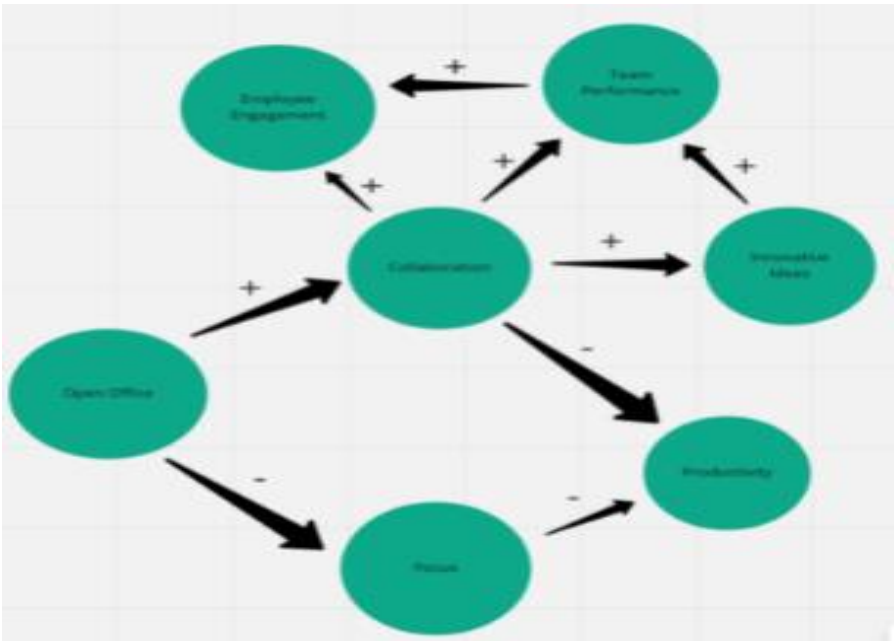
Spider/ Web Design Concept Map

This map gets its name because it looks a lot like a spider web. An individual start with core idea at the center and then branch outwards to subtopics in a radial pattern. The subtopics can branch out into smaller subtopics, and so on. It is most useful for a single idea or theme that you want to build on.



System Concept Map

A system concept map is undoubtedly the most complex of all types of concept maps, as it shows all of the different parts of a concept and how they're interrelated. Connecting lines can include a "+" or a "-" for positive or negative correlations. They often end up looking like webs, but they don't necessarily need to move outward from the center the way a spider map does. It is most useful when we need to understand the inner workings of how a system or team is functioning.



Blueprint of Concept Maps

The purpose, conceptual clarity, and prior planning will determine the design of concept maps. When the main aim of a concept map is learning only, the primary step is a list-building exercise through brainstorming. Following this, the items in the list can be grouped and sub-grouped. These groups and sub-groups facilitate the key concepts generation. Next, an individual can make attempts to establish the link and cross-link between the key concepts. Finally, the individual is supposed to review the concept map to ascertain the faithful reflection of the thought process.

Uses of Concept Map

1. It allows the integration of concepts.
2. It classifies the connection between different concepts.
3. It helps in connecting theory to application.
4. It helps in fostering the problem-solving ability among learners.
5. It helps in formulating new concepts.
6. It stimulates critical thinking among learners.

Concept Map and Test

The use of a concept map as an instrument of evaluation facilitates us in achieving higher levels of cognitive performance. In problem-based learning, a concept map is an effective tool to probe the knowledge structure. The scoring system for a concept map needs further study to address validity and reliability for using a concept map as an assessment tool. We must follow the structural method for scoring the concept map. All the participating learners have proper training in drawing a concept map. After training, each student is supposed to draw a concept map as a part of the assessment.

Generally, we scored the map by using four categories, with the following point assignments for each valid component:

- ✓ 5 points each for nodes representing the concepts
- ✓ 2 points each for concept-link
- ✓ 10 points each for cross-links
- ✓ 5 points each for propositions

Three faculties individually rated the map. The total structural score has obtained from the sum of scores corresponding to each component. A standard structural score has calculated by the sum of structural scores given by the three faculty members. After the examination, a debriefing session has conducted to provide constructive feedback to students.

A concept map drawn by some students reflected on their thinking. Some others became clearer when some students explain their concept map orally. If not anything else, a concept map allowed the students to talk about the topic conceptually, hopefully, in the process, enhancing their confidence and their understanding of the topic. It is a labor-intensive effort on the part of the faculty, but the rewards came in the opportunity it provided to gauge students' understanding and plan appropriate pedagogical interventions.

Concept Map as Learning Tool for Students

It helps the students in doing brainstorming for the generation of different ideas.

It helps the students in the organization of ideas.

It helps the students in the organization of concepts on the map.

It helps the students in relating different concepts.

It helps the students in reviewing their ideas.

Concept Map as an Assessment Tool for Teachers

It facilitates the teacher in the identification of the structure of the selected topic, identification of advanced organizers for meaningful learning of the learners, identification of the pre-existing meaning concerning with the cognitive abilities of the learners, in sequential organization of progressive differentiation and linking, and building links between known and learned facts or content.

14.2 E-Portfolio

Portfolio

Paulson and Paulson (1991) think that a portfolio is a laboratory, where students construct meaning from their accumulated experience.

According to Barret (2000) & Wade (2005), a portfolio is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas. The collection must include student participation in selecting contents, the criteria for selection, the criteria for judging merit, and evidence of student self-reflection.

E-Portfolio

An e-portfolio is a collection of work (evidence) in an electronic format that showcases learning over time.

When an individual thinks about his/her e-Portfolio and the types of evidence that it contains, it is important to think carefully about its purpose and intended audience.

An electronic portfolio (e-portfolio) is a purposeful collection of sample student work, demonstrations, and artifacts that showcase student's learning progression, achievement, and evidence of what students can do. The collection can include essays and papers (text-based), blogs, multimedia (recordings of demonstrations, interviews, presentations, etc.), graphics.

A portfolio is not a placeholder for all or random student work. To ensure that the portfolio process is educational and that it serves as a way to assess student learning outcomes, instructors need to be mindful about which artifacts need to be included for what purposes.

An e-portfolio is a collection of works that reflect an individual's efforts, progress, and accomplishments. An e-portfolio is a public window for showcasing personal achievements.

In the words of Lorenzo and Ittelson (2005), E-portfolios are a valuable learning and assessment tool.

An e-portfolio is a digitized collection of artifacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution.

This collection can be comprised of text-based, graphic, or multimedia elements archived on a Web site or other electronic media such as a CD-ROM or DVD.

An e-portfolio is more than a simple collection. It can also serve as an administrative tool to manage and organize work created with different applications and to control who can see the work.

E-portfolios encourage personal reflection and often involve the exchange of ideas and feedback.

According to Educause Learning Initiative (2003), the electronic portfolio (e-portfolio) can be understood as a collection of authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned overtime on which the person or organization has reflected, and designed for presentation to one or more audiences for a particular rhetorical purpose.

In the words of Tosh/Werdmuller (2004), the e-portfolio is used for final assessment/job-seeking where the emphasis is on the product(s), and then the e-portfolio is used for reflection, deep learning, knowledge growth, and social interaction where the emphasis lies on the process.

They call the second kind of e-portfolio a personal learning landscape.

An e-portfolio is an electronic format for students to record their work, goals, and achievements, reflect on their learning, share their learning, and receive feedback and feedforward.

It enables students to represent information in different formats and, depending on the software, take the information with them between schools.

According to Basken (2008), an e-portfolio is a way to **generate learning** as well as document learning.

