ADVANCED DIPLOMA IN GUIDANCE AND COUNSELLING (DGC)

DGC 105: EDUCATIONAL PSYCHOLOGY – LEARNING AND INFORMATION PROCESSING

UNIT ONE: EDUCATIONAL PSYCHOLOGY: LEARNING AND INFORMATION PROCESSING

INTRODUCTION

As you see from the title of this first unit, we are interested in knowing what educational psychology is and its different branches. If there is any one domain which a school principal, head teacher, teacher, supervisor and inspector as major stake holders in basic education need to have an understanding, it is children's learning. This is what educational psychology is trying to provide its recipients. Educational psychology is one of the foundation courses in general education which aims at applying the knowledge of psychology – the study of the mind – to learning problems children are facing in schools.

Knowledge of educational psychology will enable you to be able to describe and measure school children's behaviour, predict, control, modify and explain the behaviour in relation to their teaching and learning. In other words, educational psychology deals with the application of psychology in the classroom with the aim of achieving maximum learning effectiveness.

OBJECTIVES

By the end of this unit, you should be able to:

(i) define the term education psychology;

(ii) mention the branches of educational psychology;

(iii) enumerate the scope of educational psychology;

(iv) state why educational psychology is taught in the teacher education programme;

HOW TO STUDY THIS UNIT

(i) Go through this unit line by line taking note of key ideas as you go along.

(ii) Check difficult words in your dictionary.

(iii) Study the unit as laid down, attempting all activities and doing the assignments at the end of the unit, following all instructions.

WORD STUDY

Psychology - Study of the behaviour of man and other animals.

Educational Psychology – Application of psychological findings to the filed of education

WHAT EDUCATIONAL PSYCHOLOGY IS

Education psychology is an important branch of applied psychology which combines the two different fields of education and psychology. In this branch of knowledge, ways in which the learner can be brought in – to successful interaction with what he learnt, the learning environment and the teachers teaching them are studied.

In other words, educational psychology studies the behaviour of people involved in the process of instruction, socialization, provision of information and in the teaching and learning of attitudes, values, teaching and learning of attitudes, values and skill in educational organizations (Owuamanam & Owuamanam, 2002).

By educational organizations we are referring to ministries of education, schools, colleges, universities and other institutions dealing with administration and planning of education and research activities. Educational psychologists are, therefore, concerned with the behaviour of the learner, the teacher, the supervisors and inspector, as well as the suitability of learning techniques and environment in meeting the needs of the individual. They also work as curriculum outcomes assessors and evaluators. Educational psychology can go a long way to provide us with a means of making evaluation of our own strengths and weaknesses as learners and teachers.

ACTIVITY I

c. Define the term 'Psychology'

d. Define the term educational psychology in your own words.

DIFFERENT BRANCHES OF EDUCATIONAL PSYCHOLOGY

Educational Psychology has been regarded as the systematic study of individuals within the educational settings. As an academic discipline, it is related to the study of man in society as embodied in sociology and anthropology. In general, it derives its data from:

(i) **Social Psychology** – This area is concerned with the study of social behaviour of individuals as they were influenced by the structure, customs, norms and institutions of the people or society to which they belong. In other words, the effects of other people on the behaviour of a target individual.

The social psychologist will be interested in topics like; the acquisition of beliefs, attitudes and values, the behaviour of the individuals in a group, public opinion and prejudices, social influences on perception and thought and so on.

A new area of social psychology, which is now of major impact is cross-cultural psychology which deals with the similarities and differences in psychology of people from different cultures. Notable areas of interest here are the comparative studies of child development among African children and Euro-American children.

(ii) **Abnormal/Clinical and Counselling Psychology** – This is the study of the individual's health i.e. individuals with behaviour disorder such as people with emotional problems and/or adjustment problems. Psychologists who work in this area are trained to diagnose and treat psychological problems ranging from normal development crises of adolescence to extreme psychotic conditions – neuroses and mental disorders. This branch of psychology is often referred to as psychopathology and psychologists who work in this area are known as clinical psychologist or psychiatrists or counseling psychologists.

(iii) **Development psychology** – Changes in behaviour and behaviour potential over the life span are the concerns of development psychologists. The area deals with the study of the progressive and systematic changes taking place in the nature of the child as he grows and the influence of his environment on this growth. In other words, developmental psychologies adopt the life-span approach to the study of behaviour. This area is subdivided into child psychology which deals with the development of young children, adolescent psychology, which is the study of the development and behaviour of children during the adolescence period and adulthood psychology which deals with the study of the behaviour of adults.

