

Learning Process



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4.1 Learning Process

Learning is an important process for the students. Students need to learn to gather information and knowledge, to excel in examination, to imbibe good study habits, for progress in education, for professional progress, to elevate the living status, to be a successful individual, to lead a happy and satisfied life and to achieve personality development. In this unit, we will study about the learning process.

4.1.1 Concept of Learning Process

An individual begins learning since birth, which goes on till death. Learning is a natural and continuous process. Our senses should be active for effective learning. Man has achieved progress due to constant learning. Psychologists have defined learning in various ways. Few of the definitions are given below :

According to **Norman L. Munn**, "Learning is the permanent adaptation while responding to the situation."

According to **Murphy**, "The term learning covers every modification in behaviour and perception."

According to **Crow and Crow**, "Learning is the acquisition of habits, knowledge and attitudes."

We can conclude from the above definitions that learning means the process of bringing purposeful change in one's own self, according to surrounding situation and

environment. This change is supposed to be relatively permanent. Learning involves many physical and mental activities. Appropriate learning brings change in behaviour that is long lasting. Learning causes changes in knowledge, attitude, values, skills etc. of an individual, which are reflected through that individual's behaviour. When change in behaviour of an individual's affective, cognitive and psychomotor domain occurs, we can say that learning has taken place. Change in cognitive domain means development of thinking power due to acquisition of knowledge. Change in affective domain means change in individual's emotions, values, interests and attitude. Change in cognitive or psychomotor domain means change in individual's physical movement or activities. On the basis of this, We can describe the nature of learning.

4.1.2 Nature of Learning Process

- (1) **Goal (oriented)** - Learning process leads to goal. Every person has a goal in life for which he/she learns. Without a goal, learning will not happen.
- (2) **Motivation** - Motivation is essential for learning. Motivated individuals urge to achieve the goal through learning.
- (3) **Path Searching Movement** - After motivation, an individual tries to find the correct way to reach his/her goal.
- (4) **Adjustments** - It is very important to do adjustments while learning.

- (5) **Repetition** - Learning should be repeated several times to avoid forgetting.
- (6) **Insight** - Learning should be done with comprehension of gist, so that gained knowledge shall last for a long duration.
- (7) **Restructuring of the behaviour** - While learning, as we go on enriching our experiences, we also go on restructuring the behaviour and planning the right actions.



Remember it

None of the living organisms require to be taught how to learn. Butterfly comes out of the cocoon woven by a larva around itself, cow regurgitates, sparrows build their nests, birds fly in circular movements, find food for living, infant sucks a toy/thing etc. All these activities are natural.

4.1.3 Characteristics of Learning Process

On the basis of various definitions and nature of learning, we can state the following characteristics of learning process :

- (1) Learning is a fundamental process of human life which leads to the progress.
- (2) As Learning is a psychophysical process, it is necessary that senses should be active.
- (3) Learning is a continuous process.
- (4) Learning is a purposeful and goal oriented process.
- (5) Learning involves a specific sequence.
- (6) Internal and External motivation is essential for learning.
- (7) Learning brings desirable change in the behaviour.
- (8) Capacity of adjustment increases due to learning.
- (9) Learning is firmly rooted through practice and constancy.
- (10) The changes in behaviour caused due to learning are progressive in nature.
- (11) Acquisition of new things is expected to happen through learning.
- (12) The knower, the knowable and the knowledge are trilo of learning.

- (13) Knowledge acquired by learning can be applied in another kind of learning.
- (14) Learning helps in comprehension.



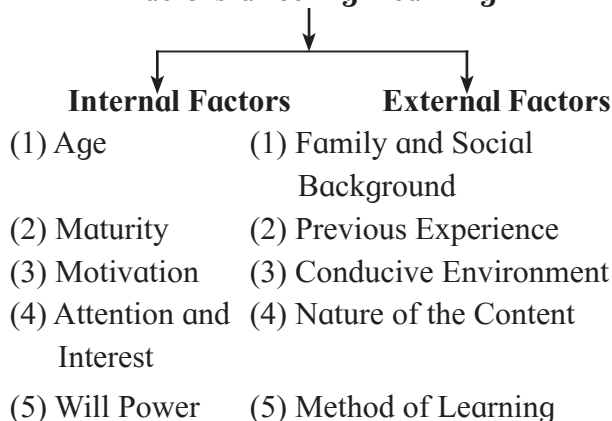
Think about it

We learn to use computers, music, cooking, driving, swimming, playing games and various other activities and also try to become skillful in doing those activities. Think in order to learn, how the characteristics mentioned above can be applied to learn and become skillful.

