M.A. (Education) 2nd Semester **Course Code: EDUCC 106**

Course Type – Core

PSYCHOLOGY OF LEARNING

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SYLLABUS

Course Type / Nature: Core

Course Code: EDUCC106

Course Title: PSYCHOLOGY OF LEARNING

Credits = 4 {Marks = 100 (70 + 30)}

Course Objectives

To enable the learners to;

- Understand the concept and process of learning
- Understand the factors affecting learner's environment and learning
- Understand learning theories and their educational implications
- Understand the concept of transfer of learning and importance of its theories in teaching and learning process
- Understand the concept of memory its role in learning process.
- Understand the concept of forgetting and different techniques to overcome forgetting
- Understand the concept of motivation and techniques how to enhance motivation.

INSTRUCTIONS FOR THE PAPER SETTER AND CANDIDATES

The question paper for ESE will carry a total of 70 marks and consist of five sections: A, B, C, D & E. Section A will consist of 6 objective type questions (MCQ, True/False, Completion type) carrying one mark each and 4 short answer type questions carrying 2 marks each which will cover the entire syllabus uniformly. Sections B, C, D & E will have two long answer type questions from the respective Units 1, 2, 3 & 4 of the syllabus & carry 14 marks each. The long answer type questions may contain subparts carrying different marks. The marks for each sub-part and required word limit will be shown against it. Section A of the question paper will be compulsory and the candidates are required to attempt one question (and/or its sub-parts) each from the sections B, C, D and E of the question paper. Answers to short questions should be completed in around 80 to 100 words each. Answers to long answer type question should be completed in around 800 words.

Sessional Work / Activities

Marks = 5 (under CCA Component)

1984A candidate is required to undertake any one of the following activities and submit a detailed report to the concerned teacher / PCP Coordinator. The activity will carry 5 marks:

1. Conducting case study on one student who has difficulties in learning in primary years.

2. Analysis of a case of maladjusted adolescent learner.
3. Preparation of learners profile based on cognitive and non-cognitive characteristics in order to depict individual differences at primary or secondary stage.
4. Any other activity / activities that the concerned course teacher may think appropriate can be allotted during PCP to the candidates.

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CONTENTS

UNIT- I

Learning: Concept, Characteristics and Nature of Learning

Structure of the Unit:

1.1 Introduction

Dear learner, this unit deals with the meaning, nature and characteristics of learning. Learning is a process. It is a process of change, growth and development of behavior. Learning is any activity means-performing some activities simultaneously and consequently acquiring some experience. The total experience is made up of the experiences gained from many activities and sub activities. Hence learning is a comprehensive process. The learning process continue throughout life.

1.2 Learning Objectives

After completing the unit you will be able to:

- Understand the meaning of learning.
- Characteristics of learning

- Describe the nature of learning.

1.3 CONCEPT OF LEARNING

Learning has been defined by the educational psychologists in different ways and meanings. It has been explained as a quantitative increase in knowledge, memorizing of facts, skills and method can be retained and used as necessary.

Here is the scientific definition of learning: A relatively permanent change in behavior due to experience. It seems obvious that a person's behavior must change if they learn something but we don't want to include *all* changes in behavior in our definition. First, the change must be "relatively permanent." When a person gets hungry, they may start to eat. When they are full, they will usually stop. These are the changes in behavior, but we don't want to say that the person has "learned" to eat or stop eating several times each day. There are many temporary changes in behavior such as eating, sleeping, and getting angry, that don't qualify as learned behaviors. Since these are not "relatively permanent "changes, our definition excludes them.

1.4 Meaning and Definitions of learning

Learning, in psychology, "a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning" (Ambrose et al,2010, p.3). The change in the learner may happen at the level of knowledge, attitude or behavior.

- **Gates and others** "Learning is the modification of behavior through experience"
- **Pavlov "** learning is habit formation resulting from conditioning"
- **Crow and Crow** "Learning is the acquisition of habits, knowledge and attitudes. It involves new ways of doing things, and it operates in an individual's attempt to overcome obstacles or to adjust to new situations."
- **Skinner** "Learning is the process of progressive behavior adaptation."
- **Munn** "To learn is to modify behavior and experience."
- **M. L. Bigge** "Learning may be considered as change in insights, behavior, perception, motivation or a combination of these."

The above definitions emphasize four attributes of learning...

• As Process: the first is that learning is permanent change in behavior.

• It does not include change due to illness, fatigue, maturation and use of intoxicant.
• The learning is not directly observable but manifests in the activities of the individual.
• Learning depends on practice and experience.

1.5 Characteristics of Learning

- **Learning is the change in behavior:** The result of learning process is obtained in terms of behavior changes. What ever the type of learning is, the result would be the same i.e. change in behavior. This change can be in any form. But in the process of learning, focus should be on the changes in desirable direction and desirable form, i.e. these changes should occur in positive direction.
- **Learning is the continuous life long process**: The process of learning starts from mother's womb. After birth, the child acquires skill from experiences obtained from environment. Hence, learning goes on throughout life formally or informally and directly or indirectly. Learning is considered as a process, not as a product. During this process, knowledge, skills, habits, attitudes and aptitudes get developed during this process. Learning results into the storage of knowledge and this storage continue throughout life.
- **Learning is universal process:** learning is considered as a universal process. Because learning is not the right of any one nation, caste or religion. It is the meant for all, for every place, for every caste and for every religion. Every person has full capacity to learn. Opportunities are needed. Whatever the differences in learning are visible, must be due to the differences in opportunities.
- **Learning is purposive and goal directed:** learning is always purposive and goal oriented. If we don't have any objective and goal, then the process of learning will not show any effect. Through the process of learning, we can move towards pre-determined goal.as we learn, we moves towards our goal**.**
- **Learning is the process of development:** learning can occur in any direction desirable or undesirable. But we are concerned with the individual's development undesirable direction. If a child learn stealing or pick-pocketing, it is learning undoubtedly, but it is undesirable, Society would not opt for this type of learning. Hence, learning is always viewed as development.
- **Learning is the product of active responding** to the stimuli in teaching learning environment.
- **Learning is the fundamental process of life:** Learning has been considered the fundamental process of life. Without this neither the entity of life is possible, nor any type of progress is possible. It functions as the basis for the progress of the civilization.
- **Learning is determined by conscious as well as unconscious Experiences:** learning is determined by conscious and unconscious experiences. It is acquired by the learner deliberately or unknowingly.

- **Learning is transferable**: The learning acquired in one situation is capable of transfer to some situation. The knowledge acquired in one situation proves helpful in acquiring the knowledge in other situation. This is known as transfer of learning. Sometimes the previously acquired knowledge creates obstacles in the way of acquiring new knowledge.
- **Learning is new organization of experiences**: The basis of learning is the acquisition of new experiences. Their behavior change as a result of new experiences. New experiences acquired on the basis of old or past experiences and hence, a new system evolves.
- **Learning is intellectual**: Learning cannot be considered as a mechanical process. It is an intellectual task. Nothing can be learnt in the absence of some thinking. Also, success is not possible in any task without any thinking. Hence, the task can be learnt very rapidly in which intelligence is used.
- **Learning is creative and Active**: The process of learning is always active, i.e. the learner himself participates in learning process. Only then he would be able to learn something. Hence, learning is active. Similarly, learning is considered to be as creative.

Self-Check Exercise1

1. According to Pavlov “Learning is the…….
   a) Change in behavior
   b) Modification of behavior
   c) Continuous process
   d) Habit formation
2. Learning involves growth and……

1.6 Nature of Learning as a Process

- **Learning is an adjustment:** Learning helps the individual to adjust himself adequately to the new situation. Most learning in the children consists in modifying, adapting and developing their original nature. In later life the individuals acquire new forms of behavior.

- **Learning is improvement:** Learning is often considered as a process of improvement with practice or training. We learn many things, which help us to improve our performance.

- **Learning is through experiences:** Learning always involves some kind of experience, direct or indirect(vicarious).

- **Learning brings behavioral changes:** Whatever the direction of the changes may be, learning brings progressive changes in the behavioral of an individual. That is why he is able to adjust to changing situations.

- **Learning is active:** Learning does not take place without a purpose and self-activity. In any teaching learning process, the activity of the learner counts more than the activity of a teacher.
- **Learning is purposive:** when the aim and purpose of learning is clear, an individual learns immediately. It is the purpose or goal, which determines what, the learner sees in the learning situations and how he acts. If there is no purpose or goal learning can hardly be seen.
- **Learning is comprehensive:** Learning is comprehensive because it covers all the aspect of the learner through acquiring new knowledge, behavior, skill, values, attitudes and preferences.

Self-Check Exercise-2

1. Learning is the acquisition of …….
   a) knowledge
   b) Behavior
   c) Skills
   d) All of above
2. Vicarious learning is direct learning……..(Yes/No)

1.7 Summary

Dear learner, in this unit we have gone through concept of learning its meaning and we have discussed some definitions of learning and strategies for concept learning. Characteristics of learning and its nature.

1.8 Glossary:

***1. Pervasive*:** existing in all parts of a place or things; spreading gradually to affect all parts of a place or things.

***2. Vicarious learning*:** learning from others experiences.

1.9 Answer to self-check Exercise

Self-Check Exercise-1

Ans 1. Habit formation.
Ans 2. Development

Self-Check Exercise-2

Ans 3. All of the above
Ans 4. No

1.10 References and Suggested Readings:

- Skinner, B.F (1953). *Science And Human Behaviour*. New York: Macmillan.
- Watson, J.B. (1913*). Psychology As The Behaviuoristic* view it. Psychology review,20(2),158-177.
- Piaget, j. (1952). *The Origins Of Intelligence In Children*. New York: international university press.
- Vygotsky, L. S.(1978). *Mind in society* : *The Development Of Higher Psychological Process. Cambridge,* Ma: Harvad University Press.
- Dewey, J.(1938*). Experience And Education*. New York: Macmillan.

1.11 Terminal questions:

Q.1 Explain the concept of learning in detail.

Q.2 What is nature of learning?

Q3. Explain characteristics of learning in detail.

=====X=======X=====

UNIT– 2

Learning: Principle Of Learning And Factors Affecting Learning

Structure of the Unit:

2.1 Introduction

Dear learner, this lesson deals with the principles, factors of learning. Psychology there are so many principles that we need to understand for the growth and development of the child. Factors that affect learning are need to understand for the better understanding of the learner. Hence this unit contains the topic related to principles and different factors that affect learning.

2.2 Learning Objectives

After completing the unit you will be able to:

- Understand Principles of the learning
- Factors Affecting learning
- Influences of different factors

2.3 Principles of learning

1. Principle of Association

Learning is a growth like a continuous process. The kind of learning that take place is the result of the kind of experience we have. Previous learning and experience always sets the stage for subsequent learning. New learning may be associated with previous successful and satisfying responses. For example, if the learner has got scholarship in previous class he/she may be motivated to study hard to get scholarship again.

2. Principle of Disassociation

Learning is affected by emotions. The most effective way of eliminating an undesirable response is to set up a desirable substitute that must be more satisfying than the original reactions. For example, when planting a crop in lines gives better yield, the farmer may be advised not to practice broadcasting.

3. Principle of meaningful and clear Objectives Learning is more effective when it is purposeful. The learning must be useful to the learners. Objectives must be clear and

meaningful to the learners. What is to be learnt must be important to a relatively large number of participants in the group and must be attainable.

4. Principle of Learning by Doing

Learning is an active process on the part of the learners. The instructor can create a situation and stimulate a person to learn. The door to learning is “locked on the inside” and unless the learner opens the door himself, learning cannot take place. Activities appropriate to the specific learning must be used. For example, conducting dissection of earthworm in laboratory by the students provides opportunity of self-activity, that is, learning by doing. This makes learning effective and long lasting.

5. Principle of Motivation

Motivation is the core of all actions. Whether a person succeeds, fails or leads depends upon motivation. Motivation is the driving force behind all the actions of an individual. Motivation is one of the most important variables which affect the learning process of the individual to a large extent. It is that invisible force which ignites the mind and sets one’s heart with feelings of zeal and zest and propels one into action. It can persuade, convince, inspire, encourage and lead one into action, changing one’s vision and life. Thus, proper motivation should be given to the students before teaching a lesson.

6.Principle of Practice

Practice makes a man perfect. When learner actually practices what they have read, heard, or seen, they gain confidence and makes very less errors. Active involvement through practice, therefore, should be made part of the learning process.

7.Principle of Readiness

Principle of readiness is a most important principle of learning. Learning takes place more quickly, and more effectively when one is ready to learn.

8. Principle of Reward

Reward or reinforcement is anything that strengthens the desired response. It could be verbal praise, a good grade or a feeling of increased accomplishment or satisfaction. Behaviors that are positively reinforced are encouraged and sustained. When the behavior is punished, it is temporarily suppressed but is unlikely to be extinguished.

9. Principle of Transfer of Learning

It does not make much sense to perfect a skill in the classroom and then find that you cannot successfully transfer it to the job. Therefore, learning should be designed to foster transferability. For example learning of mathematics is helpful to solve the numerical problem of physics and chemistry.

10. Principle of Feedback

Learning is facilitated when the learners are provided with knowledge of progress of learning. A regular and positive feedback always leads to enhance learning.

11. Principle of Individual Differences

No two individuals are alike.in this perspective learning abilities varies widely among individuals. The level of communication and the level of understandability of the subject matter taught must be in line with the learner's ability.

Self check exercise– 1

1. Reward related to:

a) Punishment

b) Reinforcement

c) Both

d) None

2. which Principle said that new learning may be linked with previous satisfactory learning?

a) Practice

b) Disassociation

c) Association

d) Motivation

2.4 Factors Affecting Learning: There are several factors affecting learning encompassing psychological, physiological, and environmental. Here are some key factors that influence learning:

1. Psychological Factors:
2. Physiological Factors:
3. Environmental Factors:

(1).Psychological factors:

(a). **Maturation:** learning depends upon the maturation. If the Individual is matured to learn a particular activity, he will learn effectively. If the individual is not mature, learning will not be effective.

(b). **Readiness**: If the learner is ready to learn a particular activity, he will learn better and quickly.

(c). **Attitude and aptitude**: Favourable attitude towards the job or work makes one more active and enthusiastic and favors learning. Negative attitude of the pupil delays learning. Suitable aptitude of the person helps in quick and effective learning.

(d**). Motivation**: Motivation has a direct impact on how individual learns. Motivation leads to increased efforts and energy. Motives like (1) rewards, (2) success, (3) competition, (4) level of aspiration, (5) punishment and powerful incentives to the learner for better learning.

(e). **Memory**: A learner who has good memory will learn quickly and effectively.

(f). **Mental health**: A child is mentally healthy i.e., free from frustration, conflicts, anxieties and worries will learn better than the child who is not mentally healthy.

(g). **Intelligence:** Intelligence of the learner is also positively related to the learning. It facilitates effective learning. The greater the intelligence of the person, the more effective may be his learning.

(h**) Attention**: Another factor, which affects learning, is attention. Attention is always present in conscious life and is common to all types of mental activity. It is the characteristics of all conscious life. Every activity of yours is based on interest and attention. You can succeed in achieving your goals only when your attention is directed towards learning.

(i**) Perception**: If you are able to perceive a thing correctly then right learning will take place. Learning will proceed in a proper direction due to correct precepts. Both sensation and perception play an important role in you learning. Sensations are the first impression so it has to be absolutely clear. Sensations give rise to perception and on

that basis you get a proper understanding of an object, idea or an experience. Learning depends upon accurate and efficient perception and perception depends upon the sensation, which depends on the normal functioning of the sense organs. Thus perception is important for proper learning and understanding.

(2) ***Physiological Factors***:

(a) **Physical Fatigue**: Fatigue is the state of reduced interest and desire, and this constitutes psychological explanation. It is the state or condition in which the nerves do not react and mind becomes lax and inert. Evidently, fatigue is neither purely physical nor exclusively mental. It is a psychological state of exhaustion. Reduce efficiency or capacity of body as well as mind is implicit in this phenomenon.

(b) **Food and Nutrition**: Poor food and nutrition have an adverse effect on learning while rich food and nutrition contribute towards better learning.

(c**) Good Physical health**: Good physical health is a pre-requisite for effective learning. Sound physical health provides enthusiasm, vigor and vitality for better learning.

(d) **Age**: Research studies have shown that learning efficiency increases with age to certain extent after which it remains stationary for some time and ultimately tend to decrease during old age. Thus, we find that children are speedier and more efficient at learning task as they grow older.

(3) Environmental factors:

(a**) Learner Beliefs**: Learners always take interest in the things related to their religious ideas and environmental believes. The things which are against the beliefs of the learner are not taken seriously by him and do not take interest to learn them.

(b**) Social Expectation**: The term social expectation refers to the general standards of behavior that individuals who live within a society are expected to uphold.

(c) **Family Background**: Learner inherits many things from his family. Family background effects on the learning of a person. A student belong to a literate family has different learning trend as compared to the students who belong to illiterate family.

Self- check exercise– 2

1. How many factors are there which influence learning?

    a) Two

    b) Three

    c) One

d) Four

2. which one is not a psychological factor of learning?

a) intelligence

b) Attention

c) Age

d) Memory

2.5 Summary

Dear learner, in this unit we have gone through Principles of learning and factors affecting learning meaning which includes physiological, psychological and environmental factors.

2.6Glossary*:*

Vigor**:** a state of active physical and mental strength

Vitality: as a fully alive mental health with a complete state of energy and life.

2.7 Answer to self-check Exercise

Self-Check Exercise-1

Ans 1. Reinforcement

Ans 2. Association

Self-Check Exercise-2

Ans 3. Three

Ans 4. Age

2.8 References and Suggested Readings:

- Bransford, J.D, Brown, A.L., and cocking, R.R. (Eds). (2000). *How people learn: Brain, Mind, Experiences, and School: Expanded Edition*. Washington, DC: National Academy Press.
- Gagne, R. M. (1985). *The conditions of learning and theory of instruction* (4th ed.). New York : Holt, Rinehart, and Winston.
- Schunk, D. H. (2012). *Learning Theories: An Educational perspective* (13th ed.). Boston: Pearson.
- Vygotsky, L. S. (1978*). Mind In Society; The Development of Higher Psychological Processes.* Cambridge, MA: Havard University Press.
- Erikson, E. H. (1968). *Identity: youth and crisis.* New York: W.W. Norton and company.

2.9 Terminal Questions

Q.1 Explain the principles of learning in detail.

Q.2 Describe different factors affecting learning.

=====X=======X=====

UNIT–3

Learning Theories: Classical Conditioning And Operant Conditioning And Their Implications.

Structure of the Unit:

3.1 Introduction

Learning as a process focuses on what happens when the learning takes place. Explanations of what happens constitute **learning theories**. A **learning theory** is an attempt to describe how people and animals learn; thereby helping us understands the inherently complex process of learning. **Learning theories** have two chief values according to Hill (2002). One is in providing us with vocabulary and a conceptual framework for interpreting the examples of learning that we observe. The other is in suggesting where to look for solutions to practical problems. The theories do not give us solutions, but they do direct our attention to those variables that are crucial in finding solutions.

3.2 Learning Objectives

After completing the unit you will be able to:

- Understand Concept of Classical Conditioning
- Different Principles of Classical Conditioning
- Concept of Operant Conditioning
- Types of Reinforcement Schedule

- Implications of the Theories

3.3 Learning theories and their implications:

3.3.1 Classical Conditioning Theory by Pavlov

Classical conditioning is a term used to describe learning which has been acquired through experience. One of the best-known examples of classical conditioning can be found with the Russian psychologist Ivan Pavlov and his experiments on dogs.

In these experiments, Pavlov trained his dogs to salivate when they heard a bell ring. In order to do this he first showed them food, the sight of which caused them to salivate. Later Pavlov would ring a bell every time he would bring the food out, until eventually, he could get the dogs to salivate just by ringing the bell and without giving the dogs any food.

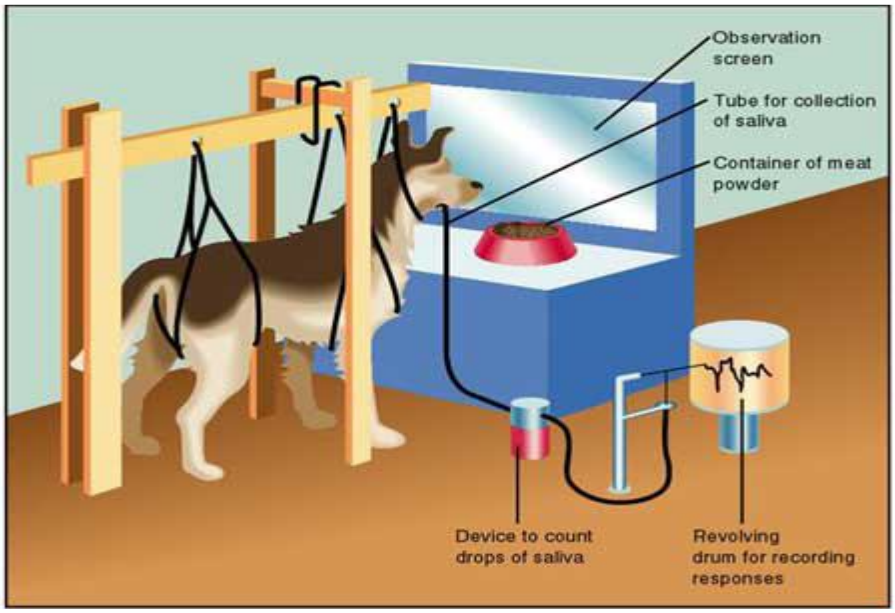


Fig. 1.1

In this simple but ingenious experiment, Pavlov showed how a reflex (salivation, a natural bodily response) could become conditioned (modified) to an external stimulus (the bell) thereby creating a conditioned reflex/response.

