

UNIT I- NATURE OF LEARNING AND TEACHING

INTRODUCTION

Learning is the process by which an individual acquires knowledge, attitudes and skills that are necessary to meet the demands of life. While touching a burning candle, a child gets burnt and he withdraws the fingers. When he faces a similar situation again he withdraws his fingers faster. Gradually he learns to avoid not only the burning candle but also other burning things. The behaviour of an individual is thus changed through experiences. This change in behaviour brought about by experiences is commonly known as learning.

LEARNING: MEANING

Learning is a key process in human behavior. Learning is occurring all the time. With every new experience, new event or new situation we learn something.

- The acquisition of knowledge or skills through study, experience or being taught
- Learning is the act of acquiring new or modifying and reinforcing knowledge through study.
- Knowledge acquired by systematic study in any field of scholarly application.
- The modification of behavior through practice, training and experience
- Learning itself cannot be measured, but its results can be.
- Learning is an important form of personal adaptation.
- The activity of gaining knowledge by studying, practicing and being taught
- Knowledge or skill gained from learning

LEARNING DEFINITION

- Learning is acquiring any skill that enriches your life. It doesn't have to be taught out of a book or by a teacher, rather you may acquire it through your own exploration, through sharing or by instruction from anyone, not necessarily a "teacher". - Angela Single
- Learning is a relatively permanent change in the behavior or attitude of a person over time. - Christing Chin Sang
- The acquisition of new responses to various stimuli. - Eric Blackburn
- Learning is accumulating of experiences and the consequential growth and new understanding of the world around us. - Kristi Mcgrath

- . Learning is a change in behavior. -Rebecca Pangborn
- Learning is a process. It is not static. A person never stops acquiring new information. It keeps a person's mind active and aware but also conscious to the world around them.- Veronica Iacobazzo
- Learning is a lifelong process of gaining and using information presented to us. The ability to learn is endless, as long as the desire is present. Learning is only successful when the information gained is used and understood.- Thomas Correll
- Learning is the accruing of knowledge that collectively drives behavior development and external interaction. - Abby Shubert
- A change that occurs in response to thinking or other sensual stimuli. - Scott Miller
- Learning is a relatively permanent change in behavior that results from experience-Stephen b.klein

NATURE OF LEARNING

- Learning is Universal: Every creature that lives learns. The human nervous system is very complex, so are human reactions and so are human acquisition.
- Learning is through Experience: Learning always involves some kind of experience, direct or indirect.
- Learning is from all Sides: Today learning is from all sides. Children learn from parents, teachers, environment, nature, media etc.
- Learning is Continuous: Every day new situations are faced and individual has to bring essential changes in his style of behavior adopted to tackle them. Learning is from birth to death.
- It results in Change in Behaviour: It is a change of behavior influenced by previous behavior. It is any activity that leaves a more or less permanent effect on later activity.
- Learning is a relatively Permanent Change: After a rat wakes up from its nap, it still remembers the path to the food.
- Learning is not directly observable: The only way to study learning is through some observable behavior. Actually, we cannot observe learning; we see only what precedes performance, the performance itself, and the consequences of performance.

- Reinforcement: The practice or experience must be reinforced in order for learning to occur. If reinforcement does not accompany the practice or experience the behavior will eventually disappear.

BASIC PRINCIPLES OF LEARNING

- Learning is growth
- Learning is actually a form of growth. It is something that is natural and inevitable. Through his daily activities, the child grows both mentally and physically. Great educators are one in their emphasis on this organic characteristic of learning. Pestalozzi symbolized his meaning by a tree, Froebel by a garden, Marietta John by a pine branch. Thus, learning is growth through experience.
- Learning is adjustment
- Learning is basic to our attempts to adjust ourselves to our environment. Learning helps the individual to adjust himself adequately to the new situation. In the words of Gates and others, “Learning may be thought of as the progressive change in behavior which is associated on the one hand with successive presentations of a situation, and, on the other, with repeated efforts of the individual to react to it effectively.” School learning can only take place if there is a definite adjustment towards the goal of learning.
- Learning is organizing experience
- Learning is not just an addition of new experience nor is old experience summed up, rather it is a synthesis of the old and the new experiences which result in a completely new organization of pattern of experiences. This organization of experiences involves the elimination of many habits unnecessary in the final consummation of the act. Facts are arranged and rearranged in proper relation and then appropriate learning takes place.
- Learning is purposeful
- All true learning is purpose-goal-directed. When the learner finds that his desires are fulfilled, learning is effective. The studies on forgetting show that irrelevant material is more rapidly forgotten than relevant material.
- Learning is intelligent
- Meaningless repetition does not produce permanent learning. Learning takes place when an insight is gained, and the processes are understood. Only understanding and intelligent repetitions can ensure lasting results in learning.
- Learning is action

