then put the cat back inside the box for a second trial. Again, the cat was found to scramble around but it soon succeeded in pulling the string. Over a series of successive trials, the cat became increasingly efficient in getting out of the puzzle box. The cat took less and less time to pull the string each time it was put back in the box and the number of errors was also reduced on subsequent trials. Eventually it escaped almost as soon as it was put into the box. Thus, the animal finally learned the trick.

Throndike concluded that the learning of the cat in the puzzle box can be explained in terms of formation of direct connection between the stimulus and the response and it follows a mechanical process of trial and error. Learning is a gradual process by which unsuccessful movements are eliminated and successful behaviour is retained.

According to Throndike, the cat's learning is random or chance learning. It is purely mechanical. There is no place of reasoning in learning. In the language of Throndike, "learning is the establishment of bonds between stimulus and response and it follows a mechanical process of blind trial and error."

Educational Implication of Connectionism : Throndike's connectionism has been critised on the ground that it is a lower form of learning. It does not encourage understanding of the problem, and the creative ability of the learner is ignored. Yet it must be said that it is still important in modern pedagogical Theory.

In learning certain school subjects are considered important to gain efficiency in learning in order to the application of connectionism is unavoidable. Even in learning reasoning subjects like science and mathematics trial and the error method is helpful in developing concepts and efficiency, when the learner makes his trials and errors in his own way and evaluates his own methods.

Considered from physical point of view all learning primarily aims at the formation of habits through repetition or exercise. Habit makes a man perfect. So perfection can be attained in learning only through repetition.

Q.12. Which method of learning we generally use for young children?

.....

.....



9.6 LET US SUM UP

- Learning is most natural and common in life and everyone learns. All living creatures learn. But human learns to rationalize.
- Learning is the key process in the behaviour of human beings. Generally, learning process begins from the birth of a child and continues till death. Learning as used here refers to concerted activity that increases the capacity and willingness of individuals, groups, organizations and communities to acquire and productively apply new knowledge and skills, to grow and mature and to adapt successfully to changes and challenges.
- In educational psychology, learning is the most essential component. The child starts learning as soon as he comes in contact with the environment. We come across this phenomenon in almost every walk of life.
- God has created us to be curious and creative. It is our natural desire to want to acquire knowledge, but the way in which we learn and our reasons for learning can be very different. Right from birth , the individual is faced with the problem of making adjustment to his physical as well as social environment . Learning is a proper means to achieve this end.
- Learning as development, is free to move towards either direction – positive or negative .There is no guarantee that the individual will always pick-up good knowledge, desirable habits, interests and attitudes. He has equal chances to pick - up opposite of this. Learning can be defined as the process leading to relatively permanent behavioural change or potential behavioural change. Maturation and learning are closely related to each other. Maturation helps in the process of learning which can only take place if the stages for that type of learning has been achieved through a process of maturation.

- Different psychologists have defined various laws of learning and among them, psychologist Thorndike formulated three major laws of learning which are widely accepted and applied in the field of education. They are: Law of readiness, Law of exercise, Law of effects. Law of exercise has two sub–parts: (a) Law of use and (b) Law of disuse
- On the basis of extensive research and study the psychologists have given us different methods of learning, some of them are :
  a) Learning by doing or trial and error method.
  b) Learning by imitation.
  c) Learning by observation.
- All the methods and laws have the significant of the educational implications.



9.7 FURTHER READING

1) Educational Psychology by S. K. Mangal.
2) Educational Psychology by S. S. Chouhan.
3) Educational psychology by Dr. S. S. Mathur.



9.8 ANSWER TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : i) True, ii) True, iii) True, iv) True, v) True.

Ans. to Q. No. 2 : Thorndike formulated three major laws of learning**.**

Ans. to Q. No. 3 : True, they are widely accepted and applied in the field of education.

Ans. to Q. No. 4 : Law of exercise has two sub–parts:
a) Law of use and
b) Law of disuse.

Ans. to Q. No. 5 : Learning by imitation and learning by observation are the two different types of method of learning

Ans. to Q. No. 6 : Learning by doing or trial and error method method of learning is applicable to teach mathematics in a group of young children.

10.4.1 Theory of Connectionism

The famous psychologist E. L. Throndike (1974-1949) was the initiator of the theory of connectionisms. All learning, according to Throndike, is the formation of bonds or connection between Stimulus - Response (S-R) The process of forming connections depends on a number of variables which operate in the environment and the organism. Thus the environment provides the stimulus and the individuals make responses or show reaction. According to this theory learning is possible if a bond can be established between these two factors i.e., S and R through repetition. Throndike introduced the concept of reward in learning. This is also known as reinforcement. Responses which are followed by satisfaction or pleasure are reinforced and the organism is encouraged to repeat the responses again and again. As such, its connection strength increase and learning takes place. This theory is also known as the reinforcement theory of learning.

Throndike Experiment : Throndike conducted several experiments on animal learning with cats. His experiments have broad and important implications for human learning. Certain definite principles have emerged out of his studies which characterize quite newly the way in which children and adults form new association and learn new things.