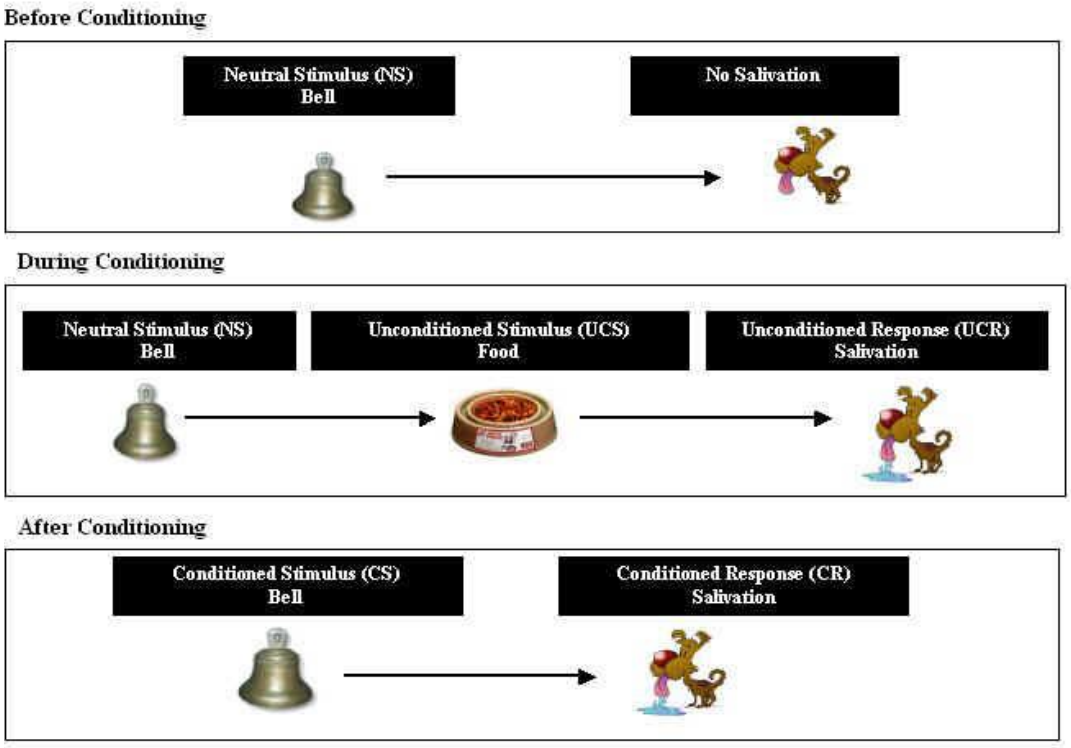


Fig. 1.2

Components Involved In Classical Conditioning

We can gain a better understanding of classical conditioning by looking at the various components involved in his experiment;

• The unconditioned stimulus.(UCS)

• The conditioned stimulus.(CS)

• The unconditioned reflex/response.(UCR)

• The conditioned reflex/response. (CR)

So let's look at each of these classical conditioning components in more detail now.

The Unconditioned Stimulus (food): (UCS) An unconditioned stimulus is anything, which can evoke a response without prior learning or conditioning.

For example, when a dog eats some food it causes his mouth to salivate. Therefore the food is an unconditioned stimulus, because it causes a reflex response (salivation) automatically and without the dog having to learn how to salivate.

Unconditioned Stimulus – This causes an automatic reflex response.

Conditioned Stimulus (bell): (CS) The conditioned stimulus is created by learning, and therefore does not create a response without prior conditioning.

For example, when Pavlov rang a bell and caused the dogs to salivate, this was a conditioned stimulus because the dogs learnt to associate the bell with food. If they had not learnt to associate the bell with food, they would not have salivated when the bell was rung.

Conditioned Stimulus – You need to learn first before it creates a response. It is an acquired power to change something.

Unconditioned Reflex/Response (salivation): (UCR) An unconditioned reflex is anything that happens automatically without you having to think about it, such as your mouth salivating when you eat. Unconditioned Reflex – Reflex that happens automatically and you did not have to learn how to do it.

Conditioned Reflex (salivation in response to bell): (CR) A conditioned reflex is a response which you have learnt to associate with something.

For example, the dogs salivated when Pavlov rang a bell, when previously (without conditioning) the bell would not cause the dogs to salivate.

Conditioned Reflex – A reflex that can be evoked in response to a conditioned stimulus (a previously neutral stimulus).

Basic concepts in classical conditioning:

There are several principles that are associated with classical conditioning, some of these are:

• **Extinction:** a conditioned response will disappear over time when the conditioned stimulus is no longer presented.

• **Spontaneous recovery:** sometimes there is the weak appearance of a previously extinguished response.

• **Stimulus generalization:** this is when individuals respond in this same way to experience stimuli. For example, all fuzzy animals scaring a young child instead of just a fuzzy cat.

• **Stimulus discrimination:** organisms can learn to discriminate between various stimuli.

• **Higher order conditioning:** this is when a neutral stimulus can cause the conditioned response sense if it had been associated with the conditioned stimulus.

Types of classical conditioning

- **Forward conditioning**: Learning is fastest in forward conditioning. During forward conditioning the onset of the conditioned stimulus (CS) precedes the onset of the unconditioned stimulus (US). Two common forms of forward conditioning are delay and trace conditioning.

- **Delay conditioning**: In delay, conditioning the conditioned stimulus(CS) is presented and is overlapped by the presentation of the unconditioned stimulus (US).

- **Trace conditioning**: During trace conditioning, the conditioned stimulus (CS) and US do not overlap. Instead, the conditioned stimulus (CS) is presented, a period is allowed to elapse during which no stimuli are presented, and then the unconditioned stimulus (US) is presented. The stimulus-free period is called the trace interval. It may also be called the conditioning interval.

- **Simultaneous conditioning**: During simultaneous conditioning, the conditioned stimulus (CS) and unconditioned stimulus (US) are presented and terminated at the same time.

- **Backward conditioning**: Backward conditioning occurs when a conditional stimulus (CS) immediately follows an unconditional stimulus (US). Unlike traditional conditioning models, in which the conditional stimulus (CS) precedes the unconditional stimulus (US), the conditional response (CR) tends to be inhibitory. This is because the conditional stimulus (CS) serves as a signal that the unconditional stimulus (US) has ended, rather than a reliable method of predicting the future occurrence of the unconditional stimulus (US).
- **Temporal conditioning**: The unconditioned stimulus (US) is presented at regularly timed intervals, and CR acquisition is dependent upon correct timing of the interval between unconditioned stimulus (US) presentations. The background, or context, can serve as the conditioned stimulus (CS) in this example.
- **Unpaired conditioning**: The conditioned stimulus (CS) and unconditioned stimulus (US) are not presented together. Usually they are presented as independent trials that are separated by a variable, or pseudo-random, interval. This procedure is used to study non-associative behavioral responses, such as sensitization.

Implications of Pavlov's Theory

- The theory believed that one must be able to practice and master a task effectively before embarking on another one. This means that a student needs to be able to respond to a particular stimulus (information) before he/she can be associated with a new one.
- Teachers should know how to motivate their students to learn. They should be versatile with various strategies that can enhance effective participation of the students in the teaching learning activities.

Most of the emotional responses can be learned through classical conditioning. A negative or positive response comes through the stimulus being paired with. For example, providing the necessary school material for primary school pupils will develop good feelings about school and learning in them, while, punishment will discourage them from attending the school.

Self -Check Exercise - 1

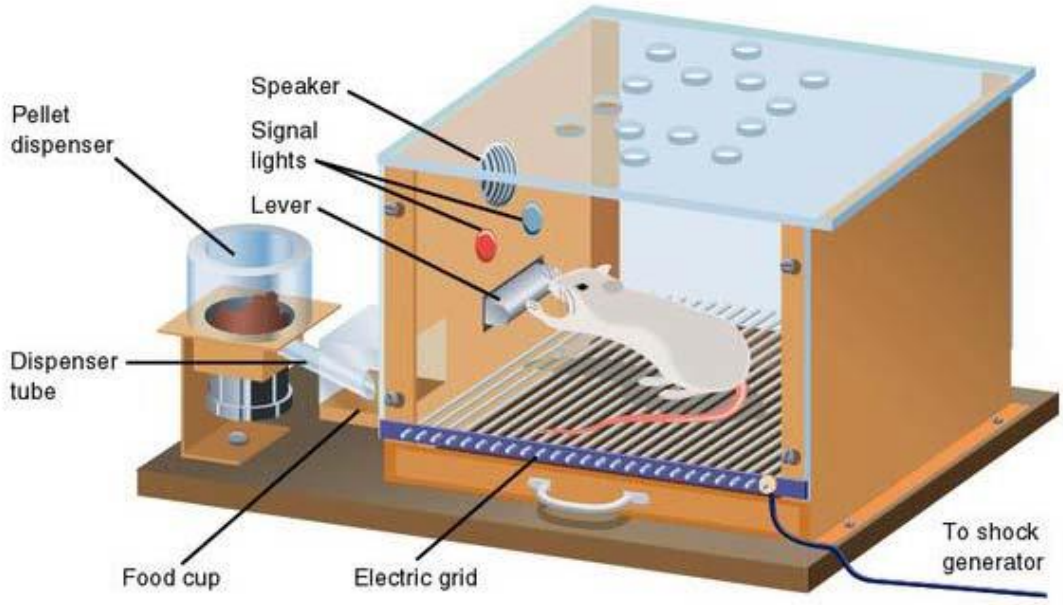
1. What is the Conditional Stimulus in the Experiment……?
    a) Bell
    b) Food
    c) Salivation
    d) None of the above
2. When the onset of the conditioned stimulus (CS) precedes the onset of the unconditioned stimulus (US) is called….
    a) Backward Conditioning
    b) Temporal Conditioning
    c) Forward conditioning
    d) Unpaired conditioning

3.3.2 Operant Conditioning by B.F.Skinner

Operant conditioning is a method of learning that occurs through rewards and punishments for behavior. Through operant conditioning, an association is made between a behavior and a consequence for that behavior.

Behaviorist B.F. Skinner coined the term operant conditioning, which is why it is also referred as Skinnerian conditioning. As a behaviorist, Skinner believed that internal thoughts and motivations could not be used to explain behavior. Instead, he suggested, we should look only at the external, observable causes of human behavior.

Skinner used the term *operant* to refer to any "active behavior that operates upon the environment to generate consequences" (1953). In other words, Skinner's theory explained how we acquire the range of learned behaviors we exhibit each and every day. Skinner is regarded as the father of Operant Conditioning, but his work was based on Thorndike’s law of effect. Skinner introduced a new term into the Law of Effect - Reinforcement. Behavior that is reinforced tends to be repeated (i.e. strengthened); behavior that is not reinforced tends to die out-or be extinguished (i.e. weakened). Skinner studied operant conditioning by conducting experiments using animals, which he placed in a “*Skinner Box*” which was similar to Thorndike’s puzzle box.



The Skinner box involved placing an animal (such as a rat or pigeon) into a sealed box with a lever that would release food when pressed. If food was released every time the rat pressed the lever, it would press it more and more because it learnt that doing so gives it food. Lever pressing is described as an operant behavior, because it is an action that results in a consequence. In other words, it operates on the environment and changes it in some way.
The food that is released as a result of pressing the lever is known as a reinforcer, because it causes the operant behavior (lever pressing) to increase. Food could also be described as a conditioned stimulus because it causes an effect to occur.

Skinner identified three types of responses or operant that can follow behavior.

• **Neutral Operants:** Responses from the environment that neither increase nor decrease the probability of a behavior being repeated.

• **Reinforcers are** any event that strengthens or increases the behavior it follows. There are two kinds of reinforcers.

Positive reinforcers are favorable events or outcomes that are presented after the behavior. In situations that reflect positive reinforcement, a response or behavior is strengthened by the addition of something, such as praise or a direct reward.

Negative reinforcers involve the removal of an unfavorable events or outcomes after the display of a behavior. In these situations, a response is strengthened by the removal of something considered unpleasant. In both of these cases of reinforcement, the behavior increases.

• **Punishment** is the presentation of an adverse event or outcome that causes a decrease in the behavior it follows. Punishment weakens behavior. There are two kinds of punishment:

Positive punishment, sometimes referred to as punishment by application, involves the presentation of an unfavorable event or outcome in order to weaken the response it follows.

Negative punishment, also known as punishment by removal, occurs when an favorable event or outcome is removed after a behavior occurs.

In both of these cases of punishment, the behavior decreases.

Schedules of Reinforcement:

According to Skinner, various schedules of reinforcement influence learning and motivation. There are two types of reinforcement schedules:

1. **Continuous reinforcement schedules:** In continuous reinforcement schedule the responses produces reinforcement every time it occurs. For example we can praise a child each time he adds two numbers correctly.
2. **Partial reinforcement schedule:** In partial reinforcement schedule some but not all responses are reinforced. There are four types of schedules of partial reinforcement:
   (a) Fixed Ratio Schedule: When reinforcement is given after a fixed number of responses, it is called fixed ratio schedule. For example a child may be praised for making five correct responses.
   (b) Variable Ratio Schedule: When reinforcement is given after a varying number of responses, it is called variable ratio schedule.
   (c) Fixed Interval Schedule: When reinforcement is given after a fixed interval of time, every three minutes or every five minutes, it is called fixed interval schedule reinforcement.
   (d) Variable Interval Schedule: When reinforcement is given at varying intervals of time, it is called variables intervals schedule reinforcement.

Implications of the theory

- **Conditioning study behaviorist:** Teaching is the arrangement of contingencies of reinforcement, which expedite learning. For effective teaching teacher should arranged effective contingencies of reinforcement. Example: For Self learning of a student teacher should reinforce student behavior through variety of incentives such as prize, medal, smile, praise, affectionate patting on the back or by giving higher marks.

- **Conditioning and classroom behavior**: During learning process child acquire unpleasant experiences also. This unpleasantness becomes conditioned to the teacher, subject and the classroom and learner dislikes the subject and a teacher. Suitable behavioral contingencies, atmosphere of recognition, acceptance, affection and esteem helps child in approaching teacher and the subject. If student is not serious in study, teacher make use of negative reinforcement like showing negligence, criticizing student etc. but if student is serious in study, teacher make use of positive reinforcement like prize, medal, praise and smile.

- **Managing Problem Behavior**: Two types of behavior is seen in the classroom viz undesired behavior and problematic behavior. Operant conditioning is a behavior therapy technique that shape students behavior. For this teacher should admit positive contingencies like praise, encouragement etc. for learning. One should not admit negative contingencies. Example punishment (student will run away from the dull and dreary classes – escape stimulation.
- **Dealing with anxieties through conditioning**: Through conditioning fear, anxieties, prejudices, attitudes, perceptual meaning develops. Examples of anxiety are signals on the road, siren blown during wartime, child receiving painful injection from a doctor. Anxiety is a generalized fear response. To break the habits of fear, a teacher should use desensitization techniques. Initially teacher should provide very weak form of conditioned stimulus.
- Gradually the strength of stimulus should be increased.
- **Conditioning group behavior:** Conditioning makes entire group learn and complete change in behavior is seen due to reinforcement. It breaks undesired and unsocial behavior too. Example: Putting questions or telling lie to teachers will make teachers annoyed in such circumstances students learn to keep mum in the class. Asking questions, active participation in class discussion will make the teacher feel happy – interaction will increase and teaching learning process becomes more effective.
- **Conditioning and Cognitive Processes:** Reinforcement is given in different form, for the progress of knowledge and in the feedback form. When response is correct, positive reinforcement is given. Example: A student who stands first in the class in the month of January is rewarded in the month of December. To overcome this Programme instruction is used. In this subject matter is broken down into steps. Organizing in logical sequence helps in learning. Each step is build upon the preceding step. Progress is seen in the process of learning. Immediate reinforcement is given at each step.

  Shaping Complex Behavior: Complex behavior exists in form of a chain of small behavior. Control is required for such kind of behavior. This extended form of learning is shaping technique. Smallest Behavior is controlled at initial stage. On behalf of different contingencies, next order of chain of behaviors is controlled.

Example: Vocabulary in English. Teaching spelling is mainly a process of shaping complex form of behavior.

Self -Check Exercise - 2

1. Which law is the base of operant conditioning is……?
   A) Law Of Exercise
   B) Law Of Practice
   C) Law Of Effect
   D) None Of The Above
2. Which Reinforcement schedule is the best schedule…?
   a) Continuous
   b) Fixed ratio
   c) Fixed Interval
   d) Variable Ratio

3.4 Summary: Dear learner, in this unit we have gone through detailed discussion of different theories of learning which includes classical conditioning and operant conditioning and their implication in the field of education.

3.5 Glossary

1. **Unconditioned stimulus (us):** a stimulus that automatically triggers a response without any prior learning.

2. **Unconditioned response (ur):** an unlearned naturally occurring response to the unconditioned stimulus.

3. **Conditioned stimulus (cs):** a previously neutral stimulus that, after becoming associated with the unconditioned stimulus, eventually triggers a conditioned response.

4. **Conditioned response (cs):** a learned response to the previously neutral stimulus that has become the conditioned stimulus.

5. **Reinforcement:** any event that strengthens or increases the likelihood of a behavior.

6. **Punishment:** any event that weakens or decreases the likelihood of the behavior.

3.6 Answer to self-check Exercise

Self-Check Exercise-1

Ans 1. Bell

Ans 2. Forward conditioning

Self-Check Exercise-2

Ans 3. Law of effect

Ans 4. Variable ratio

3.7 References and Suggested Readings:

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3.8 Terminal Questions:

Q.1 Explain theory of classical conditioning of in detail.
Q.2 Explain educational implications of classical conditioning in detail.
Q.3 what do understand the term Instrumental conditioning.

=====X=====X=====

UNIT – 4

Learning Theories: Trial and Error learning by Thorndike and Kurt Lewin's field theory of learning and their Implications.

Structure of the Unit:

4. 1 Introduction: It is universally known that all human beings learn by experiences. But how does learning take place? It is a debatable question that needs explaining. In order to find an appropriate answer to this questions, the psychologists have propounded many theories learning theories are conceptual frameworks describing how information is absorbed, processed, and retained during learning. Cognitive, emotional, and environmental influences, as well as prior experiences, all play apart in how understanding, or a world view, is acquired or changed and knowledge and skills retained.

4.2 Learning Objectives

After completing the unit you will be able to:

- Understand Concept of Trial and Error Learning
- Laws of Trail an Error learning

- Kurt Lewin's theory of learning
- Important concept of Field theory
- Implications of the Theories

4.3 Learning theories and their implications:

4.3.1 Trial and Error Theory of Learning

Edward Lee Thorndike (1874-1949) was the first American psychologist who put forward the Trial and Error Theory of learning. According to Thorndike, all learning takes place because of formation of bond or connection between stimulus and response. He further says that learning takes place through a process of approximation and correction. A person makes a number of trials, some responses do not give satisfaction to the individual but he goes on making further trials until he gets satisfactory responses. Thorndike conducted a number of experiments on animals to explain the process of learning. His most widely quoted experiment is with a cat placed in a puzzle box.

Fig. 1.3

Thorndike put a hungry cat in a puzzle box. The box had one door, which could be opened by manipulating a latch of the door. A fish was placed outside the box. The cat being hungry had the motivation of eating fish outside the box. However, the obstacle was the latch on the door. The cat made random movements inside the box indicating trial and error type of behavior biting at the box, scratching the box, walking around, pulling and jumping etc. to come out to get the food. Now in the course of her movements, the latch was manipulated accidently and the cat came out to get the food. Over a series of successive trials, the cat took shorter and shorter time, committed less number of errors, and was in a position to manipulate the latch as soon as it was put in the box and learnt the art of opening the door.

Thorndike concluded that it was only after many random trials that the cat was able to hit upon the solutions. He named it as Trial and Error Learning. An analysis of the learning behavior of the cat in the box shows that besides trial and error the principles of goal, motivation, explanation and reinforcement are involved in the process of learning by Trial and Error.

Essentials of trial and error learning:

1). Motivation: Motivation plays an important role in all types of learning. In trial and error learning there should be strong drive or motive otherwise the learner will not work so enthusiastically. Motivation may appear in the form of need, desire, purpose or goal.

2). Block or barriers: There should be some block or barriers. If there is no blockage, there is no need of trial and error. Efforts must be made to remove the block.