- Learning is the natural outcome of the individual's attempts to meet his basic and normal needs. All genuine learning is self – learning. So the individual must become an active participant in the learning process .Only participation and doing effect learning. All the progressive methods of teaching, the Dalton plan, the Project method, the Montessori Method, the Kindergarten, the Basic Education lay stress on this characteristic of learning.
- Learning is both individual and social
- Learning is more than an individual activity; it is a social activity too. No one can deny that the social agencies like the family, the community, the gang, the films, the religious places, and other institutions have a tremendous influence on the child and are always affecting his behavior pattern. Individual mind is affected by the group mind consciously as well as unconsciously.
- Learning is unenforceable
- Human learning is a matter of human action; it cannot be enforced upon the human beings. Most pupils are, generally, able to comply with normal expectations. But when any child is not, the teacher must wait for that child to be ready for learning or he will destroy the very work which is being attempted. It is a characteristic of learning that it is unenforceable.
- Learning is a product of the environment
- Learning cannot take place in vacuum-it can only take place in relation to environment. The environment should be healthy and rich in educative possibilities. ITrue learning affects the conduct of the learner
- True learning produces changes in the conduct (behavior pattern) of the leaner. Every experience produces a change in the mental structure of the learner which in turn affects the conduct of the learner. This, in short, is the goal of learning.
- Learning is whole
- The human organism functions as a whole. Wholesomeness, as distinct from splitting, is central principle of life.
- Learning frequently depends upon insight.
- Insight has sometimes been described as the “flash of understanding”. It occurs when a situation, originally without meaning, suddenly becomes charged with meaning, or when the solution to a problem or the way to a goal, becomes apparent. The ability to gain insight depends upon interest, previous knowledge and intelligence. In the case of a dull child, it will

be necessary for the teacher to give more than usual assistance to enable him to grasp the meaning underlying a situation.

LEARNING AND ITS IMPLICATIONS

- Haynes lists the activities fit for students of different learning styles.
- For auditory learners, these activities include interviewing, debating, participating on a panel, giving oral reports and participating in oral discussions of written material.
- For visual learners, these activities are suggested: computer graphics, maps, graphs, charts, cartoons, posters, diagrams, text with a lot of pictures.
- For tactile learners, some favorite activities include drawing, playing board games, and making models.
- For kinesthetic learners, playing games that involve the whole body, movement activities, making models, and setting up experiments.
- For global learners, choral reading, recorded books, story writing, computer programs, games, group activities.
- For analytic learners, information presented in sequential steps, teacher directed, clear goals and requirements.

ROTE LEARNING VERSUS MEANINGFUL LEARNING

- Rote learning will be different from Meaningful learning, which generally means reproduction of the received information. It implies that the learned persons will follow a prescribed behavioral pattern.
- In rote learning methods, the learner reproduces whatever she or he is taught and is not worried about the correctness of the information being imparted to her/him.
- In a meaningful learning process the learner is expected to properly examine the information received by her/him and question even the methodology at each and every step. She/he internalizes that information only after having full satisfaction as per her/his own reasoning.
- The output is at most equal to the input in the rote learning process; in meaningful learning process, output can be more than the input. It is so, because a meaningful learner will always contribute something new. For example, a rote learner will learn an essay by properly assimilating the given information in her/his own creative way.