Types of E-portfolio

Showcase/Professional E-Portfolios

These e-portfolios are primarily a way to demonstrate (showcase) the highlights of a student's academic career.

Learning E-Portfolios

These portfolios are typically created by a student as part of a course as a way to demonstrate learning and the learning process. These portfolios are often shared with other students to elicit peer feedback. Learning portfolios support the idea of formative feedback as an essential part of the learning process.

Assessment/General Education E-Portfolios

It played a substantive role in the assessment of general education competencies. Using both formative and summative assessments feedback was provided to colleges, departments, and instructors on the quality of evidence students used in their portfolios to demonstrate educational institutions or students' general education competencies.

Types of E-portfolio Based on Digital Format

According to the digital format, electronic portfolios contain both computer-readable and analog formats, digital portfolios are computer-readable, and web folios are accessible over the web.

Types of E-portfolio Based on Function

According to function, there are three main types of portfolios i.e., **working, showcase, and assessment** (Danielson and Abrutyn, 1997).

Working (also known as 'process' or 'learning') **portfolios** contain works in progress, track student learning over time, and maybe temporarily because students move on to either an assessment or showcase portfolio.

Showcase portfolios exhibit the student's best work. They are generally used to demonstrate the level of accomplishment that the student has attained. Students often use showcase portfolios during college applications or for professional employment purposes.

Assessment portfolios are structured and standardized with 'the content of the curriculum determining what students select for their portfolios.

According to Jan van Tartwijk and Erik Driessen, based on function, an e-portfolio can be classified into **five types** as **assessment, showcase, development, reflective, and combination** of four (assessment, showcase, development, and reflective)

Assessment Portfolios

They are usually organized around items such as the candidates' products, evaluations, photographs, and video-recordings

Showcase portfolios

They most often tend to display examples of their best work or evaluations of that work

Development Portfolios

It is an instrument used to keep track of and plan the owner's development.

Reflective Portfolios

Reflections are usually organized around the competencies the owner should master

Combinations

It is the combination of any of the four portfolios i.e, assessment, showcase, development, and reflective.

Components of E-portfolio

The components of an e-portfolio include files of various formats (text, pictures, video, etc.); evidence related to courses taken; programs of study; writing samples (which might include several

drafts to show development and improvement); projects prepared for class or extracurricular activities; evidence of creativity and performance; and evidence of extracurricular or co-curricular activities including examples of leadership, valuations, analysis, and recommendations.

Tools of E-Portfolio

WordPress, b-learning (CANVAS), Edublog, Google Site are the tools of e-portfolio.

E-portfolios - Learning and Assessment Tool

Portfolios are the learning tool for students and an assessment tool for teachers.

Learning Tool for Students

E-portfolio has been used to facilitate, document, and archive student learning. It is a learning tool for students to clarify their educational goals, integrate and solidify learning through reflection, and showcase achievement to potential employers.

It is though that students can start to take control of their learning if they start reflecting on what, how, and how much they have learned.

In the opinion of Banta (2003), as students select their representative work and reflect on what they learned, they start to make sense of their educational experiences in various courses and derive new meaning out of the process.

Assessment and Accreditation Tool for Teachers

E-Portfolio can also function as a tool for the teacher to monitor and evaluate program effectiveness. An e-portfolio can be a way to organize, sample, and assess what students gained out of the program. A portfolio can be helpful for program improvement based on the collective examination of student achievement. With e-portfolios, the teacher gets an idea related to the knowledge acquired by the students, their ability to do something meaningful, and the learning of students through self-reflection. Stages of Development of E-Portfolios

Barrett (2000) suggested the following stages of development of E-Portfolios:

Portfolio Development	Stages of E-Portfolio Development	Multimedia Development
Purpose & Audience	Defining the Portfolio Context & Goals	Decide & Assess
Collect & Interject	The Working Portfolio	Design & Plan
Select, Reflect & Direct	The Reflective Portfolio	Develop
Inspect, Perfect & Connect	The Connected Portfolio	Implement & Evaluate
Respect (Celebrate)	The Presentation Portfolio	Present & Publish

The QESN-RECIT (2005) identified five stages to the portfolio process for print-based or digital portfolios - collection, selection, reflection, evaluation, and celebration.

Purposes of E-portfolio

Tosh suggested the two purposes of the e-Portfolio that includes a) promotion of student-centered learning and reflection, and b) career planning and CV building.

Functions of E-portfolio

The various functions of an e-portfolio are - recognizing learning, recording learning, reflecting on learning, validating learning, presenting learning, planning learning, and assessing learning. A brief description of the various functions of an e-portfolio is as below:

Recognizing Learning

Learning, in a formal environment, is usually recognized when pre-specified products are achieved. E-portfolios can be a means to recognize smaller learning achievements.

Recording Learning

E-portfolios can be containers for recording formal assessment through scanned certificates. Additionally, they can be used to record informal learning activities.

Reflecting on Learning

Reflection is an important part of the learning process. The e-portfolio can be used for private, semi-public, or public reflection of this process.

Validating Learning

Validation in e-portfolios can be a self-validation or a validation from other persons. Validation means to "proof" that learning has happened. This validation can have different forms and can appear in different media.

Presenting Learning

The presentation of learning is important in e-portfolios. This presentation can be used for job applications or for academic applications. Due to the importance of lifelong learning, this presentation can change over time.

Planning Learning

The learning process can be planned with the help of the e-portfolio. The learner can view his/her personal learning history through his/her e-portfolio and can view his/her next steps in personal competency development.

Assessing Learning

Assessing means external control and judgment over the learners' achievements.

Benefits of E-portfolio

1. It involves students in their learning (as a tool for reflection).
2. It allows students to increase their ability in terms of self-evaluation, self-regulation, and metacognitive self-regulation.
3. It teaches students to make choices.
4. It encourages students to understand themselves in a better way and focus on their strengths.
5. It encourages students to reflect on their strengths, needs, errors, interests, challenges, and objectives.
6. It allows students to reflect on their procedures, strategies, and accomplishments. It can improve, correct, and ultimately succeed the students.
7. It promotes feedback during the learning process, particularly during individual conferences.
8. It encourages interaction among students, teachers, and parents.
9. It shows student progress because it tracks performance over time and assesses the competencies developed by students.
10. Physical and social environment management, time management, effort regulation, alternative or authentic assessment are the pedagogical value and potential benefits of an e-portfolio.
11. It enhances knowledge, facilitates communication, and uses a skills assessment source for teachers.

14.3 Podcasting

Concept and Meaning

Podcasting or Vodcasting is internet technology. It can provide users with information materials that they can use at any time, at any place, even when they have no computer connectivity.

Video podcasts are also known as vodcasts.

As we know that, the combination of audio and transcription is known as Podcasts. In Podcasts, audio is not multimedia, so, therefore, no streaming is there. On the other hand, vodcasts are a combination of video and transcription. In vodcasts, there is streaming.

A podcast is a media file (such as audio or video files). It is downloadable from the internet. It can then be played back on a computer or be copied to and played by portable audio or video player like iPod.

The term podcast is both a noun and a verb. As a noun, it refers to the file that is downloaded or streamed. As a verb, it refers to the process or method of delivering the file.

A podcast is a medium for communication. It is a new and enhanced means of expressing information. It can come in audio, video, or enhanced audio formats.

A podcast is typically made up of a series of episodes and is usually not just single audio or video recording.

A podcast is consists of regularly updated and multiple audio or video recordings. It is not compulsory to have an iPod to listen to a podcast. It can play on any computer or portable media device. The best podcast is frequently or regularly updated.