3). Random responses: Random responses are made to reach the goal. By random responses, we mean the meaningless actions which do not solve the problem. But these responses are helpful to us as they help in knowing that such and such activities are not to be repeated. In the other words of *Prof. Dashiell, "Random responses help us in an indirect manner."*

4). Elimination of wrong responses: There is progressive elimination of the superfluous, unsuccessful or wrong form of activity or responses.

5). Chance success: As a result of random movements, success comes by chance.

6). Establishment of right responses: In trial and error learning, there is integration and establishment of right responses by which goal is achieved. It is stage of errorless performance.

7). Achieving the goal: Achieving of goal or attaining some sort of satisfaction is a last step in trial and error learning. Achievement of goal or attaining satisfaction is very important for learning anything.

Primary Laws of Learning;

Based on Trial and Error Learning Theory, Thorndike gave certain laws of Learning. We shall discuss primary and secondary Laws of Learning in this section. These laws are:

- **Law of Readiness:** This law refers to the fact that learning takes place only when the learner is prepared to learn. No amount of efforts can make the child learn if the child is not ready to learn. The dictum that 'you can lead a horse to the pond but you can't make it drink water unless it feels thirsty' goes very well with this law. In other words, if the child is ready to learn, he/she learns more quickly, effectively and with greater satisfaction than if he/she is not ready to learn.

Educational Implications of Law of Readiness:

The law draws the attention of teacher to the motivation of the child. The teacher must consider the psycho-biological readiness of the students to ensure successful learning experiences. Curriculum / Learning experiences should be according to the mental level of maturity of the child. If this is not so, there will be poor comprehension and readiness may vanish.

- **Law of Exercise:** This law explains the role of practice in learning. According to this law, learning becomes efficient through practice or exercise. The dictum 'Practice makes a man perfect' goes very well with this law. This law is further split into two parts — Law of use and Law of disuse. The law of use means that a

connection between a stimulus and response is strengthened by its occurrence, its exercise or its use. In other words, the use of any response strengthens it, and makes it more prompt, easy and certain. Regarding the law of disuse, it is said that when a modifiable connection is not made between a stimulus and a response over a length of time, the strength of that connection is decreased. This means that any act that is not practiced for some time gradually decays. Anything that is not used exercised or practiced for a certain period tends to be forgotten or becomes weak in strength, efficiency and promptness.

Educational Implications:

Exercise occupies an important place in learning. Teacher must repeat, give sufficient drill in some subjects like mathematics, drawing, music or vocabulary for fixing material in the minds of the students. Thorndike later revised this law of exercise and accordingly it is accepted that practice does bring improvement in learning but it in itself is not sufficient.

Always practice must be followed by some reward or satisfaction to the learner. The learner must be motivated to learn.

- **Law of Effect:** This is most important of Thorndike's laws, which state that when a connection between stimulus and response is accompanied by satisfying state, its strength is increased. On the other hand, when a connection is accompanied by an annoying state of affairs, its strength is reduced or weakened. The saying 'nothing succeeds like success' goes very well with this law. In other words, the responses that produce satisfaction or comfort for the learner are strengthened and responses that produce annoyance or discomfort for the learner are weakened. Thorndike revised this law in 1930and according to this revision, he stated that reward strengthened the response but punishment did not always weaken the response. Then he placed more emphasis on the reward aspect than on the punishment aspect of Law of Effect.

Educational Implications:

This law signifies the use of reinforcement or feedback in learning. This implies that learning trials must be associated with satisfying consequences. The teacher can use rewards to strengthen certain responses and punishment to weaken others. However, the use of reward is more desirable than the use of punishment in school learning. The teacher for motivating the students for learning situations can exploit the use of reward.

The Secondary Laws of Learning: the followings are the secondary laws of learning as propounded by Thorndike:

1. Law of Multiple Responses: This law implies that if a new problematic situation presents itself before an individual he/ it respond to it in a variety of ways, the responses have been based on previous experiences, to solve the problem. These diverse

responses finally lead him on to the correct responses that solve his problem and he has a sense of satisfy action. Responses keep being provoked, one after the other, until success is achieved. This is known as a law of multiple responses.

Educational Implications:

The law of learning has greater importance in class. The teacher can create diverse situation in the class, and the students can respond to them in a variety of ways and learn on their own through trial and error.

2. Law of Attitude: The law of mental set is also known as the law of attitude How an organism will respond to a specific stimulus depends on the learner's attitude or mental set. One learner may be very keen to learn the task and other individual may have no interest in learning the task.

Educational Implications:

An incident may be a happy event for one person and quite discomforting for another person. This depends on the mental attitude of the learner. For the learning to take place, it is necessary for the learner to have positive mind set or attitude. The teacher should encourage students to take keen interest in different activities. The study material should be meaningful. The teacher can mentally prepare the students to learn, and he can develop in them a positive outlook.

3. Law of Partial Activity: An individual responds in a variety of ways in order to solve a problem, depending on theory of Trial and Error. In the process he selects the necessary responses and leaves out the unnecessary ones. According to the law of partial activity, the organism does not have to go into the depth of the problems. He perceives the main element of the problem and react according to them. This is what Thorndike named as the Law of partial activity.

Educational Implications:

The law of partial activity has great importance in the field of education. The students can be easily made to learn with the help of this law. This saves the time and labor.

4. Law of Associative Shifting: according to this law, a response evoked by a stimulus can be associated with any other possible stimulus. Thorndike in this context has said: "We can get any response from the learner of which he is capable, associated with any situation to which he is sensitive." He has expressed the conditioning response in the form of Law of Associative Shifting.

Educational Implications:

A teacher can successfully make use the law of associative shifting in his class. Good habits, aptitude and interest can be developed in the students with the help of this law.

5. Law of Recency: According to this law, new things are learnt rapidly, such as revision of the books before examination.

6. Law Of Belongingness: this law tells us that if the answer is relevant to the situation, then this relation can be memorized very rapidly.

7. Law Of Intensity Of Stimulus: according to this law if the stimulus is intense, his response would also be intense. If the stimulus is weak, then its response would also be weaker. In schools, the examination act as strong stimuli for students.

Self-check Exercise -1

1. According to Thorndike how many Primary Laws are there…….
   a) Two
   b) Three
   c) Four
2. The other name of Law of Effect is……
3. which one is not the element of trial and error learning…..?
   A) Motivation
   B) Goal
   C) Blockage
   D) Readiness

4.3.2 Kurt Lewin's Field Theory

Lewin, as a Neo-Gestaltist, transferred the **Gestalt model** to everyday situations. He was greatly influenced by Einstein and applied the idea of Einsteinian field physics to psychology. He proposed that human behavior is a function of both the person and the environment in which the behavior takes place, including the social parameters. He postulated that needs organize perception of the field and acting within the field. He understood a dynamic interaction of elements in the field. He believed behavior was purposeful and visualized the individual as existing in a field of forces which included +valence forces which attract people, and -valence forces which repel people. The blending of these fields produced and approach/avoidance dynamic. According to Lewin's theory, learning is essential to coping with these opposing force fields. Changes in valences and values are important to the learner's ability to deal with ongoing situations. Lewin also believed that a holistic investigation of human behavior and learning must include the environment in which the learning is taking place, including the psychological environment of the learner and others with whom he interacts.

Lewin's field theory lead to field research on human behavior. Lewin believed that it was possible to study social and psychological phenomena experimentally; as a result he conducted experiments in natural settings where he manipulated complex situational variables and observed the effects. This approach has been used widely in education as "action research" and has had a large impact on modern research.

First, it is an emphasis on a person's subjective perspective. Second, it incorporates the whole that is subjectively relevant to a person and that organizes behavior, goals, needs desires, intentions, tensions, forces, and cognitive processes into one system. Third, the elements composing this whole are interdependent and stand in dynamic mutual

relationship. Fourth, the key to the dynamic nature of this subjective whole is the idea of tension (energy) systems created by needs and discharged by achieving associated goals. Fifth, the dynamic psychological construct is that of inner-personal forces, which result from the intensity of personal needs and the valence of associated goals. Sixth, blocked goals can lead to increase in tension and a variety of behavioral and psychological consequences. And finally, inner-personal conflict is the result of opposing psychological forces.

According to this theory, the behavior (B) of an individual is a function of interacting person (P) in the total psychological environmental situation(E) i.e.

B = f(P,E)

B represents behavior

f is a function

P is the person

E is the total environment situation.

Important concept in Field Theory

1. Life space
2. Foreign Hull
3. Vector
4. Valence
5. Conflict
6. Barriers

LIFE SPACE:

Life space is a psychological representation of individual's environment.

The life space includes the persons himself and everything in his environment that influence his behavior.

It includes both the things of which he is consciously aware and the factors which influence him even though he is unconscious of them.

An object which exists, but of which the person is not aware and which does not influence him would not be a factor of his life space.

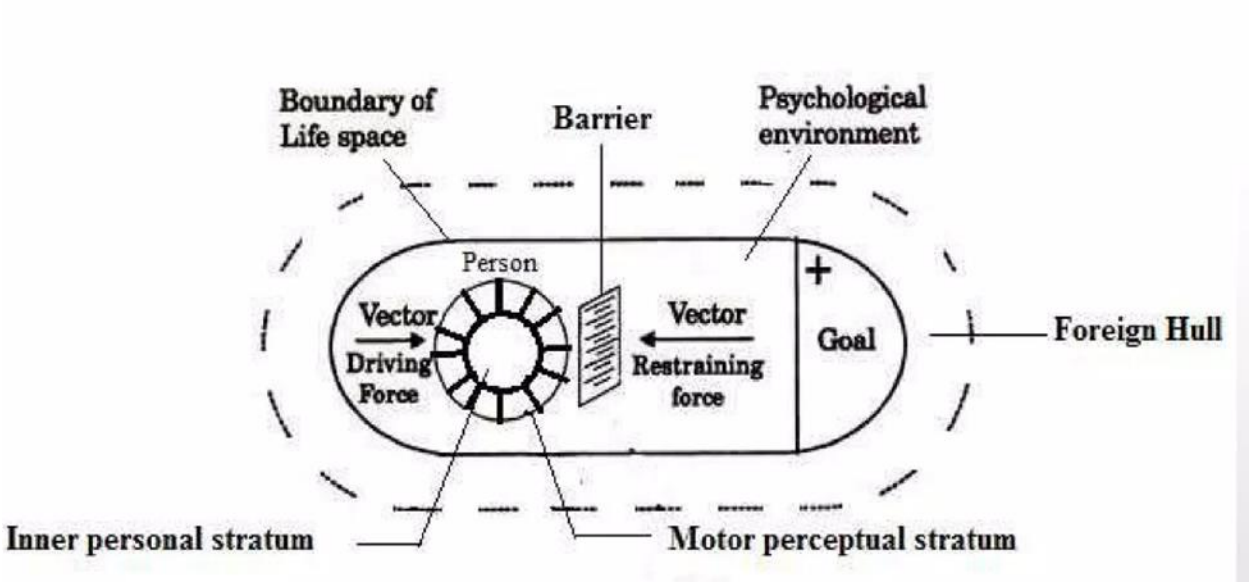
Similarly if an object does not exist but of which the person thinks to be there and reacts to it becomes a part of his life space.

Example: *If a child thinks that there is a snake on the floor even if it is imaginary, it is the part of his life space.*

It includes the persons, his drives, motives, believes, tensions, thoughts, feelings and his physical environment which consists of perceived objects and events.

The life space of two persons in an identical situation may be entirely different.

A person in life space:



The person is often represented as a point moving about in his life. Psychologically a person is composed of two components:
1. Motor perceptual stratum(abilities)
2. Inner personal stratum(needs)

FOREIGN HULL:

The life is surrounded by a non psychological boundary called foreign hull.

TOPOLOGY:

Topology is non-metrical geometry which includes concepts such as inside, outside and boundary.

VECTOR:

In field of psychology, a vector means a force that is influencing psychological movement towards or away from a goal.

VALENCES:

Valences are the attracting or repelling powers of regions.

Object may have either positive or negative valence. The movement of person is decided by the valence of the goal.
***Positive Valence*:** The object or goal which satisfies needs or are attractive to the person.
Negative Valence: The object or goal which threatens the individual or are repulsive to the person.

CONFLICTS:

It is the state of tension brought in by the presence of two opposing desire in the individual. If only one vector impelling upon the individual, he will move in the direction indicate by the vector.

<u>If two equally balanced vectors are operating, the result is a conflict.</u>

As the person is influenced by several valences at a time, these give rise to conflict .

There are three types of conflicts

a) Approach- approach conflict

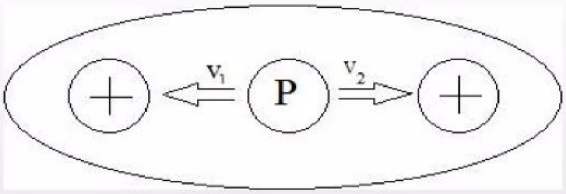
b) Approach- avoidance conflict

c) Avoidance – avoidance conflict

Approach-approach conflict

➢It arises when the person is caught in between two goals both havingpositive valences.

•It is a conflict between two positive goals which are equally attractive.

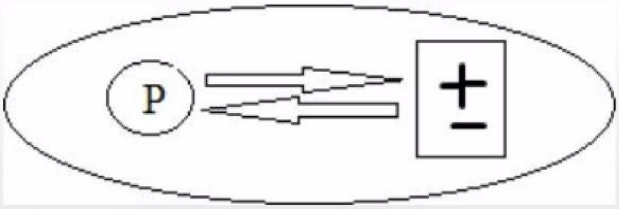


Eg: 1. A Person who wants to go two marriages scheduled at the same time.
2. A person who wants to choose a course aftercompleting degree.

Approach-avoidance conflict

➢It arises when the person is caught in between a positive and a negative goal.

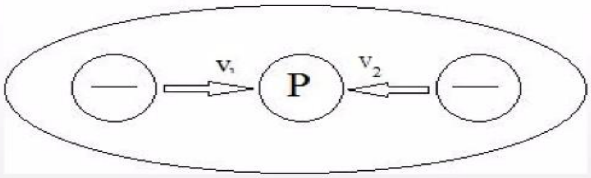
The same object has strong positive valence as well as negative valence.



Eg: Smoking, alcohol consumption etcis enjoyable, but they are threat to health.

Avoidance- avoidance conflict

It arises when a person is caught in between two goals both having negative valences.
The person is like "***caught in between devil and sea".***



Eg: A student who desires to avoid doing homework as well as the punishment from the teacher.

Educational Implications:

1. The teacher should present the whole problem and evoke the cognitive and emotional readiness in the learners for optimum learning.

2.In order to achieve optimum communication and meaningful give and take, a teacher should try to work out the life space of each student in his class.
3. Motivation is an important factor in bringing changes in the cognitive structure of a student. In order to motivate the students, the teacher has to identify both the driving as well as the restraining forces present in the life space of each student.

Self- Check Exercise-2

Q1. There are……. elements are there in field theory given by kurt Lewin.

Q2. Kurt Lewin was…….

a) Behaviorist
b) Humanist
c) Neo- Gestaltist
d) None of above

4.4 Summary : Dear learner, in this unit we have gone through detailed discussion of different theories of learning which includes Trial and Error theory with its primary and secondary laws of learning and Kurt Lewin Field theory which includes the important concept of field theory and their implication in the field of education.

4.5 Glossary:

***FOREIGN HULL*:** The life is surrounded by a non psychological boundary called foreign hull.

***TOPOLOGY*:** Topology is non-metrical geometry which includes concepts such as inside, outside and boundary.

***VECTOR*:** In field of psychology, a vector means a force that is influencing psychological movement towards or away from a goal.

***VALENCES*:** Valences are the attracting or repelling powers of regions.

4.6 Answer to self-check Exercises

Self-Check Exercise-1

Ans 1. Three
Ans 2. Pleasure and Pain
Ans 3. Readiness

Self-Check Exercise-2

Ans 3. Six
Ans 4. Neo-Gestaltist

4.7 References and Suggested Readings:

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4.8 Terminal Questions:

Q.1 what do you understand by the trial and error learning?
Q.2 Explain different laws of trial and error learning?
Q.3 what are the important concept of field theory?
Q.4 Explain educational implications of different laws of trial and error

=====X=====X=====

UNIT– 5

Tolman's Sign Learning, Information Processing Theory (Donald Norman)

Structure of the unit:

5.1 Introduction: It is universally known that all human beings learn by experiences. But how does learning take place? It is a debatable question that needs explaining. In order to find an appropriate answer to this questions, the psychologists have propounded many theories learning theories are conceptual frameworks describing how information is absorbed, processed, and retained during learning. Cognitive, emotional, and environmental influences, as well as prior experiences, all play apart in how understanding, or a world view, is acquired or changed and knowledge and skills retained.

5.2 Learning Objectives

After completing the unit you will be able to:

- Understand the concept of Latent learning

- Implications of sign learning
- Concept of information processing
- Implications of information processing theories by Donald Norman

5.3 Theories of Learning

5.3.1 Tolman's Sign Theory of learning (Latent Learning)

Edward Tolman (1948) challenged the assumption of behaviorism by proposing that people and animals are active information process and not passive learner. Tolman's theory of learning is known by several names such as "sign significance theory", "expectancy theory", "purposive behaviorism" or simple "sign learning theory." Tolman believed individual do more than merely respond to stimuli. Reinforcement was not necessary for learning to occurs. He felt behavior is mainly cognitive. He coined the term "Cognitive Map". Cognitive Map is an internal representation of external environmental features or landmarks. Individual acquire large number of signals from the environment which he could use to make mental image or cognitive map to get goal.

Edward Tolman is widely credited with discovering and disseminating the concept of latent learning through his experiment in the 1930's. While the broader idea that learning can occur without immediate reinforcement might have been discussed or observed in various forms earlier, Tolman's systematic experiments with rats in maze clearly demonstrated and popularized the specific concept of latent learning in psychology.

Edward Tolman argued that humans engage in this learning daily as we drive or walk the same route daily and learn the locations of various buildings and objects. Only when we need to find a building or object does learning become obvious. Tolman conducted experiments with rats and mazes to examine the role of reinforcement in how rats learn their way through complex mazes. These experiments eventually led to the theory of latent learning.

Examples:

An example of latent learning in children is when a child watches their parents drive multiple times without actively trying to learn the process. Later, during a toy car games, the child mimics the steps of starting a car, checking mirrors, and using indicators, even though they have never been formally taught or reinforced for learning these actions. The child's earlier observation became evident when there was a relevant situation to apply the knowledge.

Cognitive maps as an example of latent learning in rats

Tolman coined the term cognitive map, which is an internal representation (or images) of an external environmental feature or landmark. He thought that individuals acquire large numbers of cues (i.e., signals) from the environment and could use these to build a mental images of an environment (i.e., a cognitive map).

In his experiments with rats in mazes, Tolman observed that even without direct rewards, rats seemed to develop a “mental map” of the maze. When later introduced to a reward, these rats could navigate the maze more efficiently than those without prior exposure, suggesting they had learned about the maze (latent learning) even without reinforcement.

Aim

To demonstrate that rats could make navigational decisions based on knowledge of the environment, rather than directional choices being dictated by the effects of rewards.

Procedure

In their study, 3 groups of rats had to find their way around a complex maze, at the end of the maze, there was a food box. Some groups of rats got to eat the food, some did not, and for some rats the food was only available after 10 days.

Group1: Rewarded

Day 1 – 17: Every time they got to end, given food (i.e. reinforcement)

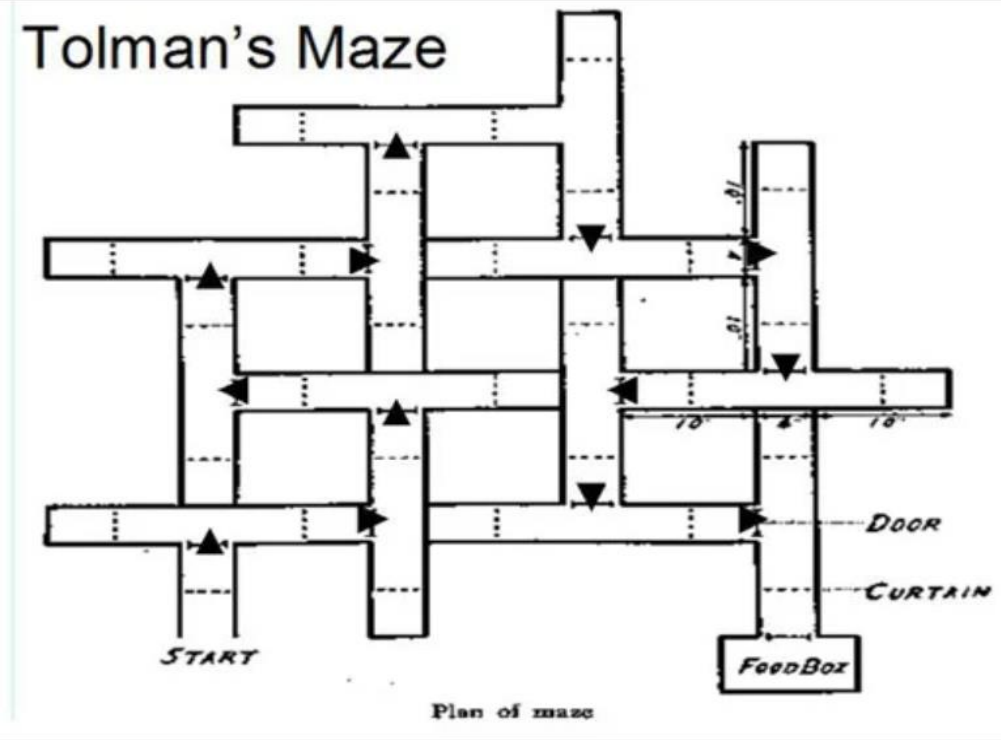
Group 2: Delayed Rewarded

Day 1 – 10: Every time they got to end, taken out.