- Rote learning is a parasitic learning and the learner learns only whatever her/his parent or teacher teaches her/him. Her/his mind becomes totally parasitic. She/he is not able to bring out anything more than what she/he has learned from the teacher.
- A meaningful learner, on the other hand, learns how to stand on one's own feet. Hence, although a meaningful learner may have problems in the beginning, ultimately she/he would grow bigger in stature and would be able to bring new fruits.
- Rote learning leads to set responses only, but meaningful learning teaches one to critically appraise the problem and come to the right solution relevant for the particular problem.
- A rote learner is just like a parrot, which reproduces whatever it is taught, but a meaningful learner learns to examine everything critically with an open mind to bring out something new every time. A rote learner is, basically, a reproducer, whereas a meaningful learner is an innovative person.
- A rote learner is, generally, a passive participant in any event, but a meaningful learner is an active participant in the whole process. Rote learning means just imitating a pattern, but meaningful learning means adding something new to the pattern to change it for better.

Meaningful Learning	Rote Learning
Holistic	Fragmented
Dynamic	Static
Original	Repetitive
Participatory	Non-participatory
Driven by love for learning: Independent	Driven by need for learning: Parasitic
Output > Input	Output < or =Input

DEFINITION OF ACTIVE LEARNING

- Active learning is "anything that involves students in doing things and thinking about the things they are doing" (Bonwell & Eison, 1991, p. 2).
- Felder & Brent (2009) define active learning as "anything course-related that all students in a class session are called upon to do other than simply watching, listening and taking notes".

MEANING OF ACTIVE LEARNING

Active learning is generally defined as any instructional method that engages students in the learning process. In short, active learning requires students to do meaningful learning activities and think about what they are doing.

Active learning is learning which engages and challenges children and young people's thinking using real-life and imaginary situations. It takes full advantage of the opportunities for learning presented by:

- Spontaneous play
- Planned, purposeful play
- Investigating and exploring
- Events and life experiences
- Focused learning and teaching.

TECHNIQUES OF ACTIVE LEARNING

- Think Pair Share: Students ponder the answer to a question and then share their thoughts with a neighbor.
- Role Playing: "Each student takes the role of a person affected by an Earth science issue, such as a volcano or a polluted lake and studies the impacts of Earth science issues on human life and/or the effects of human activities on the world around us from the perspective of that person."
- Discovering Plate Boundaries: This is a group discussion method employing many aspects of cooperative learning. In the example cited here, students use the "Jigsaw" technique to learn more about plate tectonics.
- Peer Review: Students review and comment on materials written by their classmates.
- Discussion: Promoting a successful discussion depends on correctly framing questions. Discover tips for framing discussion questions to promote higher order thinking.
- Problem Solving Using Real Data: Students use a variety of data to explore scientific questions.
- Game Based Learning: Uses competitive exercises, either pitting the students against each other or through computer simulations.

ACTIVE LEARNING AND ITS IMPLICATIONS

- These techniques are aimed at individual students. They can very easily be used without interrupting the flow of the class. These exercises are particularly useful in providing the instructor with feedback concerning student understanding and retention of material.
- The "One Minute Paper" - This is a highly effective technique for checking student progress, both in understanding the material and in reacting to course material. Ask students to take out a blank sheet of paper, pose a question (either specific or open-ended), and give them one (or perhaps two - but not many more) minute(s) to respond. Some sample questions include: "What is "scientific realism"?", "What is the activation energy for a chemical reaction?" and so on. Another good use of the minute paper is to ask questions like "What was the main point of today's class material?" This tells you whether or not the students are viewing the material in the way you envisioned.

Effective Response

- This is similar to the above exercises, but here you are asking students to report their reactions to some facet of the course material - i.e., to provide an emotional or valuative response to the material. Obviously, this approach is limited to those subject areas in which such questions are appropriate (one should not, for instance, inquire into students' effective responses to vertebrate taxonomy). However, it can be quite a useful starting point for courses such as applied ethics, particularly as a precursor to theoretical analysis.

Daily Journal

- This combines the advantages of the above three techniques, and allows for more in-depth discussion of or reaction to course material. The teacher may set aside class time for students to complete their journal entries, or assign this as homework. The only disadvantage to this approach is that the feedback will not be as "instant" as with the one-minute paper (and other assignments which you collect the day of the relevant lecture). But with this approach (particularly if entries are assigned for homework), The teacher may ask more complex questions, such as, "Do you think that determinism is correct, or that humans have free will? Explain your answer". You might have students find and discuss reports of scientific studies in popular media on topics relevant to course material, such as global warming, the ozone layer, and so forth.