4.1.4 Factors affecting Learning

For effective learning, we need to consider the factors that affect learning. Factors affecting learning are as follows :

Factors affecting Learning



• **Internal Factors** - These factors are related to individual learner.

- (1) **Age** - Learning ability increases with the increasing age. It increases upto a certain age.
- (2) **Maturity** - Physical and mental maturity makes learning easy.
- (3) **Motivation** - For any kind of learning, urge of learning is essential. It means, for learning, internal and external motivation are essential.
- (4) **Attention and Interest** - Students focus attention on a subject if they have interest in the same.
- (5) **Will Power** - If there is a will to learn, learning happens. Dynamism in learning minimizes, if the person is exhausted and bored.

• **External Factors** - These factors are related to the environment.

- (1) **Family and Social Background** - The family and social background of a student includes culture, language, economical status, physical resources, education of parents, values and so on. All these factors affect learning.
- (2) **Previous Experience** - The quality of learning depends on the previous experience of the learner. Previous experience helps the learner to assimilate and understand learning.
- (3) **Conducive Environment** - Learning happens easily if there is a conducive environment.
- (4) **Nature of Content** - Learning becomes simple, if the content is easy to understand. On the other hand, incomprehensible content hinders learning.
- (5) **Method of Learning** - Different individuals can have different methods of learning. The kind of learning method affects the pace of learning and decides whether it will help in attaining mastery over the subject.

Every activity is goal oriented. Learning is also goal oriented e.g., an individual learns using computer for his business growth. Only knowing about using a computer is not enough, but use of various softwares, imbibing the new knowledge is equally important. Learning is a continuous process. In learning, mental processes like concentration, critical analysis and physical processes like-activeness, fitness etc. are included.

Initially there are barriers while learning. We cannot act easily, do not understand a topic due to which learning becomes difficult. Whatever efforts we take to understand the subject is known as adjustment. Learning for comprehending the knowledge about computer includes understanding the relation many parts of computer i.e. hardware and softwares, structure, process, various

commands, understanding diagrammatical representation are all parts of this learning. Inspiration from different sources leads to learning, such as to know something new, self progress, to be independent, to be happy, for improving qualification etc.

4.1.5 Transfer of Learning

Experience gets transmitted if the knowledge, skills, techniques acquired in one condition, affect the knowledge, skills, techniques acquired in another condition; either in favourable or unfavourable manner or do not affect at all (zero effect); then it is known as transfer of learning.

• Types of Transfer of Learning

- (1) **Positive Transfer** - Transfer of learning is said to be positive when learning carried out in one situation affects favourably the learning in other situation or the learning a subject helps to learn another subject effectively. e.g., it is easy to ride a motorcycle, if you know to ride a bi-cycle. The knowledge of Mathematics helps while learning Physics.
- (2) **Negative Transfer** - Transfer of learning is said to be negative; when learning in one situation affects unfavourably the learning in another situation. e.g., a Marathi speaking person may not be able to speak Hindi properly. In an intercaste marriage, the woman finds it difficult to observe customs in the family of in-laws.
- (3) **Zero Transfer** - Transfer is said to be 'Zero', when learning in one situation does not have any influence over the learning in another situation. e.g., knowledge of Mathematics will not help to learn music. Grammatical rules of Marathi do not help to understand formula in Physics.

• Factors transferred through Learning

- (1) **Knowledge** - If one has the knowledge of Sanskrit, then it is easy to learn Marathi or Hindi.

- (2) **Techniques, Methods and Skills** - One who can play tabla, can also play a dholki proficiently.
- (3) **Specific Vision and Loyalty Values** - One who always speaks truth, will never tell lies. One who behaves nicely will never do anything wrong to others.