(iv) **Experimental psychology** – This is referring to a way of studying behavioural processes using the experimental method. Psychologists in this area usually study a restricted set of problems including: learning, sensation and perception, human performance, motivation, emotions, language, cognition, communication, thinking, imagining, remembering, forgetting and discovering. These types of psychologists deal with the psychological basis of behaviour.

(v) **Biological psychology** – Psychologists in this area are closely associated with experimental Psychologists and use many of their methods. However, they are more explicitly concerned with the biological underpinnings of behaviour, for instance, how the nervous system produces hormones, genes, and other biological entities and processes interact with behaviours. Owuamanam and Owuamanam (2002) observed that there cannot be any complete list of the divisions of psychology/educational psychology. We have however, noted that some of the divisions mentioned were overlapped.

ACTIVITY II

(i) Mention five branches of educational psychology.

(ii) Differentiate between abnormal and experimental psychology

SCOPE OF EDUCATIONAL PSYCHOLOGY

If we regard education as a process that starts from birth to the time of death, educational psychology will then have to apply to this process from birth to the death of an individual. The teacher and the learner are considered the two principal actors in the educative process. But since it has been noted that an individual can learn without the assistance of a teacher, the learner is looked at as the major actor in any educative process. Educational psychology will then need to address itself to:

(i) the Learner – In terms of his development characteristics, individual differences, intelligence, personality and mental health;

(ii) the Learning Process – Psychology of learning, motivation in learning, diagnosis of learning problems and factors affecting learning; and

(iii) evaluation of Learning Performance – Use of statistical methods in education and conducting research in educational problems.

ACTIVITY III

(i) List the scope of educational psychology

THE IMPORTANCE OF EDUCATIONAL PSYCHOLOGY

The teachers-in-training at the end of their course/training will be expected to go into the classroom to put into practice all they learnt during their training. It is hoped that their knowledge of educational psychology will be an important tool for them. It will surely help to increase their efficiency in the classroom.

With knowledge of educational psychology teachers will understand the learners better by being aware of their problems and ways of assisting them to solve these problems. "To be a successful teacher, one is forced to be a successful psychologist" (Lovell, 1973.) What one is taught while in training on the characteristics emerging at different stages of human development can be utilized in imparting instruction and moulding the behaviour of children according to the specified goals of education.

The study of educational psychology has brought about the recognition that people differ in different ways and that no two individuals are alike, not even identical twins. Children differ in intelligence, learning ability, emotions, social relations, motivation, interest and background.

This could help a teacher to adjust his teaching to the needs and requirements of the class, taking care of individual differences and helping individual student to maximize his inherent potentialities. Educational psychology, therefore, gives us a means of appraising individual children's similarities and differences when we are trying to create more efficient learning and teaching environment for them.

It could also provide the teacher with the knowledge of different approaches available for tackling the problems of teaching at different age levels, different instructional strategies that will break the monotony of lecture method. In other words, educational psychology gives the teacher an understanding of the principles involved in the process of teaching and learning, the application of which improves his effectiveness. In this case, there is every possibility of reaching more of his students in the classroom.

It could also help him with various ways of understanding and making use of the factors that could enhance or interfere with learning such as: the influence of hereditary and prenatal events, the role of adulthood, the role of maturation and motivation, the effects of physiological, nutritional, emotional and social factors and, of course, the effects of physical defects and glandular dysfunction.

Knowledge of all these will save time and effort in learning on the part of his pupils and suggest ways of dealing with children. The teacher's familiarity with the fundamental principles of human behaviour will enable him to apply his knowledge of psychology to solve problems related to mental ill-health and maladjustment in children. What are the factors responsible for them and how do we avoid or tackle them?

The teacher will need to evaluate his teaching methods and the learning outcome of his students, so, knowledge of educational psychology will help him in developing tools and devices for the measurement of various variables influencing his own performance and that of his pupils. This will give him room to modify his strategies of teaching if needs be.

Educational psychology could also help to develop in the teacher a positive attitude towards teaching profession and provide him with the necessary competencies he needs to meet the classroom challenges. He would have been acquainted with the ways of motivating children to learn.

On the practical aspect of education, it could help the teacher to tackle the problem of indiscipline in schools by examining the causal factors leading to them in a more scientific way. On the basis of this understanding, the teacher is to take care of individual problems of students e.g. problem of rejection, shyness, aggressiveness and other forms of disruptive behaviour. Teachers for their knowledge of educational psychology are now using audio-visual aids in classroom teaching to aid the teaching/learning situation as against role memorization.