A podcast must have fair to good production values, is most importantly, be interesting, and establish a connection with your intended audience, i.e., students for a teacher.

A key feature that distinguishes a podcast from other media files is that it can be downloaded or streamed. Streaming is the ability for end-users to download the podcast automatically using software that reads RSS or Atom feeds.

Basic Terms

A few basic terms associated with a podcast are mentioned below:

RSS - Really Simple Syndication

Feed - Program/Course Title

Item or Episode - Parts of the Feed

Subscription - Automatically Delivered

Atom feed **is** used as an **RSS** alternative.

After getting a subscription to a podcast by a user, there is no need to check out the files of their interest because they are automatically received or download by using an aggregator. After that, an individual user can listen or watch previously recorded media files at their convenience. Students can create podcasts to demonstrate their understanding or for the final project (especially valuable in foreign language classes).

Types of Podcasts

There are five types of podcasts:

- **Enhanced Podcasts**
- **Scripted Podcast**
- **Podcast Novels**
- **Video Podcasts**
- **Live Podcasts**

All of the above mentioned five types of podcasts have described below:

Enhanced Podcasts

An enhanced podcast includes links to images, that are, synchronized with the podcast, turning it into a narrated.

Scripted Podcast

A scripted podcast, also known as a fiction podcast or narrative podcast, is similar to a radio drama but is in podcast form. They deliver a fictional story, that is, told over multiple episodes and seasons by using different voice actors, dialogue, sound effects, and music to enrich the story.

A Scripted podcast involves several well-known actors. These famous actors have participated as voice talents in a scripted podcast. The content producers like DC Comics, Marvel, Netflix, and Spotify are involved in a scripted podcast.

Science-fiction and horror are popular scripted podcasts. These popular scripted podcasts cover a full range of literary genres from drama to fantasy, romance, comedy, etc.

Few examples of scripted podcasts are - The Bright Sessions, Homecoming, and Wolverine: The Long Night.

Podcast Novels

A podcast novel, also known as a serialized audiobook or podcast audiobook, is a literary form. It combines the concepts of a podcast and an audiobook. Like a traditional novel, a podcast novel is a work of literary fiction. However, it is recorded into episodes. After recording, the podcast novel is delivered online for some time. The episodes may be delivered automatically via RSS or through a website, blog, or other syndication methods. The episodes can be released on a regular schedule. For example, once a week, or irregularly as each episode is completed.

Similarly, as audiobooks, some podcast novels are elaborately narrated with sound effects and separate voice actors for each character, similar to a radio play or scripted podcast. But many have a single narrator and few or no sound effects.

Some podcast novelists give away a free podcast version of their book as a form of promotion. On occasion, such novelists have secured publishing contracts to have their novels printed.

Podcast novelists have commented that podcasting their novels lets them build audiences even if they cannot get a publisher to buy their books.

These audiences then make it easier to secure a printing deal with a publisher at a later date. These podcast novelists also claim the exposure that releasing a free podcast gains them makes up that they are giving away their work for free.

Video podcast

A video podcast or vodcast is a podcast that contains video content. The web television series are usually distributed as video podcasts.

Dead End Days, a serialized dark comedy about zombies released from 31 October 2003 through 2004, is commonly believed to be the first video podcast. NASA created a video podcast on the Crab Nebula.

Live Podcasts

Many podcasts are recorded either in total or for specific episodes in front of a live audience. These podcasts are known as live podcasts. Ticket sales allow the podcasters an additional way of monetizing. Some podcasts create specific live shows to tour those are not essentially included on the podcast feed.

Events including the London Podcast Festival, SF Sketchfest, and others regularly give a platform for podcasters to perform live to audiences.

Educational Use of Podcast

- Full Lectures
- Study Aids

Full lectures

There are several benefits to capturing and publishing full lectures. A research study conducted at the University of South Australia reveals that students who did not speak English as their native language used podcasts more frequently than their English-speaking classmates.

They appreciated being able to listen to lectures and pause them. They needed to comprehend the material or to look up the meaning of certain words.

Without this technology, there are chances that the students lost the content of lectures.

The reason for the same is that due to a professor who speaks too quickly for the student to understand and from the use of an uncommon word.

Study Aids

With many unique benefits, projects led by students can take the form of study aids for their classmates, presentations of their final papers, or weekly teasers of information for the class to stimulate in-class discussions.

Podcasts for Students

According to Robin H. Kay, there are five benefits concerning the use of video podcasts for students.

Students can control the pace of their studies.

There is an increase in the motivation of students.

There is improvement in study habits of students.

There is a positive impact on the testing skills of students.

It does not reduce the class attendance of students.

Podcasts for Teachers

Podcasting can be a tool for teachers or administrators to communicate with parents and the community about curriculum plans and content, student assignments, and other information.

Teachers or instructors podcast lectures for students. Therefore, it can help those students who missed their classes or in distance delivery of a course. The students can listen to or view these as a review of the class or lecture. Here, the medium for students to obtain information is a podcast. Also, guest speakers who cannot come to face-to-face class can be interviewed (in person or via telephone or VOIP service). What to do with these interviews? These interviews, later on, share as a podcast.

Teachers can subscribe to podcasts on an extensive range of topics (such as through the iTunes podcasting library). Increasingly articles from professional journals are available as podcasts. News organizations provide podcasts of news stories. TV stations are beginning to podcast TV shows (for purchase by viewers).

Advantages of Podcasting

Automatic Subscription

The significant advantage of a podcast is its automatic subscription feature. It ensures that the subscribers receive the latest files without visiting each site that hosts media files to check to see if there have been updates.

Multiple Sources

It is helpful when users wish to keep up with multiple sources. e.g. (1) Students do not have to check each of their course websites to see if there are any new podcast files; instead, using an aggregator, all podcasts from all classes will automatically be delivered to their computers. (2) Students or the users can keep up to date with the latest podcasts from news and professional organizations.

Flexible Learning Opportunities

The user can listen to or watch a podcast at any time. It is not necessary for the user to use the computer for playback. The user can review audio files while driving, walking, biking, etc.

Review Classes

It is valuable to students to review classes. This is especially an advantage for students who may have had difficulty understanding what was said during the live class. For example, speakers of other languages, students with disabilities, etc.

If transcripts of the podcasts are also made available, students can read along and listen at the same time. It is essential that the transcripts must be provided to students with special needs who are unable to listen to the audio files.

Modality

Students learn through more than one modality i.e., listen to audio files or watch videos on content as well as read course materials.

Easy and Inexpensive

Audio files can comfortably and inexpensively be created and uploaded to the course website/blog/wiki.

Increases Access

It increases access to classes, lectures, talks (educational, professional, and personal) by making these available for download to people who could not attend the session in person. It is an advantage to college students who miss lectures.

Flexibility and Mobility

It extends the learning experience for flexibility and mobility by meeting students where they are (on their iPod or another mp3 player, on the computer outside of class). It can increase engagement and deepen student learning. It is also beneficial for distance education classes.

Unique Needs

It provides access to unique needs. Podcasting lectures allow them to be available for review to assist students with different learning styles, international students with language barriers, and some types of learning disabilities.

Course Content

It increases the understanding of course content. Students have the opportunity to review and revisit specific sections of lectures that they struggled with in class, which may lead to better learning of course materials.

Absorption and Engagement

It increases absorption and engagement in classroom activities. It can liberate from the need for an intense record of notes as the lecturer speaks. Students are free to listen more intently and participate actively in class, with the option to review the podcast for detailed notes later.

Accessibility

It provides access to those with valid reasons for absences. For students, who are absent due to genuine reasons, the availability of podcasts ensures they can take their notes from the lecture, which may be more accurate than those they borrow from another student.