• **Advantages of Transfer of Learning**

- (1) New skills are developed in the students.
- (2) It helps the students for generalization.
- (3) Helps in imbibing values within the students.
- (4) Qualities of having self confidence and remain goal oriented are inculcated in the students.
- (5) Creates interest for studies in students.

4.2 Theories of Learning

Many psychologists have laid theories on learning that are based on deep research. We are going to study about Theory of Trial and Error Learning and Theory of Insightful Learning.

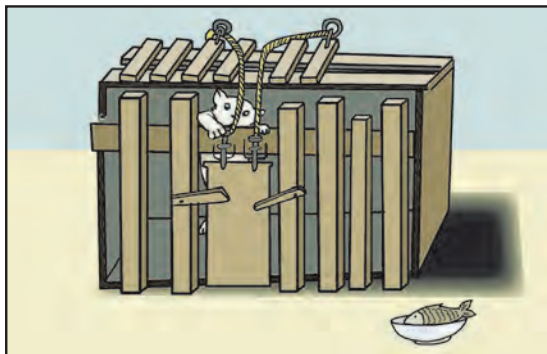
4.2.1 Theory of Trial and Error Learning



Remember it

What efforts do we take while imbibing the skills such as riding bicycle, swimming, cooking, playing games etc? What mistakes do we make? How do we overcome these mistakes? How do we practise to master these skills? What is the motivation for doing these activities?

Edward Lee Thorndike, an American Psychologist conducted many experiments on animals to understand the process of learning. He published this theory in 1898 in the book 'Animal Intelligence : Experimental Studies'.



Experiment - Thorndike placed a hungry cat in a cage. He kept fish in a plate outside the box. He observed the movements and reaction of the hungry cat. Hungry cat was randomly moving trying to grab the fish. During these movements, suddenly the cat's paw fell on a lever due to which the door of the cage opened and it could get the fish. In subsequent experiments, it was observed that cat took less and less time to come out of the cage and get the fish. Finally, the cat learnt to immediately press the lever and grab the food as soon as it was kept inside the box. On the basis of this experiment, the features of the trial and error theory can be stated as follows :

- (1) **Motivation** - As the cat was hungry, it tried to get the food.
- (2) **Path Searching Movements** - The cat searched for various alternatives to reach the goal.
- (3) **Success by Chance** - While searching for different alternatives, the cat by chance, put its paw on the lever and succeeded in getting the food.
- (4) **Fixation due to Success** - Since the cat could get the food after pressing the lever, it learnt to get fish by eliminating all useless movements and just pressing the lever.

On the basis of this theory, Thorndike has given three laws of learning :

- (1) **Law of Readiness** - Learning happens only if a person is physically and mentally ready for learning.
- (2) **Law of Practice** - For learning to do a specific act or to reach a goal, one has to constantly practise. Due to constant practising, one understands that act and it gets fixated.
- (3) **Law of Effect** - Actions resulting in happiness, pleasure, success are done frequently. Actions causing unhappiness, displeasure are avoided.



Remember it

Theory of Trial and Error Learning is also known as 'Learning through Errors'. While studying we commit many errors. Afterwards we correct these errors and try to avoid these errors in further study.

• Educational importance of Theory of Trial and Error Learning

- (1) Consider the physical and mental maturity of students for learning.
- (2) The content matter should be practised enough.
- (3) Proper motivation for learning should be created among students.
- (4) There should be cordial relationship between the student and the teacher for successful and effective learning.
- (5) Student's success in learning should be rewarded and appreciated by the teacher.

4.2.2 Theory of Insightful Learning

Insight means the capacity to gain holistic understanding of some event or action. In this theory it is important to understand the correlation between the various factors of that environment or situation.

At the end of 20th century, the impact of behaviourism decreased and structuralism came into light. According to Wertheimer, who was proponent of Gestalt theory and his colleague Koffka and Kohler, learning should be done as whole and not in parts. In 1925, German Psychologist Kohler proposed an alternative for Trial and Error method with theory of Learning by Insight.