Reading Quiz

- Clearly, this is one way to coerce students to read assigned material! Active learning depends upon students coming to class prepared. The reading quiz can also be used as an effective measure of student comprehension of the readings (so that you may gauge their level of sophistication as readers). Further, by asking the same sorts of questions on several reading quizzes, you will give students guidance as to what to look for when reading assigned text.

Clarification Pauses

- This is a simple technique aimed at fostering "active listening". Throughout a lecture, particularly after stating an important point or defining a key concept, stop, let it sink in, and then (after waiting a bit!) ask if anyone needs to have it clarified. You can also move around the room during these pauses to look at student notes, answer questions, etc. Students who would never ask a question in front of the whole class will ask questions during a clarification pause as you move about the room.

Questions and Answers

- While most of us use questions as a way of prodding students and instantly testing comprehension, there are simple ways of tweaking our questioning techniques which increase student involvement and comprehension. Though some of the techniques listed here are "obvious", we will proceed on the principle that the obvious sometimes bears repeating (a useful pedagogical principle, to be sure!).

The "Socratic Method"

- Taking its namesake from the most famous gadfly in history, this technique in its original format involved instructors "testing" student knowledge (of reading assignments, lectures, or perhaps applications of course material to a wider context) by asking questions during the course of a lecture. Typically, the instructor chooses a particular student, presents her with a question, and expects an answer forthwith; if the "chosen" student cannot answer the question presented, the instructor chooses another (and another) until the desired answer is received.

Student Summary of another Student's Answer

- In order to promote active listening, after one student has volunteered an answer to your question, ask another student to summarize the first student's response. Many students hear little of what their classmates have to say, waiting instead for the instructor to either correct or repeat the answer. Having students summarize or repeat each others' contributions to the course, both foster active participation by all students and promote the idea that learning is a shared enterprise. Given the possibility of being asked to repeat a classmate's comments, most students will listen more attentively to each other.

The Fish Bowl

- Students are given index cards, and asked to write down one question concerning the course material. They should be directed to ask a question of clarification regarding some aspect of the material which they do not fully understand; or, perhaps you may allow questions concerning the application of course material to practical contexts. At the end of the class period (or, at the beginning of the next class meeting if the question is assigned for homework), students deposit their questions in a fish bowl. The instructor then draws several questions out of the bowl and answers them for the class or asks the class to answer them.

Finger Signals

- This method provides instructors with a means of testing student comprehension without the waiting period or the grading time required for written quizzes. Students are asked questions and instructed to signal their answers by holding up the appropriate number of fingers immediately in front of their torsos (this makes it impossible for students to "copy", thus committing them to answer each question on their own). For example, the instructor might say "one finger for 'yes', two for 'no'", and then ask questions such as "Do all organic compounds contain carbon [hydrogen, etc.]?". Or, the instructor might have multiple choice questions prepared for the overhead projector and have the answers numbered (1) through (5), asking students to answer with finger signals. In very large classes the students can use a set of large cardboard signs with numbers written on them. This method allows instructors to assess student knowledge literally at a glance.

Flash Cards

- A variation of the Finger Signals approach, this method tests students' comprehension through their response to flash cards held by the instructor. This is particularly useful in disciplines which utilize models or other visual stimuli, such as Chemistry, Physics or Biology. For example, the instructor might flash the diagram of a chemical compound and ask "Does this compound react with H₂O?". This can be combined with finger signals.

Share/Pair

- Grouping students in pairs allows many of the advantages of group work. Students have the opportunity to state their own views, to hear from others, to hone their argumentative skills, and so forth without the administrative "costs" of group work (time spent assigning people to groups, class time used just for "getting in groups", and so on). Further, pairs make it virtually impossible for students to avoid participating, thus making each person accountable.

Discussion

- Students are asked to pair off and to respond to a question either in turn or as a pair. This can easily be combined with other techniques such as those under "Questions and Answers" or "Critical Thinking Motivators" above. For example, after students have responded to statements, such as "Whatever a society holds to be morally right is in fact morally right" with 'true' or 'false', they can be asked to compare answers to a limited number of questions and to discuss the statements on which they differed. In Science classes, students can be asked to explain some experimental data that supports a theory just discussed by the lecturer. Generally, this works best when students are given explicit directions, such as "Tell each other why you chose the answer you did".