Supplemental Audio Content

It provides the ability to have lectures or supplemental audio content. Open copyright audio interviews and content can easily be appended to a lecture podcast or made into a separate episode. Likewise, phone or in-person interviews with guest lecturers can be recorded and made available to students in podcast format.

Disadvantages of Podcasting

1. There are issues related to the accessibility of the material.
2. It is time-consuming & costly to make the files of transcripts and ensure accessibility of the same.
3. Large file size (especially of video files) requires a broadband connection, thus making these files difficult or even impossible, sometimes, for users to access if they have a slow dial-up connection.
4. The correct format of a file which compatible with all mp3 players. Therefore, the creators need to ensure that the file format is appropriate for all mp3 players and not just on iPods.
5. The students with special needs, who are unable to listen, have transcripts with them.

14.4 Vlog

Concept and Meaning

The vlog stands for a video blog or video log. It is very interactive. It refers to a type of blog where most or all of the content is in a video format**.**

A video blog or video log, sometimes shortened to vlog, is a form of blog for which the medium is video. Vlog entries often combine embedded video (or a video link) with supporting text, images, and other metadata.

Here, entries can be recorded in one take or cut into multiple parts. The vlog category is popular on the video-sharing platform i.e. YouTube.

Vlogging has spawned a large community on social media and becoming one of the most popular forms of digital entertainment in recent years. Along with entertainment, it is popularly believed that vlogs can deliver deep context through imagery as opposed to written blogs.

Video logs (vlogs) also often take advantage of web syndication to allow for the distribution of video over the internet using either the RSS or Atom syndication formats, for automatic aggregation and playback on mobile devices and personal computers like a video podcast.

According to Liorl, a vlog/video is more dynamic and if used wisely, it can result in a more lasting impact than blog posts written in plain text.

Types of Vlog

The main five types of Vlogs are as follows:

- **Personal Vlogs**
- **Live Broadcasting Vlogs**
- **Informative Vlogs**
- **Bereavement Vlogs**
- **Conversational Vlogs**

Each of the above types of Vlog is discussed below:

Personal Vlogs

The personal vlogs is an online video that records an individual to deliver information that they intend to introduce to people. The audience is not as varied as one's from a corporation or organization.

Live broadcasting Vlogs

YouTube announced a live broadcasting feature called YouTube Live in 2008 is known as live broadcasting vlogs. This feature was also established by other social platforms such as Instagram and Facebook.

Informative Vlogs

Informative Vlogs is a video Blog that is designed to educate the viewer about a particular subject.

Bereavement Vlogs

Bereavement Vlogs is a video Blog that is designed to express feelings of loss, grief, and mourning.

Conversational Vlogs

Conversational Vlogs is a video Blog designed to be formal and create a civil discussion.

Uses of Vlog

1. Vlogging can help people to share their ideas that might be difficult to share through text or print. For example, anything can be understood better when you are given a visual presentation or demonstration and if every individual learner can see and hear the directions. As a result, the learning is better. The same can be said for some ideas that a teacher may need to give to their students. The teacher must give due importance to any innovative idea shared by students.

2. Students learn best when teachers vary their instructional delivery and teach using as many senses as possible to give the student the ability to master the information that they are being given in a way that is most tangible for them.
3. For students who are visual learners, vlogging can be beneficial for them to relate and comprehend the information.
4. Teachers can also vlog class lectures for students to refer to as needed. Teachers could also post additional information about a topic allowing it to be differentiated depending on student skills.
5. Vlogging gives people the opportunity to share their ideas with a wide audience. Students can benefit from vlogs from other professionals or their peers, they can also be the ones to upload vlogs to share with others. This gives students the ability to collaborate, but also individuals around the world.
6. Many students may feel more comfortable sharing thoughts and ideas through vlogging because they do not see all eyes watching them answer the question.
7. Vlogging allows students to share ideas and demonstrate knowledge without the confidence of text. Not all students are great writers and allowing students to use a vlog for a project can give that student the ability to demonstrate what they know and the confidence to do it in a way that they feel the most comfortable.
8. Students can use a vlog to make a portfolio to showcase their work and showcase their work over a specific time interval/period. This portfolio can allow students and their parents to see the performance or progress that they have made within a specific unit or grade. The portfolio can showcase their best work or specific assignments.
9. Some students may find using vlogs familiar because it is the same media source that they use for recreational purposes. Some students may already watch videos on YouTube and would feel comfortable using vlogs for classroom use i.e., both to upload or download videos.
10. Vlogs allow students to learn information at a time and place that is convenient for them. Students may feel less pressure when they are allowed to think about a topic and listen to a lesson as many times as needed without the pressure from a class to move on. Students may focus better a different time of the day or in a different environment than in a school setting.

Advantages

1. The vlog is very popular and current/new/latest.
2. It has better conversion rates**.**
3. It has more personal interaction with readers.
4. It's free to make vlog. An individual can use YouTube, Windows Movie Maker, Vimeo, and Animoto.
5. It encourages more hits to an individual website.
6. Some people would rather watch a video instead of reading a regular blog.

Disadvantages

1. Server space can be a problem with self-hosted websites.
2. The creation of the videos can be time-consuming**.** Here, time-consuming means an individual has to find a theme for the video, prepare a script, choose a proper setting, find a web host, and choose a format, video platform, and player. Therefore, it includes a lot of work.
3. The cost of making the video (camera, stand, software, sound) is also high. Therefore, it is not economical in terms of time and money.
4. There are problems related to the potential slow loading time**.**
5. There are also bandwidth issues if an individual has a large number of blog followers.
6. Due to a lack of patience, some individuals don't want to wait for more time to see a video. They would prefer to read it and think that it wouldn't take that much time.
7. Though vlog or video is becoming a more modern way of blogging, still vlog seems less formal and professional.

14.5 Talk Show Performance

Concept and Meaning

A talk show is a TV or radio programming genre structured around the act of spontaneous conversation.

In a talk show, one person (or group of people or guests) discusses various topics selected by a talk show host.

This discussion can be in the form of an interview or a simple conversation about important social, political, or religious issues and events.

Similarly, in educational setup, talk show performance means discussion on topics from the curriculum by students. Here, the teacher controls the whole talk show performance and guides the students. The host of the talk show performance, here, is the teacher.

A talk show performance is an authentic version of the more traditional in-class presentation. It directs students to take on and embody their learning for an interactive, live, or record discussion. It can be character-based.

Therefore, the students taking on and acting as actors in their discipline would talk about the issues, answer various questions, and conduct analyses (like analysis of diagrams, etc.). It can be self-based. Self-based, here, means students perform as themselves, presenting the materials and answering questions based on their developing knowledge.

Procedure

Group Formation

The step is to form a group of at least 4 or 5 students.

Topic Selection

After the formation of the group, the group members select a topic from the lessons.

Research on Topic

After the topic selection, the group members are supposed to research the selected topic.

Roles of Group Members

Here, in this stage, deciding and assigning the roles to each group member. While assigning the roles to members, it must ensure that there is one host, two special guests, and one or two specialists.

Work on the Script

After the finalization of roles of members of the group, the group members writing the script for the talk show performance.

Feedback on the Script

Group members seek feedback on the script from peer members and the teacher after the discussion.

Write Script for the Interview

After writing the general script, the group is supposed to write the script for the interview.

Record the Interviews

Based on the script for the interview, the group starts recording the interviews for the talk show performance.

Finish Draft of the Script

After correcting the script based on the suggestion, the group has finalized the script's draft.