Day 11 – 17: Every time they got to end, given food (i.e. reinforcement).

Group 3: No reward

Day 1 – 17 : Every time they got to end, taken out.



Results

The delayed reward group learned the route on days 1 to 10 and formed a cognitive map of the maze. They took longer to reach the end of the maze because there was no motivation for them to perform.

From day 11 onwards, they had the motivation to perform (i.e. food) and reached the end before the rewards group.

This shows that between stimulus (the maze) and response (reaching the end of the maze) a mediational process was occurring the rats were actively processing information in their brains by mentally using their cognitive map (which they had latently learned.

Educational implications of Sign learning Theory:

Practice: Tolman believes that practice or exercise cannot help the learner in the initial selection of a right response. Mere frequency without belongingness does not establish a connection.

Motivation: Motivation does not help in learning something new. It simply encourages the performance as such.

Understanding: Tolman believes in learning by creative inference, inventive ideation and so on. Insightful learning is emphasized.

Transfer: Transfer of training depends upon applicability of the essential relationship perceived by the learner in one situation to some other situation.

Forgetting: Repression and ratio-active inhibition cause forgetting. Tolman attributes forgetting to the resistance of cathexis(relationship between a drive and object) also.

Self-check exercise-1

1. Concept of latent learning is given by…….
    a) Thorndike
    b) Skinner
    c) Tolman
    d) Pavlov
2. Tolman conducted his experiment on ……
    a) Cats
    b) Rats
    c) Dog
    d) None of above

5.3.2 Information processing theory by Donald Norman

The first modern behavioral model to travel down memory lane, and one whose concept pf primary memory has served as a departure point for most modern theories, was developed by Waugh and Norman (1965). The theory is dualistic*; primary memory* (PM), a short-term storage system, is conceptualized as being independent of *secondary memory* (SM), a longer-term storage system. Waugh and Norman borrowed freely from William James's dichotomy of primary and secondary memory and illustrated their theory by means of the model shown in Figure below, which encouraged the memory metaphor of boxes in the head that soon proliferated in the literature of cognitive psychology.

What Waugh and Norman did that James never attempted was to quantify properties of primary memory. This short-term storage system was taken to have very limited capacity, so that loss of information from it was postulated to occur not as a simple function of time but (once the storage capacity was exhausted) by displacement of old items by new ones. PM could be conceptualized as a storage compartment much like a vertical file, in which information is stored in a slot or, if all the slots are filled, displaces an item occupying one of the slots.

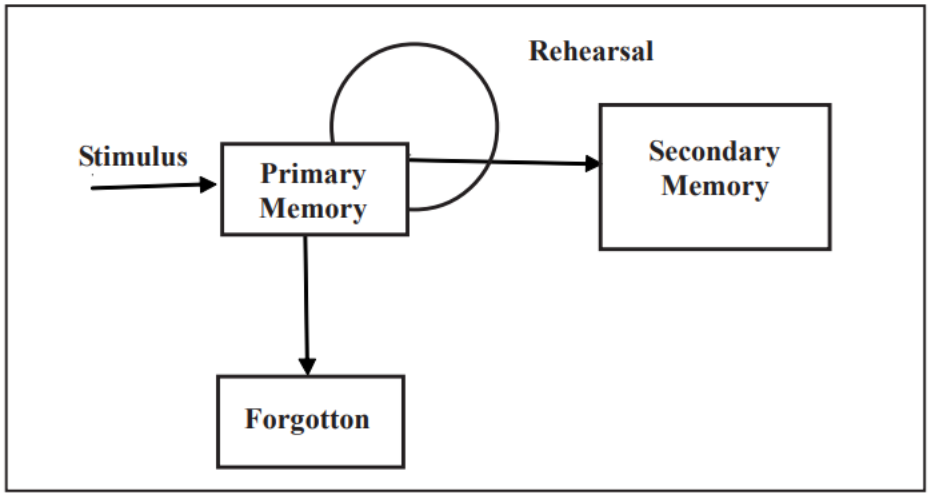


Fig. 1.4.1: Model of Primary and Secondary Memory (*Adapted from Waugh and Norman (1965)*)

Waugh and Norman traced the fate of items in PM(primary memory) by using lists of sixteen digits, that were read to subjects at the rate of one digit per second or four digits per second. The purpose of the presenting digits every second or quarter seconds was to determine whether forgetting was a function of decay (presumed to be due to time) or interference in PM.

If forgetting was a function of decay, then less recall could be expected with the slower rate (one digit per second); if forgetting was a function of interference in PM, then no difference in recall could be expected according to the presentation rate. The same amount of information is presented at both presentation rates, which, by Waugh and Norman's logic, allows the same time for decay to occur. It might be argued that even at one item per second, subject would allow extra experimental information to enter their PM, but later experimentation (Norman,1966) in which presentation rates varied from one to ten digits (for a given period), yielded data consistent with a rate of forgetting expected from the original model. The rate of forgetting for the two presentation rates is similar. Interference seems to be a greater factor than decay in forgetting in PM.

Waugh and Norman's system makes good sense, PM holds verbal information and is available for verbatim recall; this is true in our ordinary conversation. We can recall that last part pf a sentence we have just heard with complete accuracy, even if we were barely paying attention to what was said. However, to recall the same information sometimes later is impossible unless we rehearse it, which makes it available through SM.

Self-check exercise -2

1. The memories talk about Donald and Norman are…….

a) Primary memory

b) Secondary memory
c) Both
d) None
2. what is Verbatim recall……?

5.4 Summary

Dear learner, in this unit we have gone through concept of latent learning given by Tolman and his Maze experiment with rats and its educational implications and Information Processing theory given by Donald Norman in which they talk about the role of primary memory and secondary memory for information processing with its implication in the field of education.

5.5 Glossary*:*

***1. Verbatim recall*:** recollection of the exact wording of verbal material.

***2. Latent*:** Existing, but not yet very noticeable, active or well developed

5.6 Answer to self-check Exercises

Self-check Exercise-1

Ans 1. Tolman

Ans 2. Rats

Self-check Exercise-2

Ans 1. Both

Ans 2. Recollection of the exact wording of verbal material.

5.7 References and Suggested Reading

- Bandura, A. (1986). Social Foundations of Thought and Action. Englewood Cliffs, NJ: Prentice-Hall.
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- Tolman, E. C. (1952). “Principles of Performance.” In S. Koch (Ed.), *Psychology: A Study of a science* (Vol.2, pp. 92-157). New York: Mc Graw-Hill.
- O’Donnell, J.M (1980). *The origins of Behaviourism: American psychology*, 1870-1920. New York University press.
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5.8 Terminal Questions:

Q1. Explain the concept of latent learning in detail.

Q2. Describe Information Processing theory in detail.

Q3. What are the educational implications of the sign learning?

=====X=====X=====

UNIT-6

Transfer of Learning: Concept, Types of Transfer of Learning and Strategies to Maximize Transfer of Learning.

Structure of the unit

6. 1 Introduction

Dear learner, this lesson deals with the concept of transfer of learning and types of transfer of learning. In general terms, transfer of learning occurs when prior-learned knowledge and skills affect the way in which new knowledge and skills are learned and performed. Transfer is deemed to be positive if acquisition and performance are facilitated, and negative if they are impeded.

6.2 Learning objectives

- Acquire knowledge and understanding of transfer of learning.
- Understand the types of transfer of learning.
- Understand the strategies to maximize transfer of learning.

6.3 Concept of Transfer of Learning

In the field of psychology there has been an interest in transfer of learning since the beginning of the century. However, it was not until the 1960s and 1970s that the methodology of transfer experiments was used in other areas of human learning. Marini and Genereux (1995) approach transfer of learning from an educational perspective.

They suggest that in the past there has been a separation of the transfer process into task, learner and context, rather than taking a holistic approach. They argue that in order to optimize transfer, it is necessary to teach about content/conceptual knowledge, procedural/strategic knowledge and appropriate dispositions.

The ability of the individual to apply the previous experience on the new related experience is what we call transfer of learning.

Except students are able to transfer prior skills and knowledge on new ones, the continuity of learning will be difficult. This unit will explain how old learning can be transferred to a new one. You will know what the classroom teacher needs to do in order to facilitate transfer of experiences among his/her students.

The essence of learning is that a previously learnt fact should be linked with a present experience. This is because human being must be dynamic and that the prior experience will make them to develop the new skills and knowledge. The influence the past experience has on the succeeding experience is called transfer of learning.

Cormier and Hagman, (1987) define transfer of learning as the application of skills and knowledge learned in one context being applied in another context.

Oladele (1998) defines transfer of learning as the effect of prior learning on the present. Learning is meaningful when the past learning smoothens the progress of something else. For example, if a learned experienced refuses to aid the new learning, the goal of training has seized to be accomplished. In the school, the teacher teaches some subjects in order that the experience gained in those subjects could be transferred into another.

Charham (1987) affirms that human and animal learning is normally affected by the past experience, and that the various subjects are included in the school curriculum because of their utility and wide application to real life situations For instance, the teacher who has taught his/her students some skills in Mathematics would believe that such skills be transferred to related subjects like Physics or Accounting. If the students fail to apply these skills in their subsequent learning, it means that the students have not been successful in transferring the learning.

Meaning and Definitions of Transfer of Learning:

Since its birth, learning has been the central point of psychology. Learning is related to the transfer. The thought is a child should be given knowledge, so that he can use it throughout his life. Initially psychologists were of the view that there are different powers inside a man which are in form of desire, imagination, reason, interest, memory etc. By training them, man's development is possible. This gave birth to two thoughts:

(i) Formal Discipline

(ii) Transfer of Learning

According to legal discipline, mental development is made when a difficult work is done again and again and can be transferred in any situation of life. They believe that mind is made of many powers. Many people opposed this theory. Many experiments have proved that mind does not many powers but there are many behavior tendencies, which are

related to each other. Secondly, it was proved that every transfer of work is not useful. In practice also, we have seen that an engineer cannot be a doctor.

In our day to day life, we observe that a learnt work affects the learning of another work. Like learning of Math's makes learning of physics easy. But some transfer of learning creates obstacles too.

1. **Crow and Crow**: "The carry over of habits of thinking, feelings or working of knowledge or of skills from one learning area to another is usually referred to as the transfer of training."
2. **Peterson**: "Transfer is generalization, for it is extension of idea to new fields."
3. **Guthrie and Powers:** "Transfer may be defined as a processes of extending and applying behavior."
4. **Munn said,** "carry over from one habit to another" is called transfer of learning.

6.4 Types of Transfer of Learning and Factors influencing transfer of Learning

Types of Transfer of Learning

(a) Positive Transfer: This is a situation whereby a previously learnt fact or information aids in the understanding of a new task. Aside from aiding the learners in their subsequent learning, it also helps the learners to learn better and effectively the new task.

(b) Negative Transfer: This is a type of learning in which prior experience imparts negatively on the new one. In this case, the understanding of past skills inhibits the mastering of new ones. For example, if a student wrongly connects information, it can lead to negative transfer.

(c) Zero Transfer: This type of learning reveals no link between the previously learnt task and the recent one. The evidence of zero transfer is hardly seen, it reveals no clear positive or negative effect.

(d) Unilateral: If training given to any one organ of the body is useful, then it is called unilateral transfer. For example, to practice with left hand.

(e) Bilateral: when training given to one part of the body proves to be useful for the other part, it is called bilateral transfer of learning.

(f) Vertical Transfer of learning: Vertical transfer is both negative and positive. A child uses his knowledge of one class in another class.

(g) Horizontal Transfer: When knowledge acquired in one subject proves to be helpful in another subject.

Factors Influencing transfer of Learning

1. Meaningfulness of content: If the contents are meaningful transfer will be more.

2. Similarity of contents: Transfer of learning is possible when there are some similar content between the two situations *e.g.* in civics and political science, history and geography.

3. Similarity of techniques and principles: If the techniques and fundamental ideals or principles are similar in the two situations, transfer will be more. For example in football and hockey, most of the techniques are common.

4. Method of teaching: Transfer of learning to a great extent depends upon the methods of teaching. So transfer of learning occurs if the methods of teaching are life like, interesting and effective.

5. Meaningful learning: The more meaningful is the learning the greater are the chances for its transfer, that is transfer depends upon understanding that is why rote learning is not desirable.

6. **Intelligence**: The amount of transfer is closely related to the intelligence of the learner. Brighter children tend to transfer their learning more effectively than average or dull children.

7. Deliberation: Transfer very much depends upon a deliberate effort on the part of the learner to interpret a new situation in the light of the past.

8. Generalization: Generalization is said to be the crux of transfer of learning. The more we generalize our reactions the more are the chances for transfer of learning from one situation to another.

Self-check Exercise -1

1. Which transfer of learning is both positive and negative……..?
2. Which one is not the factor influencing transfer of learning……..?

    a) Similarity of content

    b) Method of teaching

    c) Vary modalities

    d) Intelligence

6.5 Strategies to Maximize Transfer of Learning

Learning transfer refers to acquiring knowledge or skills in one context that enhances a person's performance in another context. This is known as positive transfer. A person must be sufficiently engaged in a learning experience in order to correct, modify and refine his or her existing knowledge structures to promote transfer of learning.

1. **Provide opportunity for reflection and self-explanation**: Reflection strategies encourage people to expand on what they are learning and to identify where they have deficiencies in order to correct them. Metacognitive strategies like these encourage people to be aware of their own thinking as they are learning.

2. **Vary modalities:** Adding voice narration to complex simulations rather than using textual explanations can improve learning transfer. According to multimedia learning theory, balancing the presentation of material across both visual and verbal channels prevents a learner's cognitive resources from being overloaded.

3. **Use relevant visuals rather than text alone:** Many studies demonstrate that learning is enhanced with explanatory pictures. Visuals can decrease cognitive load and improve retention and transfer. To benefit from this effect, provide opportunities for learners to attend to the pictures and to integrate visual information with the narration or text. Often, explicit instructions to examine the visuals are helpful.

4. **Enhance social learning at work:** In many careers, the work itself is a learning experience. Learning transfer and work become one process as the individual continuously acquires knowledge and applies it. For these individuals, learning transfer is enhanced and improved through social learning. As workers discuss and problem solve, they apply their knowledge to new situations.

5. **Create a supportive learning environment:** *Collaborative learning*: promote group work and discussions to expose learners to different perspective and applications**.** *Provide feedback***:** give timely and specific feedback to help learners understand how to improve and apply their knowledge**.**

6. **Scaffolding learning:** *Gradual increase in the complexity*: start with a simpler task and gradually increase complexity as learners become more proficient . *Guided practices*: provide support and gradually reduce it as learners gain confidence and competence.

7. **Promote deep understanding:** *Conceptual understanding*: focus on the underlying principles and concepts rather than rote memorization*. Reflection*: encourage learners to reflect on what they have learned and how it can be applied in different contexts.

8. **Encourage metacognition*:*** *self monitoring*: teach learners to monitor their own understanding and to recognize when they need to seek additional information. *Strategy used*: encourage the use of learning strategies, such as summarization, questioning, and predicting.

Self-check Exercise -2

Q1. Gradual increase in complexity is……type of learning ?

Q2. When learning of one activity facilitates the learning of another activity, it known as :

a) Positive transfer

b) Negative transfer

c) Zero transfer

d) Vertical transfer

6.6 Summary: Dear learner, in this unit we have gone through concept of transfer of learning and types of transfer of learning and different factors affecting transfer of learning in detail.

6.7 Glossary*:*

***1. Unilateral*:** If training given to any one organ of the body is useful, then it is called unilateral transfer. For example, to practice with left hand.

***2. Bilateral*:** when training given to one part of the body proves to be useful for the other part, it is called bilateral transfer of learning.

6.8 Answer to self-check Exercises:

Self-check Exercise-1

Ans 1. Vertical

Ans 2. Vary modality

Self-check Exercise-2

Ans 1. Scaffolding learning

Ans 2. Positive transfer

6.9 References and Suggested Reading:

- National research council. (2000*). How People Learn: Brain, Mind, Experiences, And School*. Washington, DC: National Academies Press.

- Schunk, D. H. (2012). *Learning Theories: An Educational Perspective* (6th Ed.). Boston Pearson.

- Barnett, S. M., & Ceci, S. J. (2002). "When and where do we apply what we learn? A Taxonomy for Far transfer*." Psychological Bulletin*, 128(4), 612-637

- Gagne's, R. M. (1985). *The conditions of learning and theory of instruction* (4th ed.). New York: Holt, Rinehart and Winston.

- Judd, C. H. (1908). "The relation of special training to general intelligence." *Educational review*, 36, 28-42.

6.10 Terminal Questions:

Q1. What are different types of transfer of learning, explain in detail.
Q2. Explain different types of maximize transfer of learning?

Q3. What are the different factors that influence transfer of learning?

=====X=====X=====

UNIT-7

Theories of Transfer of Learning and their Educational Implications

Structure of the unit

7.1 Introduction

Dear learner, this lesson deals with the concept of transfer of learning and theories of transfer of learning. In general terms, theories of transfer of learning explained transfer of learning occurs when prior-learned knowledge and skills affect the way in which new knowledge and skills are learned and performed. Unit also deals with the implication of theories in the field of learning.

7.2 Learning objectives:

- Acquire knowledge of different theories of transfer of learning.
- Able to understand the Educational implications of theories.

7.3 Theories of Transfer of Learning

a. Theory of Mental Faculties: This theory was propounded by the Greek Philosophers, notable among them was Aristotle. The basic tenet of the theory is that human mind is

sub-divided into different powers of faculties like memory, judgment, reasoning or thinking. It is therefore believed that each of these faculties is reinforced and developed by cast and continuous memorization of poetry/poem and similar works. This theory believes that exercises and regular practice will strengthen the mental faculties. The theory therefore dismisses the concept of transfer of learning, to it a well trained and disciplined mind is the ingredient needed for understanding of new information.

Criticism: This theory has been widely criticized. Many experiments have proved that there not many powers in mind but there are many behavior tendencies, which are related to each other and transfer is possible. Second criticism is that the work learning cannot be useful in learning all the time. The power of faculty can be developed by training, but it is not clear whether tis power alone can affect the development. Overall, the criticisms highlight that the Mental Faculties theory does not adequately account for the complexities of how learning and cognitive processes work.

b. Theory of Identical Elements: The theory which was developed by the duo of Thorndike and Woodworth (American Psychologists) indicates that it is possible for an individual to transfer the prior skills and knowledge to recent ones because both experiences are identical (share things in common). This theory suggests that a successful or effective learning will happen if there are connections or interrelatedness between the old and the new experiences. For example, it is expected that a student who has learnt about anatomical parts of human being in a Biology lesson, should be able to do well when he/she is asked to name anatomical parts of a goat during Agriculture lesson. According to this theory:

(i). After learning a work how much it affect the second work – it depends on their identical elements.

(ii). If identical elements are more, then transfer will be comparatively more and vice versa.

(iii). Identical elements help in learning each other's work.

(iv). According to Thorndike transfer is always specific.

(v). Thorndike said when two experiences are identical only then there is a possibility of transfer, like a person who can drive tractor can drive a car also.

(vi). Thorndike said that every work has small-small segments. If these segments are identical, then only transfer will be possible.

(vii). Sorenson agreed with Thorndike and said," According to this theory those identical elements, there is transfer from one situation to another to the extent that there are elements and components common to the two situations."

Criticism: This theory was criticized on the following points:

(1). Woodworth said transfer is not the element but in the component.

(2). Gestaltists said, transfer is not due to identical elements but is due to strategy**.**

c. Theory of Generalization: This theory was advocated by a Psychologist named Charles Judd. The assumption of the theory is that general principles aid transfer of

learning better than segregated facts. This theory believes in Gestalt, an assertion which views learning from a whole or complete form rather than in isolated form. For example, the theory of generalization indicates that a learnt experience should be useful in other day-to –day related activities.