Throndike's experiments on cat in the puzzle box at the beginning of the 20th century bring out learning. These experiments are widely known and often quoted in psychology of learning. The experimental set up was very simple. A hungry cat was locked in a puzzle box. A fish was kept outside the box and the smell of the fish motivates the cat to try to come out the box. The cat had to pull a string to come out of the box. In its attempt to come outside to get the food, the cat makes random movements of jumping, dashing, running, squeezing etc. Accidentally, the cat pulled the string and the door of the box opened, came out and ate the food. Throndike

Gestalt Psychology and cognitive psychology. These Theories emphasise the role of purpose, insight, understanding, reasoning, memory and other cognitive factors in the process of learning. Theory of learning by insight is included in this category.

Let us now discuss both these behaviouristic and cognitive theories of learning.

10.4 BEHAVIOURISTIC THEORIES OF LEARNING

The Behaviourists interprets learning as a connection between stimulus and response. This approach to learning emphasises that behaviour begins with reflexes, i.e., natural responses and new behaviours result from the acquisition and new bonds of stimulus and response through experiences. Behaviourism has its root in the Associationnistic School of psychology. The behaviouristic approach has the following important characteristics:

- Behaviourists believe in the objective of study of behaviour. Both animals and human beings can be studied objectively.
- Learning brings about changes in behaviour
- Its chief emphasis is on environment. Learning takes place if environment conditions are arranged appropriately to generate changes. Learning is the result of continual interaction of the individual with the environment.
- Conditioning is the key to understanding behaviour, which is composed of stimulus and response links and can be successfully analyzed by the objective scientific method.
- Behaviourists believe that one unit of knowledge gets associated with a new unit of knowledge by virtue of similarity, contrast or contiguity.

Ans. to Q. No. 7 : Learning by observation is based on maxims of teaching.

Ans. to Q. No. 8 : Law of readiness, Law of exercise and Law of effect are the three major laws of learning

Ans. to Q. No. 9 : Law of Use is applied when a modifiable connection is made between a situation and a response keeping other things equal, the strength of that connect is increased.

Ans. to Q. No. 10 : True, Children learn to talk , develop habits by imitating their parents and elders .

Ans. to Q. No. 11 : The two types of imitation are Unconscious or Spontaneous imitation and Conscious or Deliberate imitation.

Ans. to Q. No. 12 : Learning by imitation is generally used for young children because Children learn more by imitating than by understanding.



9.9 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q.1. What is learning?

Q.2. How do you linked learning with the process of maturation?

Q.3. What are the three major laws of learning?

Q.4. What do you mean by Law of Exercise? Explain

Q.5. What is meant by Trial and Error Method of learning?

Q.6. What is meant by Learning by Imitaion?

Q.7. What is Learning by Observation?

B) Long Questions (Answer each question in about 300-500 words)

Q.1. What is learning? Discuss its nature with examples.

Q.2. What is trial and error method of learning? Discuss its educational implications.

Q.3. Discuss the different laws of learning with its educational implications.

Q.4. Discuss various methods of learning. Which one is commonly followed by the young children?

Q.5. What are the educational implications of unconscious and conscious imitation of learning? Discuss

Q.6. Discuss about the educational implications of learning by observation.

UNIT 10 : THEORIES OF LEARNING

UNIT STRUCTURE

10.1 Learning Objectives
10.2 Introduction
10.3 Theories of Learning
10.4 Behavoiouristic Theories in Learning
  10.4.1 Theory of Connectionism
  10.4.2 Theory of Classical Conditioning
  10.4.3 Theory of Operant Conditioning
10.5 Limitations of Behaviouristic Approach
10.6 Cognitive Theory in Learning
  10.6.1 Theory of Learning by Insight
10.7 Limitations of Cognitive Approach
10.8 Let Us Sum up
10.9 Further Reading
10.10 Answers to check your progress
10.11 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit you will be able to

- explain the behaviouristic approach to learning.
- illustrate the theory of connectionism.
- discuss the classical conditioning and operant conditioning theory of learning.
- explain the cognitive approach to learning.
- describe the theory of learning by insight and
- discuss educational implications and limitations of the behaviouristic and cognitive approach to learning.

10.2 INTRODUCTION

The previous unit has acquainted you with the meaning, nature, methods and laws of learning. This acquaintance will help you in understanding the mechanism behind human learning, which is a vital question for psychology and education. Psychologists have attempted to interpret how people and animal learn through various theories. Theory gives us systematized information of an area of knowledge. It serves as a guideline to conduct further researches in the area and produce new facts. A learning theory is an attempt to describe how people and animals learn. It also describes and explains the conditions under which learning does and does not take place. Learning theories are mainly concerned with the modes operandi, procedure, style or techniques of learning which can be applied to all learning tasks. Theories that appeared during the twentieth century have been supported by experimentation.

In this unit we will study the various theories of learning. While dealing with the various theories we will study the elements of behaviouristic and cognitive approaches to learning which have emerged in the recent years. The characteristics and limitations of each approach have been discussed in this unit along with this educational implications.

10.3 THEORY OF LEARNING

Learning theories may be broadly classified under two different heads:

i) Connectionism or Behaviouristic Theories, and

ii) Cognitive or field theories.

i) Connectionism or Behaviouristic Theories belongs to the school of behavoiurism. “Behaviourism” is a term coined by J. B. Watson (1925). The Behaviourist described learning in terms of connection or association between stimulus and response under this category we may include Thorndike’s Theory of connectionism, Ivan P. Pavlov’s classical conditioning and B.F. Skinner’s Operant Conditioning.

ii) Cognitive or field Theories of learning belong to the school of