Finalization of the Script

Here, the group members finalized the script under the guidance of the teacher.

Prepare the Talk Show Performance

The group members prepare the talk show keeping in mind all considerations and incorporate valuable suggestions given by the peers and teacher.

Practice the Talk Show Performance

The group members do the practice of the talk show performance under the supervision of the host (teacher).

Perform Talk Show

At last, the students give their final presentation of the talk show performance for the final evaluation of their work.

14.6 The Minute Paper

Concept

The minute paper is a very commonly used classroom assessment technique. It does take about a minute. Usually, it is used at the end of class or the end of the discussion of a topic.

It is also known as the One-Minute Paper and the Half-Sheet Response because it provides a quick, simple and easy way to collect written feedback on student learning. To use the minute paper, a teacher stops class/lecture two or three minutes early and asks students to respond briefly to some variations on the following two questions:

1. What was the most important thing you learned during this class?

2. What important question remains unanswered during this class?

Students then write their responses on index cards or half-sheets of paper and hand over those sheets to the teacher after writing their answers.

Meaning

The minute paper is designed in such a way that it takes a minute to complete. It is generally or commonly used at the end of class to diagnose students' understanding of key concepts or topics. The minute paper can also be used throughout the lecture.

Typically, the minute paper will ask the students to identify what they found most useful and most challenging. The minute paper helps to identify if further support is needed.

Before or at the start of the next class, the results of the student responses can be discussed as group feedback, and strategies can be offered for remediation if needed.

Tools

A paper, pens or pencils, digital tools, blog, padlet, and piazza are the general tools used for the minute paper.

Purpose

The main purpose of the minute paper is to get answers to the following questions by asking students:

What did they see as the most significant things they are learning?

What their major questions are?

Teachers can quickly check how well those students are learning what they are teaching. That feedback can help teachers to decide whether any mid-course corrections or changes are needed and, if so, what kinds of instructional adjustments will be required to make.

The minute paper helps the students for getting the teacher's feedback on their minute papers. This feedback helps students learn how experts in a given discipline distinguish the major points from the details.

The minute paper also ensures that students' questions will be raised, and in many cases answered, in time to facilitate further learning.

Despite its simplicity, the minute paper assesses more than mere recall. To select the most significant information, learners must first evaluate what they recall.

Then, students must self-assess by asking themselves how well they understand what they have just heard or studied.

Procedure

1. Decide first what you (teacher) want to focus on and, as a consequence, when to administer the minute paper. If you (teacher) want to focus on students' understanding of a lecture, the last few minutes of class may be the best time. If your (teacher) focus is on a prior homework assignment, however, the first few minutes may be more appropriate.
2. Using the two basic questions from the description as starting points, write minute paper prompts that fit your course and students. Try out your minute paper on a colleague or teaching assistant before using it in class.
3. Plan to set aside five to ten minutes of your next class to use the technique, as well as time later to discuss the results.
4. Before class, write one or, at the most, two-minute paper questions on the black or whiteboard or prepare a slide on your presentation deck.
5. At a convenient time, hand out index cards or half-sheets of scrap paper.
6. Unless there is a very good reason to know who wrote what and direct students to leave their names off the papers or cards.
7. Let the students know how much time they will have (two to five minutes per question is usually enough), what kinds of answers you want (words, phrases, or short sentences), and when they can expect your feedback.

Uses

1. It helps in identifying student misconceptions early instead of at the end of the semester.
2. It provides an opportunity for teachers to deliver additional resources or support in a timely way.
3. It helps the students to know that teachers are interested in investing in their learning needs.
4. It provides a summary of responses as feedback and discusses this with the class.
5. It helps the teacher in getting the reflection of students on the taught subject matter.
6. With the help of a minute paper, student responses to inform the teachers, what needs to revise in the next class or lecture, or session?
7. It sets an online activity like using a blog or discussion tool for students to answer separately. What they (students) found most useful and challenging? It encourages students to comment on each other's posts.

Advantages

1. It provides a manageable amount of timely.
2. It provides useful feedback for a minimal investment of time and energy.
3. It provides immediate mid-course feedback to instructors and allows quick response to students.
4. It is significant in college classrooms, where many issues and questions have limited life spans and time is always in short supply.
5. The responses, specifically in a very large class, can be read, tabulated, and analyzed quickly and with limited effort**.**
6. By using minute paper, teachers demonstrate respect for and interest in student feedback.
7. Therefore, encouraging active listening and engagement**,** that is often lacking in large classes.
8. Feedback on the Minute Paper allows individual students to compare their responses to that of the whole class.
9. It provides rapid feedback on whether the teacher's main idea and what the students perceived as the main idea is the same.
10. By asking students to add a question at the end, this assessment becomes an integrative task.
11. Students must first organize their thinking to rank the major points and then decide upon a significant question.
12. Sometimes, instead of asking for the main point, a teacher may wish to probe for the most disturbing **or** most surprising item. It is thus a very adaptable tool.

Disadvantages

1. Students will begin to view the technique as a gimmick or a pro forma exercise in polling if minute Papers are overused or poorly used.
2. It is more difficult than it may seem to prepare questions that can be immediately as well as clearly comprehended and quickly answered.

Suggestions

1. The minute papers are probably most useful in lecture or lecture cum discussion courses, even though, the technique is comfortable and easily adapted to other situations or settings.
2. The minute papers work well at the beginning and the end of class sessions, serving either as a warm-up or wrap-up activities.
3. Like other simple techniques in this section, minute papers can be used frequently in courses that regularly present students with a great deal of new information.
4. As we know that it is quick to administer and easy to analyze, therefore, the Minute paper is well suited for use in large classes.
5. The minute paper can also be used to assess students' learning or what students have learned from a lab session, study-group meeting, field trip, homework assignment, videotape, etc.

14.7 Artificial Intelligence

Definition

Artificial intelligence may be defined as the ability of computer systems to perform tasks and activities of human beings in terms of human intelligence.

Artificial Intelligence may be defined as the capability of a machine to imitate intelligent human behavior.

Artificial Intelligence digitized and automated the processes. It makes our digital and automated processes smarter. It also enhances the reliability quotient of any technology. So, what we used to see in Science-Fiction movies is now a reality.

Categories of Artificial Intelligence

The important categories of artificial intelligence are -

- **Weak v/s Strong Artificial Intelligence**
- **Narrow v/s General Artificial Intelligence**
- **Super Intelligence**

The above-mentioned categories of artificial intelligence are discussed below:

Weak Artificial Intelligence

Weak artificial intelligence describes simulated thinking. It is a system that appears to behave intelligently but doesn't have any type of consciousness about what it's doing. For example, a chatbot might appear to hold a natural conversation, but it has no sense of who it is or why it's talking to you.

Strong Artificial Intelligence

Strong artificial intelligence describes actual thinking. That is, behaving intelligently, thinking as a human does, with a conscious, subjective mind.

For example, in Humans Conversation, when two humans converse, they most likely know exactly who they are, what they're doing, and why.

Narrow Artificial Intelligence

Narrow artificial intelligence describes an artificial intelligence that is limited to a single task or a set number of tasks. For example, the limitation of a chess-playing computer is that it is playing chess only. It wouldn't have been able to win a game other than chess or of tic-tac-toe or even know how to play.

General Artificial Intelligence

General artificial intelligence describes an artificial intelligence that can be used to complete a wide range of tasks in a wide range of environments. As such, it is much closer to human intelligence.

Super Intelligence

The term super intelligence is often used to refer to general and strong artificial intelligence at the point at which it surpasses human intelligence if it ever does.