Until and unless some activity or subject's general theories are not apprehended, till that time transfer is not possible. Judd did one experiment to prove his point. He took two group of children. One group was to trained to hit on an object lying one feet deep in water. The trained proved to be successful, but the other group lost confidence. Thus Judd concluded that transfer is based on Generalization.

d. Theory of General and Specific Factors or Two Factors Theory:

This theory propounded by Spearman. He said transfer can be by general and specif**ic** factors. Spearman studied intelligence and said it is of two types:

1. General intelligence.
2. Specific Intelligence**.**

General intelligence is found in every individual. Specific intelligence is used in specific situations. General intelligence is represented by 'G' component and specific intelligence is represented by 'S' component. According to this theory for learning, 'G' component is responsible. 'G' component does not help in transfer.

.

e. Gestalt Theory: The followers of Gestalt gave importance to the form for transfer. They also gave importance to 'insight' in learning. To maintain that insight into the situation in all its relationship was the essential thing in securing general training (Sawrey and Telford).

Self- check Exercise -1

Q.1 who propounded the theory of identical elements…?

a) Aristotle
b) Telford
c) Spearman
d) Thorndike

Q.2 General intelligence does not help for transfer?..... (yes/no)

7.4 Educational Implications of transfer of learning:

Utility of transfer of learning should be discussed in the context of the assumption that knowledge, skill and methods of learning which learners use in relation to define school tasks remain available in the future and also applies to solve new problems. With this assumption in mind, the knowledge of nature of transfer of learning helps you in finding

answer to some crucial questions like – what type of learning in the school will help learners in solving problems in daily life. Which type of learning helps and which hinders in coping with day-to-day problems? And perhaps the most important and most neglected question – how best can we increase the transfer effect? Educationist have performed experiments for finding answers to the above mentioned questions. On the basis of the result of their investigations, they recommended that education must be life- centered to facilitate transfer of learning. School activities should have the tint and texture of the activities which the learners are expected to come across in his daily life. Problem- solving and discussion methods are more useful in promoting the power of transfer. Cramming should replaced by meaningful learning. Learners should be trained to form generalization and they should be made self-reliant in solving new problems.

Following are some suggestion for achieving maximum positive transfer of learning:

1) Suitable curriculum: There is an urgent need to bring desirable changes in the present curriculum. It is unpsychological, unprogressive, narrow, rigid and divorced from actual life. Improvement is needed in the curriculum from the point of view of transfer of training:

a) Integrated curriculum: Curriculum should be an integrated whole so that there may be positive transfer of training. Hence correlation should be given due weightage while determining the curriculum. Special attention should be paid to the following types of correlation:

(1) Correlation among different subjects of the school curriculum.
(2) Correlation of school subjects with physical and social environment.
(3) correlation of the different branches of the same subject.
(4) correlation of different topics within the same branch.

b) Practical and utilitarian curriculum: curriculum should be of practical use for the students. It should be associated with day to day interests and needs of the learners. It should be directly related to vocational interest, health and safety needs, citizenship of recreational activities of the pupil and social environment.

C) Guidance in selection of the curriculum: the student must be guided in the selection of such courses which have maximum transfer value.

2) Suitable Methods of teaching:

a) Emphasis on correlation: Emphasis should be laid on correlation so that previous knowledge may used in the new task. For example grammar of the mother tongue should be related to the grammar of foreign language.

b) Use of practice: Provide practice in transfer. Also provide practice in guarding against old expectations or mental set.

c) Use of generalization: To generalize is to summaries which is common to a number of principles, ideas and situations. Generalizations formulated by pupil themselves in their own words, are more useful and appropriate. This would enhance meaningful, understanding, completeness of knowledge and thoroughness of learning.

d) Emphasis on intelligent method of learning: intelligent methods of learning should be encouraged. Rote learning should be discouraged.

Self- check Exercise -2

Q.1 Which one is not the strategy of transfer of learning…?

a) Use of practice
b) use of generalization
c) Use of rote learning
d) Emphasis on correlation

Q.2. Integrated curriculum facilitate positive transfer of learning?.....(yes/no)

7.5 Summary: Dear learner, in this unit we have gone through different theories of transfer of learning and the educational implications of the theories in the process of learning and we have also discussed some suggestion related to positive transfer of learning in detail.

7.6 Glossary*:*

1. General and Specific Factors**:** 'G 'factor or General intelligence is found in every individual. 'S' factor or Specific intelligence is used in specific situations.

2. Mental faculties: The basic tenet of the theory is that human mind is sub-divided into different powers of faculties like memory, judgment, reasoning or thinking.

7.7 Answer to self-check Exercises

Self-check Exercise-1

Ans 1. Thorndike
Ans 2. Yes

Self-check Exercise-2

Ans 1. Use of rote learning
Ans 2. Yes

7.8 References and Suggested Readings:

- Bandura, A. (1977). Social Learning Theory. New York: General Learning Press.
- Bandura, A. (1973). Aggression: A Social Learning Analysis. Englewood Cliffs, NJ: Prentice-Hall.

- Bandura, A. (1986). Social Foundations of Thought and Action. Englewood Cliffs, NJ: A. (1997). Self-efficacy: The exercise of control. New York: W.H. Freeman.
- Chauhan S.S. (1995) Advanced Educational Psychology, New Delhi: Vikas Publishing House PVT. Ltd.

7.9 Terminal Questions

Q1. What are different types of transfer of learning, explain in detail.
Q2. Explain different types of maximize transfer of learning?

Q3. Describe educational implications of transfer of learning in detail.

=====X=====X=====

UNIT- 8

Role of teacher in Transfer of Learning and conditions of Transfer of learning

Structure of the unit

8.1 Introduction

Dear learner, this unit deals with the role of the teacher in transfer of learning. By using proper strategies teacher can facilitate the process of transfer of learning. This unit also deals with the different conditions of learning as well.

8.2 Learning objectives

Learner will able to:

- Understand that the role of the teacher in transfer of learning.
- Understand the conditions of transfer of learning

8.3 Role of Teachers in Transfer of Learning

Transfer of learning can have several contexts. Learning can transfer one language to another, from one level of Bloom's Taxonomy to a deeper level, or across content areas. All are equally valuable and teachers must consciously plan for activities and questions that help students make this move.

All content needs to be taught to the application and creation level or higher. Sheer instruction alone does not guaranteed transfer of knowledge. To get to this level student must be proficient in the prerequisite skills necessary for a solid foundation. There are several strategies to increase the likelihood that students will be able to deepen their understanding and apply knowledge to other areas. These strategies include:

1. **Questioning**-What kinds of questions are you asking in your daily lessons. Have a colleague come in and take data in regards to your questions. Be sure and plan

higher order thinking and open ended questions in your lessons. Without planning for them they will not happen within the frequency that is necessary for transfer.

2. **Collaboration**-Increase the opportunities your students have to collaborate with each other. This helps to generate ideas and model thinking. Set up activities that require students to make connections from one level to the next or across content areas.
3. **Assessment-Do an audit of your assessments**. Do they require students to think conceptually and apply their knowledge to unfamiliar situations? If not, add some. These should be your questions that score at the Advanced level.

4. **Reflection**-What opportunities are your students given for reflection? What does this look like in your class? Through the process of reflection students can have epiphanies regarding concepts and skills. Make sure that the reflection process has both a written and a communicative component. Project Based Learning-This process requires students to apply skills and concepts to real world situations. It is one thing to be able to compute a mathematical problem using the Pythagorean Theorem. It is at another level to apply it in a concrete manner.

5. **Think Aloud-Model** some examples of transfer for specific skills by doing a Think Aloud. As you give the students one example ask them to generate another. The more you model, the more they will begin to understand how to think at this level.

Education's purpose is ultimately to ensure that students can be successful in the real world, in a job or a personal setting. Today's job market requires application, creativity, and innovation. Rote memorization of facts will not provide success in his arena. Students must have practice applying and transferring of knowledge before they go out in the world. This practice should be a normal part of school every day. Take a hard look at your instruction. Are you offering opportunities for students to collaborate, reflect, and apply their skills? Are you delivering higher order thinking and open ended questions daily? Do your assessments offer questions that require transfer? If not make some changes. The learning will deepen along with the engagement.

In a Concept-Based Inquiry classroom (Erickson et.al, 2017 and Marschall and French, 2018) we teach for understanding and actively seek opportunities for students to

transfer their learning**.**

We help students develop a range of strategies to organize their findings and make connections to articulate generalizations.

Our inquiry approach (French and Marschall, 2016) promotes a deeper understanding of conceptual relationships.

Research shows with a focus on understanding rather than emphasizing the recall, repetition and summarization, students are better able to transfer their learning (Bransford, 2000).

As educators, we can no longer afford to assume that our students transfer their understandings. We must actively promote and create opportunities for four different types of transfer

- The teacher should know that transfer of learning will not take place when both the old and new are unrelated. Hence, the teacher should endeavor to teach his/her subject-matter in a more meaningful and detailed way rather than by rote.

- The teacher should provide the opportunity for his/her students to practice a subject-matter being discussed along with him/her. When the learners are allowed to take active part in teaching learning activities, they will be able to repeat the task at another time.

- For a transfer of learning to take place, the teacher should always emphasize the relationship that exists between one subject matter and another.

- The teacher should endeavor to develop positive attitudes towards a learning task so that the students can be motivated to like the task rather avoiding it.
- It is believed that what students see, touch, feel or manipulate will be better remembered than the one they are not familiar with. Hence, for a meaningful transfer of learning to take place, the teacher should incorporate exercises that task the various senses of learners in the learning process.

Self-check Exercise-1

1. Maximum transfer of learning occurs when new learning is related to previous knowledge……? (yes/no)

2. Concept based inquiry classroom related to…….
 a) Charles Judd
 b) Thorndike or Woodworth
 c) Erikson and Marschall
 d) None of above

8.4 Conditions of Transfer of Learning:

The transfer of learning is not spontaneous. It needs favourable conditions. According to Ryburn, “There is a certain amount of transference that can take place under certain conditions.”

This means that transfer is never whole but is in a definite quantity and it needs favourable conditions. These favourable conditions are as under:

(1) Learner’s educational achievements: If the learners’ academic activity is more during the process of transfer, then transfer will also be more. But this is possible only when the person does the study with understanding and does not memorize it. Mursell said, “Whenever we have really learned anything, we can transfer it.”

(2) Identical method of study: While learning, if identical methods of study are adopted, than transfer becomes possibles. When the student tries to find the facts analyze them and verify the facts while studying science, then he can utilize this for learning history and geography also.

(3) Identical subject-matter: This has been proved that if two subjects are identical, then we can expect transfer. For example, the knowledge of Arithmetic helps in learning Physics.

(4) General Intelligence: If a learner has more of general intelligence, the more success he will get in transfer (Geratt).

(5) Ability to Generalize: In the transfer of learning, the ability to generalize is the main basis. The more ability to generalize the learner, the more transfer will be possible (Ryburn).

(6) Learner's Will: the level of transfer depends on learner's will also. The more will is there, the more transfer will be possible (Mursell).

(7) Training in Transfer: Transfer depends on training also. If the learner is provided correct training, he will be more successful in transferring of learning. Garett said, " the best way to get transfer in school work is to teach for transfer."

(8) Transfer value of subjects: According to Garrett, "School subjects differ in transfer value." For example, as compared to language and Social sciences, transfer value is more in Mathematics and science. There is no transfer value in History and English literature.

Self-check Exercise-2

1. Who said that "School subjects differ in transfer value."
a) Garett
b) Ryburn
c) Mursell
d) None

2. The more ability to generalize the learner, the more transfer will be possible said by whom…..?

8.5 Summary

Dear learner, in this unit we have gone through the role of the teacher in transfer of learning and strategy use by teacher to make transfer of learning more effective. We have also discussed about the conditions of learning in detail.

8.6 Glossary*: 1. Reflection***:** Through the process of reflection students can have epiphanies regarding concepts and skills.
2. Collaboration-the act of making something together. This helps to generate ideas and model thinking.

8.7 Answer to self-check Exercises

Self-check Exercise-1

Ans 1. Yes

Ans 2. Erickson and Marschall

Self-check Exercise-2

Ans 1. Garett

Ans 2. Ryburn

8.8 Reference and Suggested Readings:

- Dandapani S. (2005). Advanced Educational Psychology, New Delhi: Anmol Publications
- Lindgren H.C. (1980) 'Educational Psychology in the Classroom, New York: Oxford University Press.
- Mangal S.K. 2005) Advanced Educational Psychology, New Delhi. Prentice Hall of India,
- Santrock, John W. (2006). Educational Psychology Update: Preparing for PRAXIS TM and Practice (2nd edition), New Delhi: Tata McGraw Hill.
- Skinner C E, (1984) Educational Psychology New Delhi: Prentice Hall.
- Woolfolk, A.E. (2009). Educational Psychology (11th Edition) (My Education Lab Series) New Delhi: Prentice Hall.

8.9 Terminal Questions:

Q.1 Describe the role of teacher in transfer of learning.

Q. 2 what are the different conditions of transfer of learning**?**

UNIT- 9

Memory: Concept, Types, Nature and, Strategies to Enhance Memory

Structure of the unit

9.1 Introduction

It is said education is a lifelong process and we are learning all the time. But simply learning without being able to repeat that in another situation or occasion is of no use. Thus we must be able to make use of past experiences. We must be able to reproduce it. This power of reproduction is known as memory, or the ability to retain and recall the past events to present consciousness. This implies that memory is the reproduction of past experience even without the presence of the stimulus.

9.2 Learning objectives:

After completing this unit, you will be able to:

- Explain nature of Memory
- Describe various , types of Memory
- Characteristics of memory
- Describe strategies to develop memory

9.3 Concept and types of memory

Concept

There is a two-way relationship between learning and memory. If information acquired from learning is not stored in the memory, it will be lost and so we would be unable to recall it. On the other hand, the information we have already stored in our memory,
Influences our new learning. To be effective, a teacher must acquaint himself with the way memory works. He must find out why children forget and be able to prevent it. He must consciously teach to promote effective storage of the material learnt by the students.

This unit will therefore describe how memory works, the major reasons why we forget and the implications of these for learning and teaching. Memory is at the center of human living, progress and activities. Without memory, we cannot remember; we cannot think; we cannot learn; and we cannot solve problems. We would not be able to know danger and run away from it. We would not be able to invent Science and Technology. We would be completely blank. It would then mean that the individual would be experiencing afresh the same thing over and over again. It would be like trying to fill a bottomless pit. But with memory, we are able to store away useful information and recall them when needed. We can think and solve problems. We are able to learn, store what we have learnt and recall it for use whenever necessary. Memory and learning cannot be separated because memory is the reservoir of our accumulated learning. It is therefore catastrophic for one to lose his memory i.e. lose all that he has learnt including his language and even his name. In psychological literature, memory is our ability to store and retrieve information. It is very important for the survival of the human species for without it, no one would retrieve any previously learned information. People think and reason using remembered facts-and can only deal with the concept of time-past, present and future with the aid of memory.
Many psychologists have defined memory variously. Some of the definitions are as follow:

- **According to Woodworth and Schlosberg (1954**), “Doing what one has learned to do.”

- **According to Hilgard and Atkinson (1967),** “To remember means to show in present responses, some signs of earlier learned responses.”

- **Guilford**: “Memory is the retention or storage of information in any form”.

- **Woodworth & Marquis**: “Memory consists in learning what was previously learned”.

- **Ryburn:** “The power that we have to store our experience and to bring them back into the field of consciousness some time after the experience have occurred is termed as memory”.

- **Spearman** has defined memory in this way, “To collect a learnt thing or an incident is a sign of memory.”

Memory is the special ability of our mind to store when we learn something to recollect &reproduce it after some time. Memory is the complex process involving learning, retention, recall & recognition. The experiences which we undergo, leaves traces in our

minds in the form of ‘Schemas’. The length of our retention depends on the strength & quality of the traces.

Memory appears like a tape recorder which records a song or music and plays whenever we demand. Our memory system does perform this but it is more dynamic and versatile than a tape recorder. When someone asks us to sing a particular song and we sing, then we are working like tape recorders. But human memory differs from a tape recorder in many important ways. For instance, we remember not only verbal material but visual experiences, tactile impressions, feelings of pain and joy, motor skills, events, activities and so on. Second, retrieval of information can be exactly in the same way or in a different form. Third, the reception of new information depends a lot on what information we already have. Fourth, we neither receive nor retain all the information presented to us because there is great deal of selectivity in receiving the information. Fifth, all tape recorders have some limitation on recording but human memory can retain extremely large amounts of information.

Finally, our memory system is an active system. It works on the information received. It may integrate, add, modify, omit or reorganize the information. It is not passive like a tape recorder which reproduces the information in its original form.

Memory storage system:

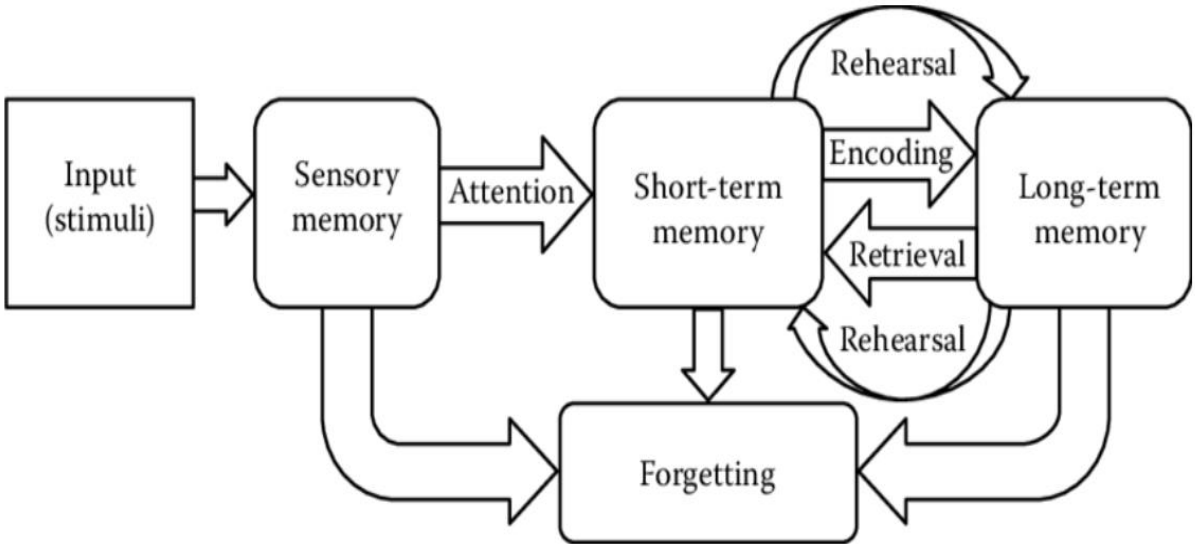


Figure1.3 (The model of memory storage)

Types of Memory:

1). Sensory or Immediate memory: Through sense organs. Information in sensory register lasts for very short duration ranging from fraction of second to a few seconds. There are two types of sensory memory; (a) Iconic Memory (b) Echoic Memory.

- ***Iconic Memory****: The iconic memory is the form of sensory memory that holds visual information for almost quarter of second or more.*
- ***Echoic Memory:*** *It is a momentary sensory memory of auditory stimulus; if attention is elsewhere, sounds and words can still be recalled within 3-4 seconds.*

2). Short-term memory: This type of memory is also called as temporary memory. It is not short lived as the immediate memory. The information temporarily stored in short-term memory may last as long as thirty seconds even if the material is not being rehearsed. However, some people are able to retain much more information in short- term memories by a process called chunking, which groups information by coding it, e.g. the number 143254376 can be remembered by listing under three heads: 143, 254, 376 for better remembering.

3). Long-term memory: This is also known as Permanent Memory. Unlike short -term memory, long term memory has a seemingly limitless capacity to store information with little or no decay and require little, if any, rehearsal. In addition to these characteristics, long-term memory codes information according to meaning, pattern and other characteristics. It is this memory that helps us to remember a number of things on a relatively permanent basis. Remembering identifying data like one's name, father's name, date of birth, date of marriage, etc., is the simplest example of long-term memory. With the help of long-term memory we can easily store, retain and remember most of the things in our life at a second's notice and thus easily conduct our daily life.