Evaluation of another Student's Work

- Students are asked to complete an individual homework assignment or short paper. On the day the assignment is due, students submit one copy to the instructor to be graded and one copy to their partner. These may be assigned that day, or students may be assigned partners to work with throughout the term. Each student then takes their partner's work and depending on the nature of the assignment gives critical feedback, standardizes or

assesses the arguments, corrects mistakes in problem-solving or grammar, and so forth. This is a particularly effective way to improve student writing.

SELF- LEARNING

Definition:

- a) A way of learning about a subject that involves studying alone at home, rather than in a classroom with a teacher.
- b) Learning done by oneself, without a teacher or instructor
- c) Self-education is the act of learning about a subject or subjects in which one has had little to no formal education.
- d) A person who has learned a subject without the benefit of a teacher or formal education; a self-taught person.

TEACHING: DEFINITION

According to **Gage**, "Teaching is a form of interpersonal influence aimed at changing the behavior potential of another person."

Edmund Amidon defined it as-" Teaching is an interactive process, primarily involving class room talk which takes place between teacher and pupil and occurs during certain definable activity."

Brubacher," Teaching is an arrangement and manipulation of a situation in which an individual will seek to overcome and from which he will learn in the course of doing so."

Skinner- Teaching is the arrangement of contingencies of reinforcement.

Ryans- "Teaching is concerned with the activities which are concerned with the guidance or direction of the learning of others."

AbbattMcmohan- "Teaching is helping other people to learn."

TEACHING: MEANING

- Teaching is a process that improves the student's seeking level more easily and it might overcome any situation in an easy way.
- Teaching means interaction of teacher and students. They participate for their mutual benefits. Both have their own objectives and targets to achieve them.
- Teaching includes all the activities of providing education to others. The person who provides education is called teacher. The teacher uses different methods for giving best knowledge to his students. He tries his best to make students understand. His duty is to encourage students to learn the subjects.
- Teaching is the process of attending to people's needs, experiences and feelings and making specific interventions to help them learn particular things.

CHARACTERISTICS OF GOOD TEACHING

- The main character of teaching is to provide guidance and training.
- Teaching is interaction between teacher and students.
- Teaching is an art to give knowledge to students in an active way.
- Teaching is a continuous process.
- Teacher can teach effectively, if he has full confidence on the subject.
- Teaching encourages students to learn more and more.
- Teaching is formal as well as informal
- Teaching is communication of information to students. In teaching, teacher imparts information in an interesting way, so that students can easily understand the information.
- Teaching is a tool to help the student to adjust himself/herself in the society and to its environment.
- A desire to share your love of the subject with students
- An ability to make the material being taught stimulating and interesting
- A facility for engaging with students at their level of understanding
- Showing concern and respect for students
- A commitment for encouraging independence.

VIEWS OF GREAT THINKERS AND PHILOSOPHERS ON TEACHING

- Teaching is the mark of an educated mind to be able to entertain a thought without accepting it. Those who educate children well are more to be honored than parents, for these gave only life, those gave the art of living well. The educated differ from the uneducated as much as the living from the dead. – **Aristotle**

- "Human education means the training which one gets from nature".- **Panini**
- Learning should take place in nature and from nature and not be restricted to the classroom- **Rabindranath Tagore**

CHARACTERISTICS OF A REFLECTIVE TEACHER:

- Understands your reasons for teaching,
- Cultivates ethical behavior in students and yourself
- Pools both patience and perseverance
- Designs curriculum that works
- Perfects instructional practices and assessment skills
- Connects positively to the whole-school culture
- Examines his or her own reactions to children or their actions to understand their source
- Is curious about children's play and watches it closely
- Documents details of children's conversations and activities
- Takes time to study notes and photos to puzzle out what is significant
- Eagerly shares stories about children's learning with families and co-workers
- Asks co-workers and children's families for their insights
- Reads professional literature to learn more
- Shows children, photos and stories of themselves to hear their views
- Changes the environment and materials to encourage new play and learning possibilities
- Knows oneself.
- Finds the details that touch one's heart and mind.
- Seeks the child's perspective.
- Examines the physical and social-emotional environment.
- Explores multiple points of view.
- Considers opportunities and possibilities for next steps.
- The reflective teacher analyzes his own lessons to see what worked and what did not. He makes changes as necessary, when a lesson does not go well, which will happen to everyone. He learns from it and does not teach the lesson the same way again.