Applications of Artificial Intelligence

The various applications of artificial intelligence are discussed below:

Educational Sector

Artificial intelligence has now become a part of our day-to-today lives. We are surrounded by this technology from automatic parking systems, smart sensors for taking spectacular photos, and personal assistance.

Among all the sectors, the educational sector also has been on the way of revamping itself with the help of technology which has and is making the task of the teachers and the students at ease.

Academic World

The academic world is becoming more convenient and personalized. The credit goes to numerous applications of artificial intelligence in the field of education.

Smart Devices and Computers

It has changed the way people learn since educational materials are becoming accessible to all through smart devices and computers. Today, students don't need to attend physical classes to study as long as they have computers and an internet connection.

Automation of Administrative Tasks

Artificial intelligence is also allowing the automation of administrative tasks, allowing institutions to minimize the time required to complete difficult tasks so that educators can spend more time with students.

Visual and Dynamic Learning

In the future, visual and dynamic learning channels outside the classroom will become not only more prevalent but capable of supporting a range of learning styles, all while addressing common questions and concerns students have that cannot be readily addressed by teachers, TAs, tutors, or parents.

Reliability Quotient

It also enhances the reliability quotient of any technology.

Uses

The significant uses of artificial intelligence are discussed below:

Personalized Education

As we have already learned that there is a shortage of teachers or a huge dearth of teachers in India. Moreover, the standard of curriculum and teaching has not improved at a faster rate.

Many articles in the mainstream media have repeatedly highlighted that our students are denied of good quality education. Artificial intelligence can be a solution to this problem.

The most important reason is that artificial intelligence systems can adapt to Individual student learning and grasping abilities. It can also find out his or her strengths and weaknesses.

How much ever we tried, a single teacher per classroom is not enough to fulfill the needs of all students in a large class.

In this scenario, enabling students with artificial intelligence systems in schools and classrooms or at their homes might be the solution to solve the problem of low quality and inaccessibility at one stroke.

Assistance to Teachers

Teachers have to handle multiple responsibilities such as evaluation, grading, paper setting, creating mark sheets, attendance, and tracking the performance of every student.

If these tasks are made easy for them, then they would focus more on course development, teaching quality, and skill development.

Artificial intelligence systems can assist teachers in all these tasks, making these tasks not only automated but also intelligent. With artificial intelligence systems in place, it will be easier for teachers to focus on students rather than ordinary administrative tasks.

Accessible and Inclusive Education

Good or Visionary Education Policy of a country has always promoted the policy of Education for all. In a country, therefore, all young people deserve a good education, skills, and jobs.

Artificial intelligence education can become more accessible and inclusive at the same time. Various tutoring programs, learning applications with the skill-based curriculum are being developed across the globe.

These artificial intelligence-enabled systems will bring global classrooms to or at the fingertips of an individual. It will not only empower students but also teachers in upgrading themselves with current trends.

Artificial intelligence systems could be a boon for rural education. Students living in the most remote parts of a country or world would be able to learn the way it is learned in an urban setting.

Remote Proctoring

Remote Proctoring is a new technology that can help to simplify the exam invigilation process.

Students can appear for the exam from any location classroom or home. The system can invigilate such exams remotely using remote Proctoring.

It uses a web camera attached to a computer system to authorize remote students.

Many education institutes, corporates, universities have started using this technology to simplify the examination process with artificial intelligence of Remote Proctoring.

Physical Answer sheet evaluation is one of the pain areas for university or education institutions. Many entities are moving towards an onscreen evaluation system as it is intelligent and auto-calculates the score.

It also ensures that the examiner has truly verified all pages of the answer sheet. It also saves the logistical cost of handling physical answer sheets.

It can help you to automate result processing.

14.8 Assessment Rubrics

An assessment rubric is a coherent set of criteria for students' work that includes descriptions of levels of performance quality on the criteria. The genius of assessment rubrics is that they are descriptive and not evaluative.

An assessment rubric is an explicit set of criteria used for assessing a particular type of work or performance and provides more details than a single grade or mark. Rubrics, therefore, will help an individual assessment or grade more objectively.

The opinions of Stevens and Levi (2005) about the assessment rubrics are described below:

According to them, students ever asked the following two questions to a teacher:

Why did you assess or grade me that way?

You never told us that we would be assessed or graded on this or that aspect.

As an assessment or a grading tool, assessment rubrics can address the following issues related to assessment:

a) they increase objectivity.
b) they reduce subjectivity and reduce assessment or grading time;
c) they convey timely feedback to students and

d) they improve students' ability to include the required elements of an assignment.

Assessment or grading rubrics can be used to assess a range of activities in any subject area

An assessment rubric is a scoring guide used to evaluate the quality of students' constructed responses.

In simple words, it is a set of criteria for assessing or grading assignments.

Assessment rubrics usually contain evaluative criteria, (for each criteria describing levels of quality) quality definitions for those criteria at particular levels of achievement and a scoring strategy.

They are often presented in table format and can be used by teachers when marking, and by students when planning their work.

Andrade et al state that assessment rubrics is a learning and assessment tool that articulates the expectations for assignments and performance tasks by listing criteria, and each criterion, describing levels of quality (Andrade, 2000; Arter & Chappuis, 2007; Stiggins, 2001).

Features of Assessment Rubrics

Stevens & Levi (2013) identified the following four essential features of assessment rubrics:

a) a task description **or** a descriptive title of the task students are expected to produce or perform.
b) a scale (and scoring) that describes the level of mastery (e.g., exceed expectation, meets expectation, doesn't meet expectation);
c) components/dimensions students are to attend to in completing the assignment/tasks (e.g., types of skills, knowledge, etc.); and
d) description of the performance quality (performance descriptor) of the components/dimensions at each level of mastery.

A description of performance quality gives students a clear idea about what must be done to demonstrate a certain level of mastery, understanding, or proficiency (i.e., "excellent" does A, B, and C; "fair" does only A and B or A and C, "poor" does only A or B or C).

Assessment rubrics can be used for any assignment in a course, or for any way in which you ask students to demonstrate what they've learned. They can also be used to facilitate self and peer-reviews of student work.

Bernie Dodge and Nancy Pickett identified several common features of scoring assessment rubrics which are as follows:

They focus on measuring a stated objective (performance, behavior, or quality).

They use a range to rate performance.

They contain specific performance characteristics arranged in levels indicating either the developmental sophistication of the strategy used or the degree to which a standard has been met.

Purpose of Assessment Rubrics

1. Like any other evaluation tool, assessment rubrics are useful for certain purposes and not for others. The main purpose of assessment rubrics is to assess performances.
2. For some performances, the teacher observes the student in the process of doing something, like using an electric drill or discussing an issue.
3. For other performances, the teacher observes the product that is the result of the student's work, like a finished bookshelf or a written report.

Elements of Assessment Rubrics

Typically designed as a grid-type structure, an assessment or grading rubrics includes criteria, levels of performance, scores, and descriptors which become unique assessment tools for any given assignment.

Types of Assessment Rubrics

The major four types of assessment rubrics are enlisted below:

- **Analytic Rubric or Assessment Rubric**
- **Holistic Rubric or Assessment Rubric**

- **General Rubric or Assessment Rubric**
- **Task-specific Rubric or Assessment Rubric**

Now, each of the above-mentioned types of assessment rubrics is discussed one by one below:

Analytic Rubric or Assessment Rubric

In the analytic rubric, each criterion is assessed separately, using different descriptive ratings, and receives a separate score. The analytical assessment rubric takes more time to score but provides more detailed feedback.

It is useful in judging complex performances involving several significant. It provides more specific information or feedback to students.