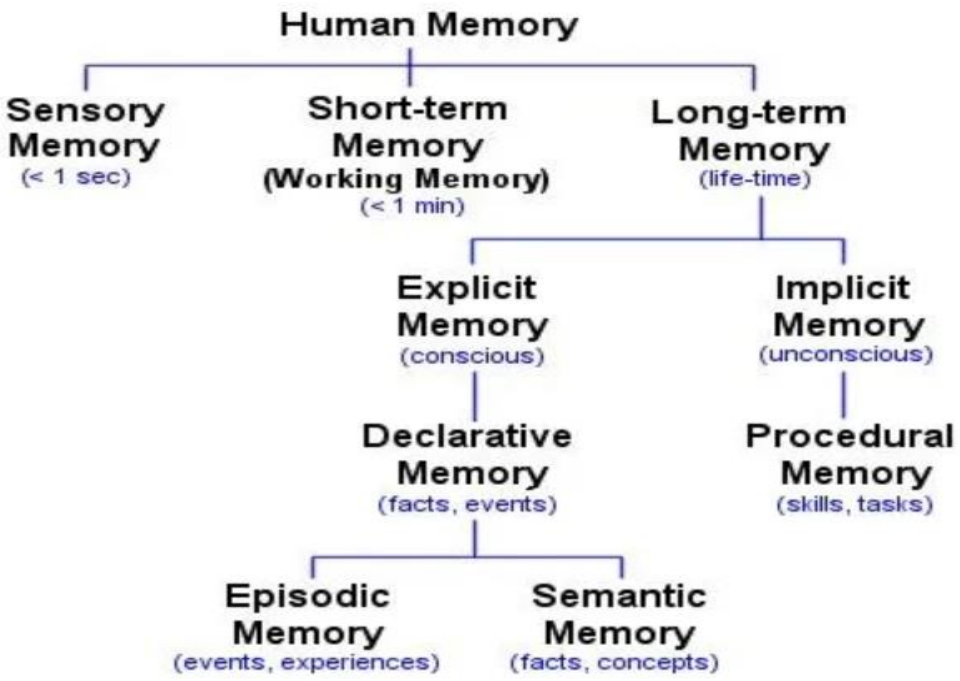


Figure no. 1.4 (Diagram of Types human memory)

Self-Check Exercise-1

Q1.) Name different types of memory……..
Q2.) Which memory is also called working memory.
a) Sensory memory.
b) Short-term-memory.
c) Long-term-memory.
d) None of above.

9.4 Summary

Memory is the cognitive process of encoding, storing, and retrieving information, crucial for learning and adapting. It comprises three main types: sensory memory, which briefly holds sensory information; short-term memory (STM), which temporarily stores information for immediate use; and long-term memory (LTM), which stores information indefinitely. LTM includes explicit memory (conscious recall of facts and events) and implicit memory (unconscious recall of skills and habits). Memory is dynamic and influenced by various factors, including emotions and context. Enhancing memory can be

achieved through strategies such as rehearsal (e.g., spaced repetition), elaboration (connecting new information to existing knowledge), organization (chunking information), visualization (creating mental images), active learning (engaging with material), and maintaining a healthy lifestyle (proper nutrition, sleep, and stress management).

9.5 Glossary

1. STM: Short –term memory

2. LTM: Long-term memory

9.6 Answer to Self-check Exercise

1. (1). Sensory or Immediate memory (2). Short-term memory (3).Long-term memory

2. b

9.7 References and Suggested Readings

- Atkinson, R.C., & Shiffrin, R. M. (1968). “Human Memory: A Proposed System and its control Processes.” In k. w. Spence & J. T. Spence (Eds*.), The Psychology of Learning and Motivation* (Vol. 2, pp. 89-195). New York; Academic Press.

- Miller, G.A. (1956). “The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information.” *Psychological Review*,63(2), 81-97.

- Craik, F. I. M., & Lockhart, R.S. (1972). “Levels of Processing: A Framework for Memory Research*.” Journal of Verbal Learning and Verbal Behavior*, 11(6), 671-684.

9.8 Terminal Questions

1. What is memory?
2. Define different types of memory.

Unit-10

Memory: Characteristics and ways of enhancing memory

Structure of the unit

10.1 Introduction

Memory is a fundamental cognitive process that enables us to retain, recall, and utilize information from our past experiences. It is characterized by various types, such as short-term and long-term memory, each with distinct functions and capacities. Enhancing memory involves strategies like mnemonic devices, regular mental exercises, adequate sleep, and a healthy diet, all of which can significantly improve our ability to store and retrieve information effectively. Understanding the characteristics of memory and employing these enhancement techniques can lead to better cognitive performance and overall mental well-being.

10.2 Learning objectives

After completing this unit, you will be able to:

- Explain Characteristics and Phases of memory
- Describe Ways of Enhancing Memory
- Explain Factors Which Help To Improve Memory

10.3 Characteristics of Good Memory:

1 Accurate and Quick Learning: Learned well is remembered well. One who can learn material accurately and quickly is credited with a good memory.

2 Accurate and Durable retention: For good memory with learning, it is also necessary that it should be retained for long time. The more accurate and durable one's retention is the better is one's memory believed to be.
3 Accurate and Quick Recognition: Poor recognition hinders recall and new memory. Hence the student must possess the ability to recognize quickly and accurately.
4 Accurate and Quick recall: It means good and sharp memory. For good memory it is also necessary to recall it as and when required.

- **Phases of memory:**

1. **Learning:** Learning is the first step to memorizing. This means that the subject matter can be retained and recalled only after it has been learnt. The expansion of memory of the meaningful words is greater than that of the nonsense syllables**.** The meaningful words can relatively be remembered more easily.

2. **Retention:** The next step to learning in the process of memorization is retention. When one learns something, one forgets a part of it. The part that is not forgotten is a mark of retention. The quantity of retention of a subject is reckoned on the basis of the quantity of forgetfulness.

3. **Recall:** Recall is the third important step in the process of memory. In recall, the things learnt are repeated. Recall is synonymous with Reproduction. Recall and Reproduction involves all the stages in which the responses learnt previously are recalled or reproduce and re-enacted.

4. **Recognition**: Recognition and recall are closely related. Recall means repeating in the absence of what has been learnt. On the other hand, recognition means recalling in the presence of something that has been learnt. In this way recall is remembering in the absence of what has been learnt. As for recognition the subject must have before him what has been learnt. Sometimes recall and recognition go together.

Self-Check Exercise-1

Q1.) Name the first step in phases of memory…….

Q2.) Which one is not included in phases of memory…
a) Recall
b) Retention
c) Association

d) Learning

10.4 Ways of Enhancing Memory and Factors Which Help To Improve Memory

Ways of Enhancing Memory

It is a common experience that forgetting is usually a source of trouble for people. Everyday conversation, class room participation, performance in examination, interview, presentation and communication in meetings often put demands on us to remember information. Failure in doing so has negative consequences which all of us experience to different degrees in our lives. As a result most of us are interested in improving our memory. The study of memory aids and related techniques is called **Mnemonics**. Some of the techniques used in improving memory are listed below:

1. Organization: While preparing for learning a learner needs to organize the material in some form. Such an organization may help by creating a natural context and provide relevant cues while retrieving the learned material. If the material lacks natural organization, an artificial organization may be created by the learner.

2. Concentration: One of the main reasons of forgetting is inadequate allocation of attentional resources to the material while processing the same. As a result the material is not stored and we fail to recall when we need it. Thus by focusing attention on the material while processing we can increase the probability of storage and recall.

3. Method of loci: As the name implies, this technique uses associations with place or task. The visualization of the same provides cues for recalling the task. By choosing any action properly one can use memory at any point in the day. Use of such mnemonic codes allows one to have vivid and distinctive associations between new information and prior knowledge. Being related to context the cues become very effective. For instance one may have a clear visual image of a building, its rooms, furniture and other details. These may be linked to different ideas and using these linkages, memory of those ideas can be enhanced.

4. Recoding: While dealing with non-meaningful material one may recode the items to be remembered in a more meaningful manner. Recoding may take many forms. For Example people may use the first letter of all the items and make a sentence. This kind of narrative structure works as a cue. Acronyms
(e.g., U.N.O., TV, CBI, WHO) are also used for the purpose in which all the first letters are used. Using elaboration one may add more information which makes the material distinctive. Chunking is a good example of recoding. If a large serial of numbers is presented it becomes difficult to remember. The same, however, may be divided in two or three chunks in some meaningful way using ingenuity. Using elaborative coding one may put many items in a story form and recall the same easily.

Factors which helps to improve Memory:

1. Rate of Learning: It's a fallacy that rapid learning is associated with rapid forgetting 'easy come easy do'. But the reverse is actually true, in rapid learning forgetting is slow & when learning is slow forgetting is rapid. Thus a slow learner, would eventually lose interest in the subject thus forget the material rather quickly than a quick learner.
2. Over learning: Forgetting is said to be taking place as soon as we stop learning. So we must recall immediately after we have learnt & it must continue after intervals. Learning must be carried beyond the point where recall is just barely possible. Over learning beyond the point of complete mastery strengthens the impressions in the brain.
3. Periodic review: This is very similar to self recitation thus as soon as we learn we start the review of the data. Reviews at frequent intervals prevent the decay of the learnt data or information.
4. Kind of Material: Easy, simple, meaningful and logically related materials are easy to retain & forgotten less rapidly. Thus general concepts, scientific interpretations are better retained. Meaningless materials are forgotten quickly. Thus associations make material meaningful & quick to remember.
5. Intention to Learn: Firm determination or strong will to learn is required to achieve success. Same material given to sets of students wherein one is willing & other is not unwilling; in such cases we see that retention was greater in those students who had a determination to learn.
6. Proper Methods of Learning: economical method must be chosen depending on the material to be learnt, so we chose spaced versus mass or whole versus part learning.
7. Self recitation: After reading a lesson a few times, the student must try to review the whole thing without the help of a book. This method may also be termed as attempted recall and it makes a more economical use of one's study time. It also helps towards permanent retention.

Self-check exercise -2

Q1. Mnemonics is a techniques which can be used in…….
Q2. Intension to learn is related as……

10.5 Summary:

Dear learner, In this unit we have also studied about characteristics, ways of enhancing memory and factors which help to improve Memory.

10.6 Glossary*:*

***1. Retention*:** refers to the ability to keep something in possession over time.
2. Recognition: refers to the acknowledgement or identification of something or someone.
3. *Mnemonics*: they are the memory aids or techniques that help individuals remember information more easily.

10.7 Answer to self-check Exercise

Self-check Exercise-1

Ans 1. Learning

Ans 2. Association

Self-check Exercise-2

Ans 1. Enhancing memory

Ans 2. Firm determination or strong will to learn is required to achieve success.

10.8 Reference and Suggested Readings:

- Ebbinghaus, H. (1885/1913). *Memory: A contribution to Experimental Psychology*. New York: Teachers College, Columbia University**.**
- Atkinson, R.C., & Shiffrin, R. M. (1968). "Human Memory: A Proposed System and its control Processes." In k. w. Spence & J. T. Spence (Eds*.), The Psychology of Learning and Motivation* (Vol. 2, pp. 89-195). New York; Academic Press.
- Miller, G.A. (1956). "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." *Psychological Review*,63(2), 81-97.
- Craik, F. I. M., & Lockhart, R.S. (1972). "Levels of Processing: A Framework for Memory Research*." Journal of Verbal Learning and Verbal Behavior*, 11(6), 671-684.
- Baddeley, A. D. (2000). "The Episodic Buffer: A new component of Working?" *Trends in Cognitive Sciences*, 4(11), 417-423.

10.9 Terminal Questions:

Q.1 Describe the different types of Memory?

Q. 2 Explain different ways of enhancing memory in detail**.**

Q. 3 What are the different ways of enhancing memory?

UNIT- 11

Forgetting: Concept of forgetting, Nature, Characteristics, Causes and Types of forgetting.

Structure of the unit

11.1 Introduction

11.1 Introduction

Memory as well as forgetting is important in life. Forgetting cannot be completely destroyed. If forgetting does not take place, the life will be burdened with unpleasant experiences and become miserable. If the process of forgetting becomes fast, it is also not possible to do anything in life. In fact the amount of forgetting should be reasonable.

11.2 Learning objectives

After completing this unit, you will be able to:

- Explain the nature of the forgetting
- Characteristics of forgetting
- Kinds of forgetting.
- Causes of forgetting.

11.3 Concept of Forgetting

It is not possible to remember everything that a person learns since his birth. So a person selects certain things to remember and forgets others in order of priority. But after a time gap, it is observed, that many things are ‘forgotten’. Forgetting is the process of fading of some impressions from the mind, or in simpler words, inability to remember is forgetting. It can, therefore, be said that to remember, forgetting is necessary. The depth of impression of an object or idea depends on the learner’s understanding of the subject matter. If proper understanding of the learnt material occurs, it is retained in the mind for a longer period of time and can be recalled easily; but on the other hand, half-learned material and just a cramming of the subject matter results in forgetting. Famous

psychologist Sigmund Freud said that sometimes forgetting unpleasant or painful experiences is helpful in remembering the useful and pleasant impressions.

Meaning of Forgetting:

Forgetting refers to the loss or inability to retrieve information that was previously stored in memory. It can occur due to various reasons including: decay, interference, retrieval failure, amnesia. Memory as well as forgetting are important in life.

Definitions of Forgetting

- **Adams said,** "True learning is judicious forgetting".

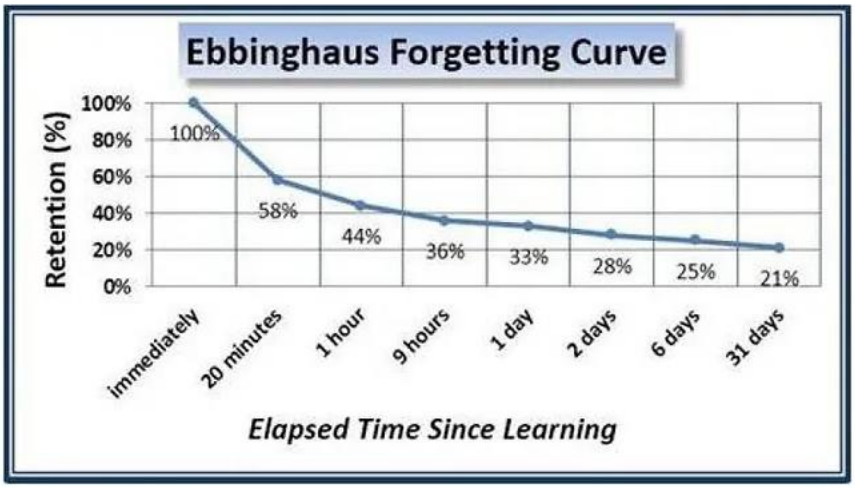
- **Nunn's view,** "Forgetting is failing to retain or able to recall what has been acquired."

- **James Drever**, "Forgetting means failure at any time to recall an experience when attempting to do so or to perform an action previously learned."

- **Sigmund Freud's view,** "Forgetting is a tendency to ward off from the consciousness those experiences of life which are unpleasant and painful."

- **Munn's view**, "Forgetting is the loss, permanent or temporary, of the ability to recall or recognize something learned earlier."

Forgetting curve by Ebbinghaus:



Ebbinghaus conducted various experiments on forgetting and concluded that forgetting is very rapid immediately after the memorization and then decreases slightly. He gave the following result of his experiments.

- After 20 minutes about 72% is retained.
- After 1 hour about 44% is retained.
- After 6 days about 36% is retained.
- After 1 month about 21% is retained.

11.4 Nature/Characteristics of Forgetting

The process of forgetting has the following characteristics:

- It is the inability of retaining an impression in the mind.
- Forgetting means failure to recall and recognize.
- Forgetting is weakening of bonds that are formed in learning.
- Like memory, forgetting is also a mental process.
- When there is memory, there is bound to be forgetting.
- Forgetting usually occurs in the initial stage of a learning process. Once understanding of the subject matter develops, forgetting decreases.
- Forgetting is a tendency to ward off from the consciousness those experiences of life which are unpleasant and painful."

Self- check Exercise -1

Q.1 who proposed the forgetting curve…….?

Q.2 who said that "True learning is judicious forgetting".

a) Sigmund Freud
b) Adams
c) Nunn
d) James Drever

- **Kinds of forgetting:**

  1. Normal and natural forgetting:

  As we cannot retain each and every incident some are forgotten. This is due to the fact that with the passage og time or due to disuse of material learnt we are likely to forget most of the material. The memory traces become fainter and fainter with the passage of time and bonds between the nerves which are formed as a result of memorization become also weaker and weaker. Moreover, we have to perform various other activities which interfere with the previous retained material. The phenomenon is known as retroactive inhibition. Thus some forgetting is quite natural**.**

2. Abnormal, pathological or psychoanalytical forgetting:
This view was put forward by psychoanalytical school, the chief exponent of which was Freud. According to this version forgetting is due to conscious repression by the subject. There are certain experiences and memories which are unpleasant and painful to us and we do not want to retain them in the mind. The result is that they are deliberately repressed in the unconscious. Freud quoted an example of a lady who totally forget the face of man whom she loves very intensely previously, but who did not respond to her love. This morbid forgetfulness is deliberate repression of the undesirable, unpleasant, frustrating, disgusting and painful experiences.

11.5 Causes of Forgetting: After a lot of research, different psychologists have pointed out different causes of forgetting. They are briefly discussed below:

- **Lack of Interest**: One usually forgets about those objects or idea in which he has no interest. Sometimes one remembers something for a long time but eventually if he loses interest in it, he forgets it. Therefore a teacher should try to generate interest in the students while teaching in the classroom so that they remember the subject matter well.

- **Old Age**: An old man forgets more easily than a younger one. This is mainly because of physical and nervous weakness. With age, body cells and organs degenerate and they affect the motor abilities as well as the mental processes like memory.

- **Brain Injury**: Serious brain injury especially of the cerebrum area definitely affects the power to memorize. The cerebrum of the brain determines complex mental functions like thinking, learning, memorizing, imagination etc. If this part is injured them memorization becomes difficult.

- **Lapse of Time**: Forgetting occurs with lapse of time. Impressions created in the mind as a result of learning fade away with the passage of time.

- **Lack of Practice**: When the learnt material is not practiced frequently, then forgetting occurs. A well-organized material is easily remembered and can be practiced frequently. A teacher should carefully organize the subject matter and encourage the students to practice so often that they can remember it well.

- **Repression**: Repression is the process of deliberately trying to forget unpleasant experiences and pushing them into the depth of the mind. However too much repression is not beneficial for the individual as these may find expression in undesirable manner.

- **Emotions:** A person forgets everything under the influence of emotions, such as, in anger, a person forgets everything. He forgets what he is saying. This obstructs his mental activities. Forgetting is possible under all the emotions.

- **Use of Drugs and Alcohol**: Addiction to intoxicating drugs or alcohol has a detrimental effect on our nervous system and this seriously hampers memory.

- **Lack of motivation:** if the person lack of the motivation for learning some task, it would affect their forgetting indirectly, because as a result of motivation, the learning can be effective, and due to this effective learning he can recall very easily. Hence, in absence of motivation and consequently in the state of ineffective learning, the recalling of the individual does not take place easily.

- **Interference by Association**: In some situations, we forget due to interferences in associations. For new learning, these associations create barriers. Sometimes, in order to learn new, previous knowledge create obstacles and sometimes newly learnt knowledge forgets the old knowledge.

- **Fatigue:** If a person will start learning in a physical or mental fatigued-condition, he would not able to recall very easily.

- **Cramming or rote learning**: if some task is done or learnt without its understanding, then that task starts forgetting very rapidly and its recall is not possible.

- **Poor health and defective Mental health state:** Poor health shakes the confidence of an individual and his mental health tensions get enhanced. Such a person cannot concentrate in any task. He can neither learn anything nor is able to recall his past experiences. Hence, the people with poor health and defective mental state have higher forgetting**.**

Self- check Exercise -2

Q.1 Repression means……

a) Natural forgetting

b) Process of recalling

c) Abnormal forgetting

d) None of above

Q.2 Which one is not a cause of forgetting……

a) Lack of interest
b) Fatigue
c) Motivation
d) Lack of practice

11.6 Summary:

Dear learner, in this unit we have gone through the concept of forgetting and types of forgetting in detail and we have also discussed about the characteristics and nature of forgetting. In this unit we have also studied about the causes of forgetting in detail.

11.7 Glossary:

***1. Forgetting curve*:** a graphical representation showing how information is lost over time when there is no attempt to retain it.

2. Repression: called abnormal forgetting where distressing memories are pushed out of conscious.

1 1.8 Answer to self-check Exercise

Self-check Exercise-1

Ans 1. Ebbinghaus
Ans 2. Adams

Self-check Exercise-2

Ans 1. Abnormal forgetting
Ans 2. Motivation

11.9 Reference and Suggested Readings:

- Ebbinghaus, H. (1885). "*Memory*: a contribution to experimental psychology."
- Schacter, D. L. (2001). "*The seven sins of Memory*: How the mind forgets and remembers."
- Baddeley, A. D., Eysenck, M. W., & Anderson, M.C. (2014). *"Memory*." (2nd ed.).
- Roediger, H. l., & McDermott, K. B. (2000*).* "*Tricks of Memory*." Current Directions in Psychological Science, 9(4), 123-127.

11.10 Terminal Questions:

Q1. Explain kinds of forgetting in details.

Q2. What are the different characteristics of forgetting?

Q3. What are the different causes of forgetting?

=====X=====X=====

UNIT-12

Theories of forgetting: (Interference Theory, Trace Change Theory, Forgetting as Retrieval Failure). The way of preventing Forgetting. Structure of the unit

Structure of the unit

12.1 Introduction

12.2 Learning Objectives

12.3 Theories of Forgetting

- Interference theory
- Decay theory
- Retrieval failure theory
- Consolidation theory

Self-check Exercise-1

12.4 How to prevent forgetting and Strategies to minimizing forgetting

12.1 Introduction

Memory as well as forgetting is important in life. Forgetting cannot be completely destroyed. If forgetting does not take place, the life will be burdened with unpleasant experiences and become miserable. If the process of forgetting becomes fast, it is also not possible to do anything in life. In fact the amount of forgetting should be reasonable.