Various subjects are now slotted on the time-table keeping into consideration their difficulty level and fatigue index. No two difficult subjects are taught in successive periods, for instance, teaching Mathematics in the morning and not teaching Physical Education in the afternoon.

For the harmonious development of the personality of children, co-curricular activities like; games, drama, debating society, Man-O-War, scouting, Red Cross and other social and religious associations are encouraged and given due importance in school activities. All these are brought about by our knowledge of educational psychology. "All works and no play make Jack a dull boy". is popular adage.

From the foregoing, we can see how important it is for teachers and anyone who is closely associated with working with children to study educational psychology. But it should be borne in mind that no knowledge of educational psychology and psychology, however profound or extensive, will provide ready-made solution to all problems, though it will clearly be helpful to have some fore knowledge of the nature and potentialities of the children we have to teach.

ACTIVITY IV

(i) Mention five reasons why it is important to study educational psychology.

SUMMARY

- In this unit, are the meaning of educational psychology. It is regarded, among other things, as the application of findings of psychology to the field of education.
- Scope of educational psychology include: the learner, the learning process and evaluation of learning performance.
- The various branches of educational psychology also include: social psychology, Abnormal psychology, Developmental psychology' experimental psychology and biological psychology.

- Finally, the importance of educational psychology was discussed. It is believed that knowledge of educational psychology can increase the efficiency and effectiveness of the classroom teacher.

ASSIGNMENT

(i) Define in your own words the term educational psychology

(ii) What will you consider the importance of educational psychology.

REFERENCES

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Oladele, J.O. (1989) **Fundamentals of Psychological Foundation of Education** (3rd ed) Lagos: Johns-land Publishers Ltd.

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UNIT TWO: THEORIES OF LEARNING AND DEVELOPMENT

INTRODUCTION

It is a common knowledge that people learn when they get to know something they did not know before. Learning as a concept has been defined in various ways partly because of its importance in nature or its pervasiveness in nearly all forums of human activity. Learning can be seen as a process by which one benefits from pas experience – a relatively permanent change in behaviour traceable to some exposure to conditions in the environment, experience or practice. In other words, learning could be seen as change in behaviour that is not the product of fatigue or other sensory conditions such as: effects of drug, alcohol, sleep and maturation.

Learning as we have it is a fundamental process within our lives. It enables us to adapt to our environment by building upon our post experiences. One can then see learning as a change in behaviour that is stable and results from experiences.

As students of educational psychology, there is even need to have some exposure to the various theories of learning with particular attention given to identifying certain principles from each theory that have applicability to learning by school age children.

In this unit, you will be exposed to the Behaviourist theories of learning, the cognitive theories and information processing in psychology.

OBJECTIVES

By the end of this unit, you should be able to:

(i) define the term "learning";

(ii) mention the various theories of learning;

(iii) classify these theories under Behaviourism and cognitive;

(iv) define the terms "motivation" perception retention, and transfer of learning; and

(v) assess the applicability of these theories in the teaching-learning process going on in the classroom.

HOW TO STUDY THE UNIT

(i) Read through this unit, taking note of the important ideas as you read

(ii) Check the meanings of difficult or unfamiliar words in your dictionary.

(iii) Study the unit step-by-step and attempt all activities and assignments at the end of the unit.

(iv) Follow all instructions to the letter and obey all rules.

THEORIES OF LEARNING

A theory has been defined as an attempted explanation that makes sense out of a large number of observations, and indicates to the researcher where to look for additional information.

In other words, a theory represents general laws or principles or causes of observed or known events. Theories of learning, therefore, attempt to explain learning and the conditions under which it takes place. In this part of the unit, we will try to look at two main approaches to learning theory namely; behaviourist and cognitive theories.

The Behaviourist Theories.

The behaviourist approach to learning focus attention on the study of observable behaviour i.e. upon the responses made by the individual and upon the conditions under which they occur. This approach sees learning in terms of connections between stimulus and response or between response and reinforcement and places great stress on the role played by the environment. According to the behaviourists, if one structures the environment correctly, learning will usually follow, irrespective of the particular volition of the learner. In other words, the behaviourists stress the role of environment in behaviour development. Learning, to them, is change in behaviour which is seen in terms of stimulus (cause) and response (effect). Some of the theorists in this school of thought include: Ivan P. Parlov, Edward L. Thorndike, John B. Watson and B.F Skinner.