Holistic Rubric or Assessment Rubric

In the holistic rubric, all criteria are assessed as a single score. Holistic rubrics are good for evaluating overall characteristics or performance on a task. Because only a single or one score is given, holistic rubrics tend to be easier to score.

However, holistic assessment rubrics do not provide detailed information on student performance for each criterion.

In a holistic rubric, the levels of performance are treated as a whole.

It is useful for simple tasks and performances such as reading fluency or response to an essay question

It is useful in getting a quick snapshot of overall quality or achievement

It is useful in judging the impact of a product or performance

General Rubric or Assessment Rubric

A generic or general assessment rubric contains criteria that are general across tasks and can be used for similar tasks or performances. The criteria are assessed separately, as in an analytical rubric.

It is useful when students will not all be doing the same task.

It is useful when students have a choice as to what evidence will be chosen to show competence on a particular skill or product.

It is useful when teachers are trying to judge consistently in different course sections.

Task-specific Rubric or Assessment Rubric

According to Arter and McTighe (2001), a task-specific rubric assesses a specific task. The unique criteria are assessed separately. However, it may not be possible to account for each criterion involved in a particular task which could overlook a student's unique solution.

It's easier and faster to get consistent scoring through the task-specific rubric.

It is useful in large-scale and high-stakes contexts, such as state-level accountability assessments.

It is useful when the teacher wants to know whether students know particular facts, equations, methods, or procedures.

Uses of Assessment Rubric

An assessment rubric can be used in individual assessment within the course, or a project or capstone project.

It can be used when multiple evaluators are evaluating the assessment to get focus on the contributing attributes for the evaluation.

An assessment rubric is ideally suited for project assessment since each component of the project has a corresponding section on the assessment rubric that specifies criteria for quality of work.

It is useful in providing feedback to students on their work and the students can revise the work based on that feedback.

As students are working on their assignments, they can be stopped occasionally to do a self-assessment and then give and receive evaluations from their peers. The revisions of the assignments should be based on the feedback students receive.

It can be used for the teacher assessment, which means using the same scoring rubric the students used to assess their work.

The following are the uses of the assessment rubrics specifically for teachers:

1. It helps in providing the students with feedback that is clear, directed, and focused on ways to improve learning.
2. It helps in throwing light on assignment expectations so students can **focus** on the work instead of guessing - what the teacher wants?
3. With the help of an assessment rubric, the teacher must adapt his or her approach to teaching aspects of a course based on thematic gaps in student learning that are easily identified by reviewing the assessment rubric across a class.
4. It helps to develop consistency in how teachers evaluate student learning across students and throughout a class.
5. It reduces the time spent on grading.
6. It increases the time spent on teaching.

The following are the uses of the assessment rubrics specifically for students:

1. Students can focus their efforts on completing assignments in line with clearly set expectations.
2. Students can self and peer-reflect on their learning, making informed changes to achieve the desired learning level.

Advantages of Assessment Rubrics

The advantages of the different types of assessment rubrics are given below:

Advantages of Analytic Rubric

1. It gives diagnostic information to teachers.
2. It gives formative feedback to students.
3. It is easier to link to instruction than a holistic rubric.
4. It is good for formative assessment; and adaptable for summative assessment.
5. If you need an overall score for grading, you can combine the scores.

Advantages of Holistic Rubric

1. The scoring is faster in holistic rubrics than with analytic rubrics.
2. It requires less time to achieve inter-rater reliability.
3. It is good for summative assessment.

Advantages of General Assessment Rubric

1. It can share with students, explicitly linking assessment and instruction.
2. It reuses the same rubrics with several tasks or assignments.
3. It supports learning by helping students see good work as bigger than one task.
4. It supports student self-evaluation.
5. Students can help to construct a general rubric.

Advantages of Task-Specific Assessment Rubric

1. Task-specific rubric makes scoring easier.
2. Task-specific rubric requires less time to achieve inter-rater reliability.

Disadvantages of Assessment Rubrics

The disadvantages of the different types of assessment rubrics are given below:

Disadvantages of Analytic Rubric

1. It is time-consuming. It takes more time to score as compared to the holistic rubric.
2. It takes more time to achieve inter-rater reliability as compared to the holistic rubric.

Disadvantages of Holistic Rubric

1. It gives a single overall score that does not communicate information about what to do to improve.
2. It is not good for formative assessment.

Disadvantages of General Rubric

1. It has lower reliability as compared to (at first than with) task-specific rubric.
2. It requires practice to apply well.

Disadvantages of Task-Specific Rubric

1. It cannot share with students (i.e. it would give away answers).
2. Because it is task-specific so, there is a need to write new rubrics for each task.
3. For open-ended tasks, good answers are not listed in rubrics, so, they may be evaluated poorly.

Summary

A concept map is a visual tool that helps an individual to dig into an idea in detail. It is a visual representation of information. It is a diagram that shows the relationships between different concepts or ideas.

It is a visual tool for a better understanding and an instructional strategy for individual and group learning. It is applicable for the learning continuum or teaching, testing, training, and thinking. It develops concept maps called the 'meaningful learning theory' based on relevance and integration and not on rote learning.

The concept map focuses on in-depth knowledge of a topic, proper organization of thoughts, remember important information, and understand relationships.

A concept map allows integration of concepts, clarifies connections between different concepts, connects theory to application, fosters problem-solving skills among learners, guides in formulating new concepts, and stimulates critical thinking.

A portfolio is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas. It is a collection of work (evidence) in an electronic format that showcases learning over time. It is an electronic format for students to record their work, goals, and achievements, reflect on and share their learning, receive feedback, and nourish forward.

Physical and social environment management, time management, effort regulation, alternative or authentic assessment are the pedagogical value and potential benefits of an e-portfolio. It enhances knowledge, facilitates communication, and uses a skills assessment source for teachers.

Podcasting and vodcasting are internet technology. It can provide users with information materials that they can use at any time, at any place.

With the help of podcasts, students can control the pace of their studies. It can be a tool for teachers in communicating with parents about curriculum plans and content, assignments, and other information. It is an innovative and effective tool for evaluation.

The vlog stands for a video blog or video log and refers to a type of blog where most or all of the content is in a video format.

According to Liori, a vlog or video is more dynamic (Dynamic & Interactive) in nature and if used wisely, it can result in a more lasting impact than blog posts written in plain text.

The five types of vlogs are - Personal, Live Broadcasting, Informative, Bereavement, and Conversational vlogs.

The vlogs are useful in sharing ideas, for better Learning, for demonstration of an idea, for collaboration, sharing of thoughts & Ideas, developing confidence, tracking the performance, and reducing academic pressure among learners. It is popular, current, interactive, and free.

A talk show performance is an authentic version of the more traditional in-class presentation. It directs students to take on and embody their learning for an interactive, live, or record discussion. It can be character-based.

The minute paper is designed in such a way that it takes a minute to complete. It is generally or commonly used at the end of class to diagnose students' understanding of key concepts or topics. The minute paper can also be used throughout the lecture.

Typically, the minute paper will ask the students to identify what they found most useful and most challenging. The minute paper helps to identify if further support is needed.

Before or at the start of the next class, the results of the student responses can be discussed as group feedback, and strategies can be offered for remediation if needed.

Artificial intelligence may be defined as the capability of a machine to imitate intelligent human behavior**.**

Artificial intelligence **d**igitized and automated the processes. It makes our digital and automated processes smarter. It enhances the reliability quotient of any technology.

It is useful for personalized education, assistance to teachers, accessible & inclusive education, remote proctoring, and answer sheet evaluation.