12.2 Learning objectives

After completing this unit, you will be able to:

- Explain theories of learning
- How to prevent forgetting
- Strategies of forgetting

12.3 Theories of Forgetting

Forgetting was first studied in detail by Hermann Ebbinghaus (1885/1913). His basic measure of forgetting was the **savings method**—the reduction in number of trials for re-learning compared with original learning. Findings suggest that the forgetting function is approximately logarithmic. Forgetting is fastest shortly after learning and the rate then decreases with time.

Rubin and Wenzel (1996) found evidence to support Ebbinghaus from group data, but suggest that autobiographical memory does not fit the model.

Baddeley (1997) found that the forgetting rate was unusually slow for continuous motor skills e.g., riding a bike. Most studies look at explicit memory and findings with implicit memory have been inconsistent.

1 Interference Theory

McGeoch, Underwood, *Muller and Pilzecker* are the pioneer advocates of interference theory. According to this theory mechanism of interference is responsible for forgetting**.** This was the dominant approach to forgetting through the 20th century. Interference theory assumes that the ability to remember can be disrupted by what we have previously

learned or by future learning. Interference by previous memories is **proactive interference**. Interference by later learning is **retroactive interference**.

Proactive inhibition occurs when old learning interferes with new learning or previous learning interferes with the recall of present learning. Thus proactive inhibition means forgetting caused by forward action of activity and the memory for the activity that follows here. For example, we may find it difficult to learn a second language when vocabulary or grammar from the first language interferes; or learning a new formula may be hampered an account of previously learned formulae in one's memory.

Retroactive inhibition In Retroactive inhibition new learning interferes with old learning. It means that something works backward to block something else. Retroactive inhibition means backward action. The acquisition of new learning works backward to impair the retention of the previously learned material. For example a second list of the words, formulae or equation may impair the retention of a first list.

Underwood and Postman (1960) showed that interference is:

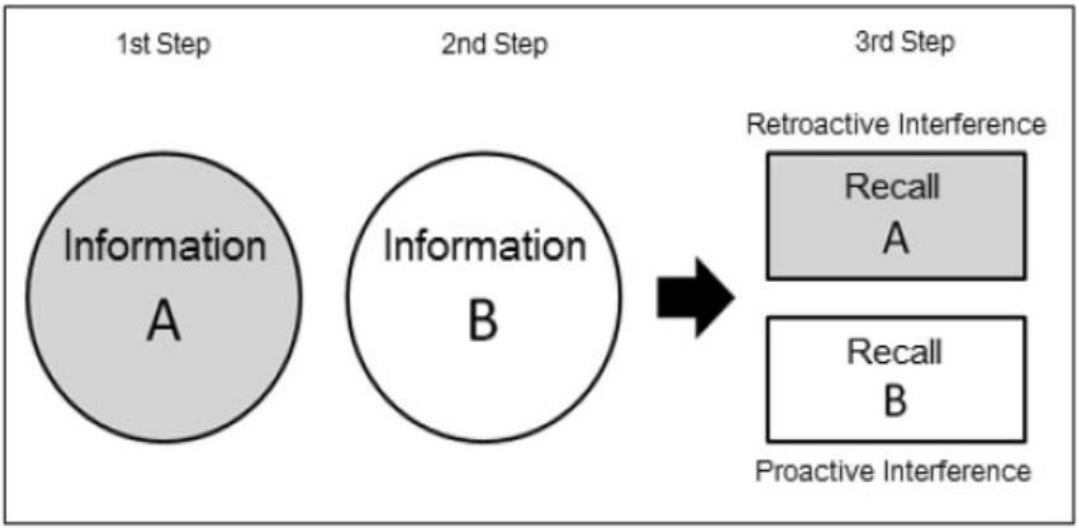


Figure 3.3 (Classic paradigms of interference theory)

- Maximal when two different responses have been associated with the same stimulus.
- Intermediate when two similar responses have been associated with the same stimulus.
- Minimal when two different stimuli are involved.
- Strong evidence for retroactive interference comes from studies which show that post-event questioning can alter memory of an event. Jacoby et al. (2001) argued that proactive interference might occur for two reasons: Due to problems in retrieving the correct response (discriminability); Due to the strength of the incorrect response learned initially (bias or habit) Research shows the latter to be the case.

Lustig and Hasher (2001) used a word-completion task to show that implicit memory is vulnerable to interference. Most research is based on the probably incorrect assumption that individuals passively allow themselves to suffer from interference.
Kane and Engle (2000) found that individuals with high attentional or working-memory capacity would be better able to resist proactive interference unless they were performing an attentionally demanding task at the same time as the learning task.

- Anderson (2003) argued for the role of control mechanisms, which allow us to select certain memories whilst inhibiting others.

- Anderson and Green (2001; see E&K p. 219) provided evidence for an inhibitory mechanism.

Evaluation

There is strong evidence for both proactive and retroactive interference. Itis probable that much forgetting can be attributed to both types of interference. Research is limited in several ways:

- Few studies of processes used to minimize interference.

- The theory largely ignores the role of inhibitory processes.

- Implicit memory information is lacking.

- Special (non-real-life) conditions are needed to see substantial interference.

- Associations learned outside the lab seem less liable to interference than those learned inside.

2 Decay Theory (Disuse theory): -

Decay theory also known as disuse theory is advanced by *Ebbinghaus.* It holds that memory becomes fainter due to disuse with the passage of time. Decay theory explains memories that are stored in both short term and long term memory system, and assumes that the memories leave a trace in the brain. According to this theory, short term memory (STM) can only retain information for a limited amount of time, around 15 to 30 seconds unless it is rehearsed. If it is not rehearsed, the information will start to gradually fade away and decay. This is a result of memory trace fading away. Memory trace is a mark of representation of an experience stored in one's brain. It assumes some kind of change in the physiology of the brain as a result of learning. Due to time passage and infrequent use of memory traces, the normal metabolic processes of the brain bring about the decay or fading of the memory traces of certain information. The traces of

information would then slowly disintegrate and become extinct.

3 Forgetting as Retrieval Failure or Cue-dependent forgetting:

Cue-dependent forgetting or retrieval failure is the failure to recall a memory due to missing stimuli or cues that were present at the time the memory was encoded. Encoding is the first step in creating and remembering a memory. How well something has been encoded in the memory can be measured by completing specific tests of retrieval. Examples of these tests would be explicit ones like cued recall or implicit tests like word fragment completion. This theory states that a memory is sometimes temporarily forgotten purely because it cannot be retrieved, but the proper cue can bring it to mind. Depending on the age of a person, retrieval cues and skills may not work as well. This is usually common in older adults but that is not always the case. When information is encoded into the memory and retrieved with a technique called spaced retrieval, this helps older adults retrieve the events stored in the memory better.

4 Consolidation Theory:

According to consolidation theory, if the newly formed traces are not given time f0r consolidation an they are disturbed, they will be wiped out. *Muller and Pilzecker* (1900) have given a physiological theory for forgetting. The theory assumes existence of memory traces. These traces take time to consolidation. If they are somehow disturbed before consolidation, forgetting will take place. *Duncan (*1949) conducted experiment in which there was complete loss of memory of events taking place just before the electric shock was given. *Hebb* (1949) also gave a theory of forgetting based on similar grounds. He had used to the concept of electric circuits.

Criticism: The theory has been criticized on the following ground:

1. No evidence of physiological traces: The physiological evidences of memory traces have not yet been proved.

2. No specification of period of consolidation: there are reported studies in which items learned long back showed impairment after electroconvulsive shock. The theory fail to clearly specify the period of consolidation.

Self- check Exercise -1

Q.1 when old learning interferes with new learning or previous learning interferes with the recall of present learning the process is called…….?

Q.2 who proposed decay theory.

a) Sigmund Freud
b) Ebbinghaus
c) Nunn

d) James Drever

Q.3 Failure retrieval theory is also known as……..?
Q.4 who proposed physiological theory of forgetting…..
a) Sigmund Freud
b) Nunn
c) James Drever
d) Muller and Pilzecker

12.4 How to Prevent Forgetting and Strategies to Minimize Forgetting:

How to Prevent Forgetting

1. Intend to remember. Remembering well requires that you want to remember. If you have not made a decision to remember what you are reading/studying, you will forget almost immediately.

a. Describe the place where you usually read. (Is it quiet? No TV? No stereo? No talking?)
b. Are you motivated to remember what you read/study? For example, can you give a reason for remembering these ideas:

- Score of the football game
- Directions for "jumping" a dead battery – when your battery is dead
- Directions for getting to a job interview
- Textbook material for a test

c. Even though you are not interested in the subject you must read about, are you willing to use good reading strategies?

- Do you preview before you read?
- Do you ask questions and then read to answer your questions?

2. Don't overload the memory. Seven items is the most our memories can comfortably handle in one bite, but even seven is too much for most people. Your memory prefers to have only three, four, or five things at one time. Therefore, if you need to remember something that has more than four or five items in a group, you will have to break up the group into smaller bites.

3. Understand before you try to remember. If you don't understand something, your memory will have difficulty storing it. Work on understanding before you try to remember.

4. **Select the most interesting points.** You can't expect to remember everything you read. Select the most important points by looking for answers to questions you have

formed. No one can remember everything. If you try to remember every idea, you will probably not remember much of anything.

5. Organize the material to be learned. Your memory works best when the information is organized. Organize first. Use formal or informal outlines or use mapping, and your memory will work for you. You may understand something when you see it, but if your mental filing system isn't working, you may not be able to find the right information when you need it.

6. Relate the ideas to what you already know. Your memory will store new ideas if you relate them to old ideas. Make an association, create a mental picture, or use mnemonic devices to relate unknown information to information you already know.

7. Introducing motivation. Remembering is improved if motivation is introduced in the lesson. Motivation creates interest in the lesson, helps in capturing attention, facilitates learning and memorization**.**

8. Use reward and punishment. It should be noted that the teacher should employ psychological methods (reward and punishment) in the art of teaching and learning as these are very useful for the pupils.

9. Use mnemonic devices. These memory devices aid memory, but should be simple, clear, and vivid. You remember the unusual, the funny, or both.

a. Rhymes: This method uses rhyming words to help you remember.

Example:

"I before E, except after C, or when sounded like A, as in neighbor and weigh."

b. Acronyms: A word made from the first letters of other words aids memory.

Examples:

"I. R. Soul" from the 6 strategies for better memory

I ------ Intend to remember

R ----- Relate the information

S ----- Select important ideas

O ----- Organize the details

U ----- Understand the ideas

L ----- Limit the amount

“PRELIMINARY” to help police officers remember what steps to follow when called to the scene of a crime.
P - Proceed to the scene.
R - Render assistance to the injured.
E - Effect the arrest of the perpetrator.
L - Locate and identify witnesses.
I - Interview complainant and witnesses.
M - Maintain the scene and protect evidence.
I - Interrogate suspects.
N - Note all conditions, events, and remarks.
A - Arrange for collection of evidence.
R - Report the incident fully and accurately.
Y - Yield Responsibility to detectives.
c. Sentences: Memory sentences are made where the first letters of words in the sentence are the same as the first letters of words that need to be recalled.

10. Test yourself repeatedly. Memorize the material through repeated self-testing. Look at the first item in your notes; then look away and try to repeat it to yourself. After you learn each new item, go back and test yourself on all the previous items.

11. Over learn the material. If you study a subject beyond the time needed for perfect recall, you will increase the length of time that you will remember it.

12. Study before going to bed, but not ON your bed! Study thoroughly the material to be learned. Then go right to sleep without watching a late movie or allowing other activities to interfere with your new learning. Your mind will work to absorb much of the material during the night. In the morning spend a few minutes reviewing to solidly fix the material in your memory.

Strategies to Minimize Forgetting

With the help of following technique forgetting can be minimized. GULP is an acronym for an effective four step process to improve short and long term memory. GULP means **“Get it, Use it, Link it, and Picture it”.**

Step 1: G - Get It

- The true art of memory is the art of attention
- Be present and conscious during the initial learning

- Pay attention, listen and Experience the initial learning with as many senses as possible

Step 2: U - Use It

- Review material immediately and repeat it
- Write it down and sing or chant it
- Recreate the experience of the learning

Step 3: L - Link It

- Associate new learning with something already known
- Link it to something it sounds like (acoustical link) and link it to a location
- Make an acronym link and mind map it
- Rhyme it, group it, categorize it and alphabetize it

Step 4: P - Picture It

- Create a visual image of the association, use colour, make it move and vivid
- Make it bizarre and exaggerate it

Use all senses - seeing, hearing, tasting, smelling association and linking techniques.

Self- check Exercise -2

Q.1 what are the six strategies for better memory?
Q.2 What are the four steps/ strategies to Minimize Forgetting?

12.5 Summary:

Dear learner, in this unit we have gone through the different theories of forgetting which includes interference theory, decay theory, retrieval failure theory and consolidation theory in detail and we have also discussed about the ways how to prevent and minimize the forgetting.

12.6 Glossary*:*

1. Retroactive inhibition: In Retroactive inhibition new learning interferes with old learning

2. Proactive inhibition: occurs when old learning interferes with new learning or previous learning interferes with the recall of present learning.

12.7 Answer to self-check Exercise

Self-check Exercise-1

Ans 1. Proactive Inhibition
Ans 2. Ebbinghaus
Ans 3. Cue- dependent theory
Ans 4. Muller and Pilzecker

Self-check Exercise-2

Ans 1. I ------ Intend to remember, R ----- Relate the information, S ----- Select important ideas, O ----- Organize the details, U ----- Understand the ideas, L ----- Limit the amount

Ans 2. Get it, Use it, Link it, and Picture it

12.8 Reference and Suggested Readings:

- Tulving, E., & Craik, F. I.M. (Eds.). (2000). *"The Oxford Handbook of Memory."*
- Wixted, J. T. (2004). "*The psychology and Neuroscience of Forgetting.*" Annual Review of Psychology, 55, 235-269.
- Tulving, E. (1974). "*Cue-Dependent Forgetting*." American Scientists, 62(1), 74-82.
- Anderson, M. C., & Neely, J. H. (1996). "*Interference and Inhibition in Memory Retrieval."* In E. L. Bjork & R. A. Bjork (Eds.), Memory.

12.9 Terminal Questions:

Q1. What are the different theories of forgetting explain in detail.

Q2. Explain different strategies of minimizing forgetting.

=====X=====X=====

UNIT-13

Motivation: Concept, Nature, Functions and Relationship with Learning

Structure of the unit

13.1 Introduction

When you come from school, you feel hungry and want to eat something. You want to eat because there is a force which compels you to have food. Likewise if a question is asked

why do you want to join a college? The answer can be given in various ways like you want to learn or you need a degree to get a good job. You may want to join college to have lot of friends. This basic question of the 'why of behavior' or factors which compel us to do certain activities makes us study the psychological process called motivation. In this lesson you will study about the nature of motivation, types of motives, intrinsic and extrinsic types of motivation, conflict, and frustration. Understanding motivation helps us to have insights into the dynamics of action.

13.2 Learning objectives

After completing this unit, you will be able to:

- Explain concept of motivation
- Describe various strategies for enhancing motivation
- Functions and relationship with learning.

13.3 Concept of Motivation and Types of Motives

Concept of motivation

Motivation is one of the most frequently used words in psychology. It refers to the factors which move or activate the organism. We infer the presence of motivation when we see that people work toward certain goals. For example, we might observe that a student works hard at almost every task that comes to him/her from this we infer that the person has motive to achieve.

All human behavior appears to arise in response to some form of internal (physiological) or external (environmental) stimulation. The behaviors, however, are not random. They often involve some purpose or goal. It is often held that behaviors take place as a result of the arousal of certain motives. Thus motivation can be defined as the process of activating, maintaining and directing behavior towards a particular goal. The process is usually terminated once the desired goal is attained by the person.

Motivation is defined as an inspiration that propels someone into an action. It is an internal state or condition that activates and gives direction to our thoughts, feelings, and actions (Lahey, 1995). In the opinion of Oladele (1998), motivation is a process by which the learner's internal energies are directed toward various goal objects in his/her environment. These energies or arousals push an individual in achieving his goals. An individual may be highly motivated to perform well in a task and completely unmotivated in another. This means that when people are motivated, they will work tirelessly to achieve their aspirations.

Maslow (1970) believed that motivation leads to growth and development, and that need satisfaction is the most important sole factors underlying motivation. Maslow furthered explained that man is perpetually in needs and that the resources to satisfy those needs are limited. In view of this, man places his/her wants on the scale of preference, that

he/she selects the most pressing need. After this need has been satisfied, it becomes less important, paving way for the next on the rank.
The needs of man may either be primary or secondary. Primary needs are the physiological wants of man. It may be the need for water, rest, sexual intercourse, hunger and thirst. Secondary needs are the desire for autonomy, affection, or the need for safety and security. For example, the desire of a labourer to take a glass of water after thirst is a primary need. At the same time, craving of the students to stay in a serene classroom environment is a secondary need.

Meaning of motivation:
Motivation is derived from the word *'movere'* which means 'to move'. It is the process of arousing actions, sustaining activity in progress, regulating and directing pattern of activity through energy transformations within the tissues of the organism. It is an art of inculcating and stimulating interest in studies and in other such activities. Some of the aspects of motivation are stressed by the terms: Incentives, intention, impulse, desire, drive, determination, need, urge, wish, want, will, attitude, purpose and the like.

Definitions:

1. Definition by Johnson: "Motivation is the influence of general pattern of activities indicating and directing behavior of the organism".

2. Definition by Atkinson: "The term motivation refers to the arousal of a tendency to act, to produce one or more effect."

3. Definition by Good: "Motivation is the process of arousing, sustaining and regulating activity."

4. Definition by Skinner: "Motivation in school learning involves arousing, persisting, sustaining and directing desirable behavior."

5. Definition by Guilford: "Motivation is an internal factors or condition that tends to initiate and sustain activity."

Types of Motives: There are two types of Motives**:**

- ***Biological (Physiological motives).***
- ***Psychosocial motives.***

Biological Motives: These motives also known as they are guided mostly by the physiological mechanism of the body. These motives focus on the innate, biological causes of motivation like hormones, neurotransmitter, and brain

structure (hypothalamus, limbic system etc.) For example: hunger, thirst and sex motives.

Psychosocial Motives: They are primarily learned from the individual's interactions with various environmental factors. These motives focus on psychological, social as well as environmental factors and how they interact with each other to produce motivation. For example: need for achievement, affiliation, power, curiosity and exploration, and self- actualization motives.

Self- Check Exercise-1

Q1. Motivation is derived from the word…….

Q2. How many types of motives?

13.4 PROCESS OF MOTIVATION:

The elements of the process of motivation are:
(1) Motive, (2) Behavior, (3) Goal, (4) feedback. The process of motivation has been shown below:

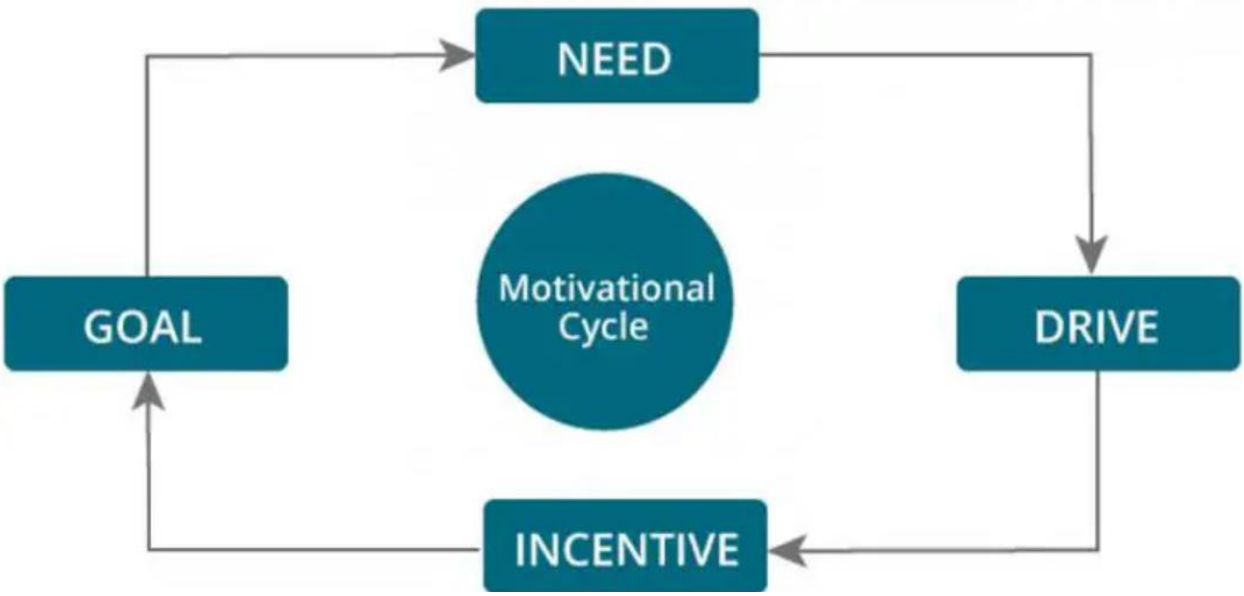
1. Motive: Motives prompt learner to action. Motives determines the general directions of learner's behavior.