Experiment - Kohler placed two sticks which could be inserted within each other separately in the cage. He also kept some bananas outside the cage. When ever the chimpanzee felt hungry, he tried to pull the banana's with one stick alternately. This was tried by him ample times. Once when he was very hungry, while playing with the sticks, suddenly they got inserted within each other due to which a long stick was formed. The chimpanzee was surprised and was able to pull the bananas placed outside the cage. By repeating the act, the chimpanzee could get bananas many times.

On the basis of this experiment, Kohler stated three steps of learning :

- (1) Realize the problem pertaining to the environment.
- (2) Realize the interrelationship or insight between various elements.
- (3) Finding the solution of the problem.

• Educational Importance of Theory of Insightful Learning

- (1) Objectives of learning should be simple and clear, so that it will be easy for the students to understand and hence the learning will be successful.
- (2) Teacher should use the maxim 'Whole to Part' while teaching.
- (3) For successful learning, the teacher should teach the skills to find out correlation, understanding differences and generalizations.
- (4) The level of subject matter should be as per the age of the learner because problem solving ability increases with the age and the experience.
- (5) Student should try to solve the problem with own efforts. Teacher should help the student to solve the problem.

In this way the students should make use of both theories of learning, namely 'Trial and Error' and 'Learning by Insight'. This would help to make their learning effective through self-efforts and problem solving.

Q.1 (A) Complete the statements by selecting the appropriate option from the given options.

- (1) According to Murphy, "Learning is modification in"
 (a) Attention and comprehension
 (b) Comprehension and behaviour
 (c) Knowledge and behaviour
 (d) Behaviour and perception
- (2) Change in individual's values, interests, and attitude is related to domain.
 (a) Cognitive (b) Affective
 (c) Psychomotor (d) Knowledge
- (3) When a child uses his previous experience while reacting to new situation, the law of is observed.
 (a) Effect (b) Readiness
 (c) Practice (d) Proximity
- (4) When teacher tells Atharva, your writing is very good; Atharva started writing stories. In this case Atharva's learning was influenced by
 (a) Motivation (b) Maturity
 (c) Age (d) Willpower

(B) Identify the correct correlation between Column 'A' and Column 'B' and match them.

Column 'A'	Column 'B'
(1) Path searching movement	(a) External factors
(2) Holistic understanding	(b) Trial and Error
(3) Learning method	(c) Zero Transfer
(4) Maturity	(d) Insight
	(e) Internal Factors

(C) Write the answers in one to two words.

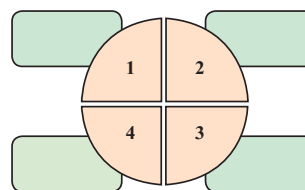
- (1) Write two factors which are transferred through learning.
- (2) Write names of two theories of learning.
- (3) Write two external factors affecting learning.

(D) Write the answers in one sentence.

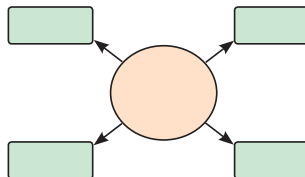
- (1) What is transfer of learning?
- (2) What is repetition?
- (3) Write definition of learning.

Q.2 Complete the following concept designs.

- (1) Write the steps followed by the hungry cat for getting the food in Thorndike's experiment.



- (2) Nature of Learning Process



Q.3 State your opinion about the following statements.

- (1) Motivation is necessary for learning.
- (2) Insight means a holistic understanding of a particular situation or action.

Q.4 Write the short notes.

- (1) Advantages of Transfer of Learning
- (2) Laws of Learning
- (3) Characteristics of Learning Process

Q.5 Explain the difference.

- (1) Theory of Trial and Error Learning and Theory of Insightful Learning
- (2) Positive and Negative Transfer of learning
- (3) Internal and External factors affecting learning

Q.6 Explain the following in about 50 to 80 words.

- (1) Characteristics of theory of Trial and Error Learning
- (2) Educational importance of theory of insightful learning
- (3) Impact of today's social environment on students' learning

Q.7 Write the answers to the following questions in 100 to 150 words each.

- (1) Explain with examples educational importance of Thorndike's theory of Trial and Error Learning.
- (2) Explain three stages of learning on the basis of experiment in theory of Insightful Learning.
- (3) Explain with examples what problems you are likely to face due to the lack of transfer of learning.