An assessment rubric is an explicit set of criteria used for assessing a particular type of work or performance and provides more details than a single grade or mark. Therefore, assessment rubrics will help an individual grade more objectively.

Assessment rubrics help teachers to provide students with feedback that is clear, directed, and focused on ways to improve learning; throw light on assignment expectations so students can focus on the work instead of guessing what the teacher wants; adapt his or her approach to teaching aspects of a course based on thematic gaps in student learning that are easily identified by reviewing rubrics across a class, develop consistency in how teacher evaluates student learning across students and throughout a class, spent less time on grading; and spent more time on teaching.

Assessment rubrics help students to focus their efforts on completing assignments in line with clearly set expectations; and self as well as peer-reflect on their learning, making informed changes to achieve the desired learning level**.**

Keywords

A **concept map** is a visual tool that helps an individual to dig into an idea in detail. It is a visual representation of information. It is a diagram that shows the relationships between different concepts or ideas.

A **portfolio** is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas. It is a collection of work (evidence) in an electronic format that showcases learning over time.

Podcasting is the combination of audio and transcription. In Podcasts, audio is not multimedia, so, therefore, no streaming is there.

Vodcasting is a combination of video and transcription. In vodcasts, there is streaming.

The **vlog** stands for a video blog or video log and refers to a type of blog where most or all of the content is in a video format**.**

A **talk show performance** is an authentic version of the more traditional in-class presentation. It directs students to take on and embody their learning for an interactive, live, or record discussion.

The **minute paper** is generally or commonly used at the end of class to diagnose students' understanding of key concepts or topics.

Artificial intelligence may be defined as the capability of a machine to imitate intelligent human behavior**.**

An **assessment rubric** is an explicit set of criteria used for assessing a particular type of work or performance and provides more details than a single grade or mark.

Self Assessment

1. A concept map is a _____.
   A. visual tool
   B. visual representation of information
   C. visual tool and representation of information
   D. not useful for visual learners

2. The complete structure of a concept map is built around ____.
   A. a node
   B. a focus question or theme
   C. a proposition
   D. a link

3. Conceptual way concept map is very similar to
   A. a flowchart
   B. a landscape
   C. a digital map
   D. a mandala

4. The e-portfolio, based on function, is _____
   A. digital portfolio
   B. electronic portfolio
   C. showcase portfolio
   D. web folio

5. Career planning is one of the main _____ of e-portfolio.
   A. component
   B. function
   C. purpose
   D. type

6. The full form of RSS is
   A. Really Simple System
   B. Regular Simple Syndication
   C. Really Simple Syndication
   D. Really Simple Strategy

7. Identify the correct statement?
   A. Podcast does not reduce the class attendance of students.
   B. There is a negative impact on the testing skills of students with Podcast.
   C. Students cannot control the pace of their studies with Podcast.
   D. There is decrease in motivation of students with Podcast.

8. Vlog means
   A. audio + transcription + blog
   B. vodcast - transcription + blog
   C. video + transcription + blog
   D. audio - transcription + blog

9. To make vlog or vlogs, an individual can use _____.
   A. animoto only

B. windows movie maker only
C. YouTube only
D. any one out of animoto, windows movie maker and YouTube

10. The Minute Paper will ask the students to identify what they found -
A. most useful and challenging.
B. most useful.
C. most challenging.
D. most descriptive.

11. In a talk show performance group of 4 to 5 students, the numbers of special guests will be
A. one
B. two
C. one or two
D. three

12. Artificial intelligence enhances the _____of any technology.
A. intelligence quotient
B. emotional quotient
C. social quotient
D. reliability quotient

13. _____learning channels will become capable of supporting a range of _____.
A. Visual; learning styles
B. Visual and dynamic; learning styles
C. Dynamic; learning styles
D. Visual and dynamic; leadership styles

14. Chose the correct statement from the following:
A. Assessment rubrics decrease objectivity.
B. Assessment rubrics increase subjectivity.
C. Assessment rubrics reduce assessment time.
D. Assessment rubrics delay feedback to students.

15. The holistic rubric is useful for
A. simple tasks and performances.
B. judging complex performances.
C. judging consistently in different course sections.
D. state-level accountability assessments.

Answer for Self Assessment

1.	C	2.	B	3.	A	4.	C	5.	C
6.	C	7.	A	8.	C	9.	D	10.	A
11.	B	12.	D	13.	B	14.	C	15.	A

Review Questions

1. Discuss various purposes and pre-requisites of concept map.

2. Define the term E-portfolio. Comment on the various benefits of E-portfolio.
3. Analyze the meaning and uses of Vlog.
4. What is the purpose of minute paper? Which suggestion a teacher must keep in his/her mind while using a minute paper as an assessment tool?
5. Explain different types of assessment rubrics. Write also advantages and disadvantages of different types of assessment rubrics.

Further Readings

- NTA UGC NET/SET/JRF – Paper-I: Teaching and Research Aptitude by KVS Madaan, Pearson.
- UGC-NET/JRF/SET Teaching & Research Aptitude (General Paper-I) by Dr. K. Kautilya, Upkar.
- Trueman's UGC NET/SET General Paper-I by M. Gagan, Sajit Kumarm Danika Publishing Company.
- CBSE UGC-NET: Teaching & Research Aptitude by Dr. M.S. Ansari & RPH Editorial Board, Ramesh Publishing House.

Web Links

- https://miro.com/blog/what-is-concept-map/
- https://learningcenter.unc.edu/tips-and-tools/using-concept-maps/
- http://edutechwiki.unige.ch/en/Learning_e-portfolio
- https://elearning.tki.org.nz/Teaching/Assessment/e-Portfolios
- https://www.clemson.edu/academics/programs/eportfolio/information.html
- https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/educational-technologies/all/eportfolios
- https://www.mededpublish.org/manuscripts/2029
- https://teaching.berkeley.edu/resources/assessment-and-evaluation/design-assessment/e-portfolio
- http://easi.cc/archive/septvod/part1/web_data/slides_and_notes.htm
- https://www.d.umn.edu/~hrallis/professional/presentations/cotfsp06/indiv_tools/podcasting.html
- https://en.wikipedia.org/wiki/Uses_of_podcasting
- https://en.wikipedia.org/wiki/Podcast
- https://carleton.ca/edc/teachingresources/teaching-with-technology/podcasting/
- https://en.wikipedia.org/wiki/Vlog
- https://Theartsdevelopmentcompany.Org.Uk/Resources/Good-to-know-1/What-is-vlogging-2/
- https://www.workformums.co.uk/pros-and-cons-of-vlogging/
- https://www.profkrg.com/the-pros-and-cons-of-vlogging
- https://socialmediaandtheclassroom415.weebly.com/vlogging.html
- https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/teaching-tips-creating-positive-learning-environment/padlet
- https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/piazza
- https://www.niu.edu/citl/resources/guides/instructional-guide/rubrics-for-assessment.shtml
- https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/assessing-student-work/grading-and-feedback/rubrics-useful-assessment-tools
- http://www.ascd.org/publications/books/112001/chapters/What-Are-Rubrics-and-Why-Are-They-Important%C2%A2.aspx
- https://teaching.berkeley.edu/resources/assessment-and-evaluation/design-assessment/rubrics
- https://en.wikipedia.org/wiki/Rubric_(academic)
- https://www.scholarify.in/innovations-in-evaluation-systems/

LOVELY PROFESSIONAL UNIVERSITY
Jalandhar-Delhi G.T. Road (NH-1)
Phagwara, Punjab (India)-144411
For Enquiry: +91-1824-521360
Fax.: +91-1824-506111
Email: odl@lpu.co.in