2. Behavior: Behavior is a series of activities of an individual. It is generally motivated by a desire to achieve a goal.

3. Goal: Motives are directed towards goals. Goals are the end which provides satisfaction to learners.

4. Feedback: Feedback may be in the form of reduction or increase in tension.

Motivation cycle:



Self- Check Exercise-2

Q1. Which one is not a biological motive…..?

a) Hunger
b) Thirst
c) Power
d) Sex

Q2. Complete the process of motivation:
Motive, behavior, goal…?

13.5 Summary

Dear learner, in this unit we have gone through the concept of Motivation and types of motives which includes biological motives and psychosocial motive. After that we discuss about the process of motivation having mainly four elements i.e. (1) Motive, (2) Behavior, (3) Goal, (4) feedback.

13.6 Glossary

Stimulation: An action or thing that causes someone or something to become more active or enthusiastic.

Motives: A reason for doing something.

13.7Answer to self-check Exercises

Self-check Exercise-1

1. Movere
2. Two

Self-check Exercise-2

1. Power

2. Feedback

13.8 References and suggested readings

- Bandura, A. (1997*). "Self-Efficacy: The exercise of control."* W.H. Freeman.
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *"The Motivational to work."*
- Locke, E. A., & Latham, G. P. (2002). *"Building a practically Useful Theory of Goal Setting and Task Motivation."* American Psychologist, 57(9), 705-717.

13.9 Terminal Questions

1. Define the concept of motivation and it's types.

2. Describe the process and cycle of motivation.

Unit-14

Types of Motivation; Strategies for Enhancing Motivation

Structure of the unit

14.1 Introduction

Motivation is a crucial element in driving human behavior, influencing how we pursue and achieve our goals. There are various types of motivation, each affecting our actions in different ways, such as intrinsic motivation, which is driven by internal rewards, and extrinsic motivation, which is influenced by external factors. Understanding these types is essential for developing effective strategies to enhance motivation. These strategies can range from setting clear goals and finding intrinsic rewards to creating a positive environment and maintaining physical health. By leveraging these approaches, individuals can boost their motivation, leading to greater productivity and personal fulfillment.

14.2 Learning objectives

After completing this unit, you will be able to:

- Explain types of motivation
- Describe various strategies for enhancing motivation

14.3 Types of Motivation:

There are two types of motivation or arousals. They can either be internally or externally driven. The desire for food or sex arises from within us (intrinsic), while the yearning to obtain recognition or approval is influenced by the conditions in our environment (extrinsic). In view of the above explanation, motivation is divided into intrinsic and extrinsic.

1. Intrinsic Motivation: Is an internal force or motive within the individual which propels him/her into emitting certain behavior. It is an innate or genetically predetermined disposition to behave in a particular way when he/she faces a particular situation. This type of motivation can make an individual to have the feelings of self-confidence and competence (Deci and Ryan, 1985). A student who is intrinsically motivated may carry out a task because of the enjoyment he/she derives from such a task. In another way, a dog that sees a bone and runs for it, did that because of the satisfaction it derives from eating bone. This type of behavior does not require any prior learning. Sighting the bone changes the behavior of the dog and propels it to act.

2. Extrinsic Motivation: Is the external or environmental factor, which sets the individual's behavior into motion. The incentive/reinforcer drives an individual's behavior towards a goal. A student that is extrinsically motivated will execute an action in order to obtain some reward or avoid some sanctions. For example, a student who read hard for the examination did so because of the desire to obtain better grade. The case also goes for a runner who wants to win a prize, he/she will need constant practice than a person who wants to run for the fun of it. Extrinsic rewards should be used with caution because they have the potential for decreasing exiting intrinsic motivation.

For example extrinsic incentive may spur a student to actively participate in the task for which the student has no interest, but may undermine intrinsic and continuing motivation in him/her (Deci et al, 1985). Therefore, students' motivation automatically has to do with the students' desire to participate in the learning process. It also concerns the reasons or goals that underlie their involvement or non-involvement in academic activities.

Self-check Exercise-1

Q.1 what are the two types of motivation?

Q.2 …….. Motivation benefit you to achieve your goals in long run.

14.4 Principles of Motivation:

Here are some principles of motivation.

1.) Successful experiences are important motivators.

2.) Reward rather than punishment is a better motivation.

3.) The pupils/students interest is important in classroom learning.

4.) Success generally increases the level of motivation.

5.) Feedback as a tool about the pupils/students progress can be effective motivation.

6.) A pleasant learning environment can be effective motivator.

7.) Intrinsic motivation is better than extrinsic motivation.

Self-check Exercise-2

Q1. According to principles of motivations……..rather than …….is a better motivation.

Q2. Reward and Success increases the level of ……..

1.5 Strategies for Enhancing Motivation

Enhancing motivation involves various strategies aimed at boosting one's drive to achieve goals and maintain productivity. Here are some effective methods:

1. **Setting Clear Goals**: Establishing specific, achievable, and measurable goals provides direction and a sense of purpose. Breaking down larger goals into smaller, manageable tasks can make them less overwhelming and more attainable.

2. **Finding Intrinsic Motivation**: Focus on internal rewards, such as personal growth, satisfaction, and enjoyment of the task itself. Engaging in activities that align with personal interests and values can significantly boost intrinsic motivation.

3. **Creating a Positive Environment**: Surrounding oneself with supportive and positive influences, such as encouraging peers and mentors, can enhance motivation. A conducive environment that minimizes distractions and fosters focus is also crucial.

4. **Using Rewards and Incentives**: Implementing a system of rewards and incentives can provide extrinsic motivation. These can include tangible rewards like bonuses or intangible ones like praise and recognition.

5. **Building Self-Discipline**: Developing self-discipline through regular habits and routines can help maintain consistent effort and perseverance. Techniques like time management, setting priorities, and avoiding procrastination are essential for sustaining motivation.

6. **Staying Healthy**: Physical health impacts mental motivation. Regular exercise, adequate sleep, and a balanced diet contribute to better energy levels and overall well-being, enhancing one's ability to stay motivated.

7. **Visualization and Positive Thinking**: Visualization techniques involve imagining the successful completion of tasks and achieving goals. Coupled with positive affirmations, this can reinforce a motivated mindset.

8. **Seeking Feedback and Learning from Failure**: Constructive feedback helps identify areas for improvement and provides a sense of progress. Viewing failures as learning opportunities rather than setbacks can maintain motivation and resilience.

Implementing these strategies can create a supportive framework for enhancing motivation, leading to improved performance and goal achievement.

Self- Check Exercise-3

Q1. Write 04 Strategies for Enhancing Motivation.

14.6 Summary: Dear learner, in this unit we have discussed about types of motivation and principles of motivation. Along with we have discussed about strategies for enhancing motivation.

14.7 Glossary*:*

1. Intrinsic motivation: Is an internal force or motive within the individual which propels him/her into emitting certain behavior.

2. Extrinsic motivation: Is the external or environmental factor, which sets the individual's behavior into motion.

14.8 Answer to self-check Exercise:

Self-check Exercise-1

Ans. 1 Intrinsic Motivation, Extrinsic Motivation

Ans.2 Intrinsic

Self-check Exercise-2

Ans 1. Reward, Punishment

Ans 2. Motivation

Self-check Exercise-3

Ans1. Setting Clear Goals, Using Rewards and Incentives, Staying Healthy, Building Self-Discipline

14.9 Reference and Suggested Readings:

- Bandura, A. (1997*). "Self-Efficacy: The exercise of control."* W.H. Freeman.
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *"The Motivational to work."*
- Locke, E. A., & Latham, G. P. (2002). *"Building a practically Useful Theory of Goal Setting and Task Motivation."* American Psychologist, 57(9), 705-717.
- Ryan, R. M., & Deci, E.L. (2000). *"Self-Determination Theory and the facilitation of Intrinsic Motivation, Social Development, and Well-Being."* American Psychologist, 55(1). 68-78.
- Heckhausen, J., & Heckhausen, H. (Eds.). (2008). *"Motivation and Action."*

14.10 Terminal Questions:

Q1. Write different types of motivation in detail?

Q2. What are the different principles of motivation?

=====X=====X====

UNIT- 15

Theories of Motivation: Maslow's Theory, Psycho-Analytical Theory of Motivation.

Structure of the unit

15.1 Introduction

Motivation in one form or the other is always present at the root of all human activities, as human behavior in one form or the other is guided by motives or drives. In this unit we are going to discuss different types of motivational theories in detail to come to understand

that how learning and motivation is positively related to each other. Learning and motivation both are parallel going and without motivation effective learning is not possible.

15.2 Learning objectives

After completing this unit, you will be able to:

- Understand the concept of motivation
- Various theories of learning
- Relation between learning and motivation.

15.3 Theories of Motivation:

Different psychologists have developed several theories on motivation. Notable among them are discuss as follows

Maslow's Theory of Motivation:

Abraham Maslow was a foremost Psychologist. He developed a theory (Human Needs) in which he identified seven vital human needs according to level of urgency or exigency. These needs according to the Maslow are:

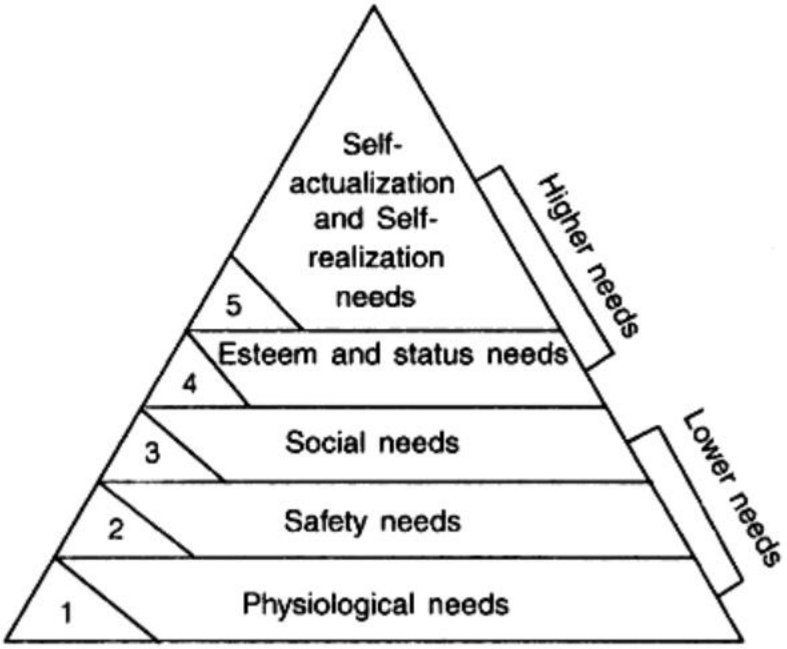


Figure 4.1 (Maslow's hierarchical structure of needs)

1. Physiological Needs: These are the biological or survival needs of man. They are the most basic needs that control the other needs. Until these needs are fulfilled or satisfied, man will not be able to go to the next level. Examples of these needs are the desire to eat food when hungry, drink water when thirsty or the need for rest, sex, air or to excrete

unwanted materials from the body systems. After these survivals needs have been adequately taken care, they become less important and one moves to the next which is the desire for security and safety.

2. Safety and Security Needs: Human beings require safety and protection from danger or external aggressors. After one has successfully dealt with physiological needs, it is desirable to cater for psychological needs. At this point, Man will be thinking of where to live and efforts will be made to keep him/herself from impending dangers, threats or hazards. The hallmark of these needs is the quest by an individual to seek for conducive or peaceful abode. For example, the desire of war victims to migrate from their original country to become refugees in another country is the need for safety and security. Also, a chicken that quickly hibernates under its mother on sighting an eagle did so because of its desire for safety.

3. Love and Belongingness Needs: This involves the aspiration of man to establish a cordial relationship with others. It is the need of man to love and be loved. At this level of need, people will like to extend their hands of fellowship or comradeship to their friends, mates, co-workers or neighbours. They equally will expect that such gestures be reciprocated by others. On yehalu (1988) believes that this need is manifested in our affiliations and friendships.

4. Achievement Needs: Achievement needs are divided into two. These are the need to achieve success and the need to avoid failure or setback. The need to attain success or freedom drives man to go extra miles. This need motivates an individual to emit a behavior that will make him/her command respect from others.

5. Self-Esteem Needs: These are the things we desire in order that our ego will be boosted. After the individual has been accorded respect or recognition by others, the next thing for him/her is to start seeking for the things that will make him/her enjoy considerable influence from others. The ability of someone to fulfil this condition makes him/her feel superior and self-confident. Inability to fulfil this need, makes a person feel dejected or inferior.

6. Aesthetic Needs: These needs include the desire of people to pursue or admire beautiful things; their desire for beautiful and expensive cars, houses, materials, gorgeous and expensive dresses and beautiful surroundings with well trimmed and maintained flowers.

7. Self-Actualization Needs: When a person has successfully achieved or gained the most basic needs or wants, then such an individual will want to get a rare opportunity. It is the time when a person will like to distinguish him/herself, by seeking for power or extra-ordinary achievement. At this point person is said to have reached the peak of his potentials.

Psychoanalytical theory of motivation

This theory which has been explained by Sigmund Freud, deals with unconscious motivation. Freud believed that the human psyche could be divided into the conscious and unconscious mind. The ego, the representation of the conscious mind, is made up of thoughts, memories, perceptions, and feelings that give a person their sense of identity and personality. According to Freud, the inborn tendencies called instincts influence our behavior.

There are two groups of instincts with opposite nature:

(a) Life instincts (Eros): these instincts have the life energy called Libido-which motives the individual towards constructive activities like love, sympathy/helping others, etc.

(b) Death instincts (Thanatos)-motivate the individual for destructive activities like murder, suicides, aggression, attack, etc.

Freud has emphasized that the unconscious motives play more dominant role in determining our behavior, than conscious or preconscious. He pointed that, our action are determined by our unconscious motives.

According to him, our unconscious mannerisms, slips of tongue and pen, phobias are the result of these hidden motives. These hidden motives may also drive the people towards various psychosomatic disorders like chronic headaches, insomnia, gastric troubles, etc. our motives also appear in the form of dreams according to Freud.

Self -check Exercise-1

1. According to Maslow what is basic needs..

   a) Self esteem needs.

   b) Social needs

   c) Physiological needs

   d) Self actualization needs

2. Who gave the psychoanalytical theory of motivation……?

15.4 Summary:

Dear learner, in this unit we have gone through the different theories of motivation which includes theory of needs given by Maslow and psychoanalytical theory of motivation given by Sigmund Freud and Behavioristic theory given by different behaviorist in detail.

15.5 Glossary*:*

***(a) Life instincts (Eros)*:** these instincts have the life energy called Libido-which motives the individual towards constructive activities like love, sympathy/helping others, etc.

(b) Death instincts (Thanatos)-motivate the individual for destructive activities like murder, suicides, aggression, attack, etc.

15.6 Answer to self-check Exercise:

Self-check Exercise-1

Ans 1. Physiological needs

Ans 2. Sigmund Freud

15.7 References and suggested readings :

- Maslow, A. H. (1943). “A Theory of Human Motivation.” *Psychological Review*, 50(4), 370-396.
- Herzberg, F. (1966*). Work and the Nature of Man*. World Publishing Company.
- McClelland, D. C. (1961). *The Achieving Society*. Van Nostrand. & McClelland, D. C. (1987*). Human Motivation*. Cambridge University Press.
- Locke, E. A., & Latham, G. P. (2002). “Building a practically useful theory of goal setting and task motivation: a 35-years odyssey*.” American Psychologist*, 57 (9), 705-717.
- Deci, E. L., & Ryan, R. M. (1985*). Intrinsic Motivation and Self-Determination in Human Behavior.* New York: Plenum.

15.8 Terminal Questions:

- Describe the theory of need in detail.
- Explain the concept of behavioristic motivation in detail.
- What is the Psychoanalytical view regarding human motivation?

=====X==xx==X=====

Unit-16

Behavioristic theories of motivation and Classroom Implications of Theory of Motivation

Structure of the unit

16.1 Introduction

Behavioristic theories of motivation focus on how external stimuli and reinforcements shape behavior. These theories, including operant conditioning by B.F. Skinner, emphasize the role of rewards and punishments in influencing motivation. In the classroom, the implications of these theories are significant, as teachers can utilize positive reinforcement to encourage desired behaviors and apply consistent consequences to deter undesirable ones. By understanding and applying behavioristic principles, educators can create structured and motivating learning environments that enhance student engagement and achievement.

16.2 Learning objectives

After completing this unit, you will be able to:

- Understand the various behavioristic theories of motivation
- Describe the classroom implications of theory of motivation

16.1 Behavioristic Theories of Motivation:

Thorndike, Hull, Miller and Dollard, Spence, Skinner and P.T Young are the chief exponents of Behavioristic theories. Concepts of motivation are largely governed by the principle of reinforcement. Behavior is assumed to be purposive, and different theoretical concepts are employed to deal with the energizing aspect and the directive aspects of motivation. The classical form of behaviorism utilizes a “drive reduction” concept, which regards the basic source of energy in the organism as undifferentiated drive. The direction of behavior, then, is conceived to be a product of learning mechanisms for channelizing this drive into goal oriented behavior acts. Many of these classical Behavioristic theories imply that a drive arises directly from need states within the organism, especially physiologically-based tissue needs. Newer theories, for example, Skinner exercise purely a functional concept of drive, stressing that no assumptions need to be based about internal energy source beyond recognition of the functional purposivism or goal directedness of behavior. Behavior is addressed towards certain consequent state, and if these states can be observed to be consistently pursued in an organism’s behavior, they may be functionally defined as rewarding states.

In short, we can say that Behavioristic theories of motivation have the following main tenets:

(i) All behavior is motivated in the sense that all behavior is based on needs and drives.

(ii) All learning involves rewards in the sense that only responses that reduce need or drive are stamped in.

(iii) Needs may be biological or psychological, primary or secondary.

(iv) Energy is the function of need reduction, or of inferred (functional) reinforcement, its direction is accounted for by habits.

Self -check Exercise-1

Q.1 Who are the chief exponents of Behavioristic theories?

Q.2 All behavior is motivated in the sense that all behavior is based on …… and …….

16.4 Classroom Implications of Theory of Motivation

• It is important for the teacher to know the basic needs of his/her students and cater for these according to level of their important. For example, the teacher needs to think first of students' food, rest or health before thinking of teaching them.

• When the teacher praises his/her students for doing well in their study or assignment, they will be spurred to sustain that effort.

• A classroom, which is well decorated or adorned with beautiful charts, and learning materials will be students' friendly. The students' minds will always be attracted to the activities in a beautifully adorned classroom.

• In the classroom, students like being recognized or respected. When their views are recognized or respected, they will have their confidence boosted and developed.

• From the beginning of the lesson, the teacher should endeavor to make his/her students know possible outcome of the lesson. It is when the students know what they are likely to achieve from the lesson that their attention will be arrested and sustained.

• Feedback is necessary if the interest of the students must be sustained in the classroom. So the teacher should always strive to let them know how they are performing in the teaching learning activities.

• The teacher should also provide/plan for extra-curricular activities for his/her students. When the teacher does this, the students will have opportunity of establishing a genuine interaction among them. Besides, they will be able to display their hidden talents.

• When dealing with the students in the classroom, the teacher should take into consideration, the developmental changes and differences in the students

Before deciding on the particular motivation pattern to be employed.

Self -check Exercise-2

1. Who is not associated with behavioristic theory of motivation

a) Skinner

b) Thorndike

c) Lewin

d) Hull

2. …….. is necessary if the interest of the students must be sustained in the classroom

16.5 Summary

Behaviuoristic theories of motivation emphasize learning through associations and consequences. In the classroom, these theories suggest using rewards, positive associations, and consistent consequences to shape student behavior and enhance motivation. Effective strategies include reinforcement, clear routines, and immediate feedback.

16.6 Glossary

1. Organism: something having many related parts that function together as a whole.

2. Recognition: The fact that you can identify somebody/something that you see.

16.7 Answer to Self-check Exercises

Self-check Exercis-1

Ans.1 Thorndike, Hull, Miller and Dollard, Spence, Skinner and P.T Young

Ans.2 Needs, Drives

Self-check Exercise-2

Ans.1 Lewin

Ans.2 Feedback

16.8 References and suggested readings

- Herzberg, F. (1966*). Work and the Nature of Man*. World Publishing Company.
- McClelland, D. C. (1961). *The Achieving Society*. Van Nostrand. & McClelland, D. C. (1987*). Human Motivation*. Cambridge University Press.

- Locke, E. A., & Latham, G. P. (2002). “Building a practically useful theory of goal setting and task motivation: a 35-years odyssey*.” American Psychologist*, 57 (9), 705-717.

16.9Terminal Questions

1. Write down Classroom Implications of Theory of Motivation.