(a) **The work of Ivan p. Parlov**

Classical conditioning is based upon the work of parlov(1849 – 1936) a Russian physiologist and psychologist. In his experimental work with a dog, he noticed that the dog would salivate when food was placed in its mouth. But with time, he found out that mere sight of food or the sound of footsteps of the experimenter would cause the dog to salivate. When food is put in the mouth of the dog it salivates. This response (Salivation), on the part of the dog is natural and stable. Food here is called the unconditioned stimulus (UCS) and the salivation by the dog is called unconditioned response (UR).

During his experiments, Parlov introduced sound of the bell before the food was brought. On the first presentation, nothing happened. But when the dog learned to associate sound of the bell with food soon to be eaten, it started to salivate at the sound of the bell before food is actually in its mouth. The sound of the bell here is called conditions stimulus (CS) with the salivation at the sound of the bell alone without the food in the mouth is called conditioned response (CR). This could be illustrated thus:

(i) **Before conditioning**

UCS ⟶ UR

(Food) (Salivation)

(ii) **During Conditioning**

CS plus UCS ⟶ UR

(Sound of Bell plus food) (Salivation)

(iii) **After conditioning**

CS ⟶ CR

(Sound of Bell) Salivation)

After seeing that the dog now salivates at the sound of the bell, Parlov went on to see what the response pattern will be if the sound of the bell (CS) is no longer accompanied by food (Unconditioned stimulus). He found that after a while, no matter how many times he rang

the bell, if he did not accompany the sound of the bell with the food, the dog's flow of saliva decreased. Unitil eventually it stopped entirely. This is called experimental extinction of response. Spontaneous recovery of conditioned response occurs if after a time following extinction the bell is rung again and the dog begins to salivate.

One thing is certain from all we have said about Parlov's experiment and that is "learning took place because of reinforcement, that is, because food was always accompanying the sound of the bell. This in psychology is referred to as generalization. The dog, however, will not salivate when the sound can be differentiated by it from the sound of the bell. This is known as discrimination.

Discrimination can occur, according to Owuamanam and Owuamanam (2002), between two similar stimuli if one is repeatedly paired up with the unconditioned stimulus and the other is not. The dog will selectively respond to the one paired with unconditioned stimulus.

Classroom Application

Parlov's theory can be useful to a classroom teacher in his preparation of what he will teach his students. In planning what to teach, he should arrange the materials from simple to complex, that is, moving from known to unknown. What is already known or simple materials will serve as unconditioned stimulus while what is to be learnt will serve as conditioned stimulus.

Reinforcement which is recognised in this theory can be used by the teacher through praises, verbal approval, gestures or tangible rewards. When the teacher is teaching a particular topic and he is relating the content to other relevant areas, what he is doing is using the concepts of generalization and transfer of learning which were emphasized in Parlov's theory. When teachers direct their students to pay particular attention to important issues in the teaching/learning process instead of bothering themselves with less relevant issues, what they are emphasizing is the concept of discrimination.

Classical conditioning can also be used to develop good habits in children such as cleanliness, respect for elders and punctuality. It can also be used to deconditioning anxiety and fear in maladjusted children, break bad habits e.g smoking, drinking and so on.

b. The work of Edward L. Thorndike (1874 – 1949).

Thorndike was the pioneer American Experimental psychologist who was usually credited with developing many of the experimental procedures that are used in studying operant conditioning. He is considered under Reinforcement theorists. In reinforcement theories, more emphasis is laid on the control of the consequences that follows a response. Responses which are followed by satisfaction or pleasure are reinforced and become more probable in future. All learning, according to Thorndike, is the formation of bonds' or connections' between stimulus – Response (S-R) (Chamhan, 1978).

Thorndike in his experiment would place a hungry cat in a cage with food visible from the outside. To get out and get the food/fish, the cat when first put in the cage would push its claws through the bars, bite the bars and try to squeeze through them. Sooner or later, it would pull at a loop of string suspended inside the cage which held the cage door; the door would open allowing the cat to escape and get the food. Subsequent trials find the activity of the cat becoming less random and focused on the loop of string. The time taken to come out decrease until the cat eventually operates the release as soon as it finds itself in the cage. This is an evidence that "trial-and-error" learning had occurred. This type of learning was later called "Instrumental

conditioning". Instrumental behaviours" according to Oladele (1989) are learned behaviours that serve a purpose (p.76).

Thorndike's Laws of Learning

Based on the results of his experiments, Thorndike formulated the following laws which he considered governed the learning of organisms – human and non-human.

(i) The Law of Effect.

(ii) The Law of Exercise

(iii) The Law of Readines/Intensity.

The most important of these laws is the **Law of Effect**. Thorndike stated in this laws that behaviour which is followed by reward or success are more likely to happen again which the situation recurs, while responses followed by failure or discomfort will tend to die away or will be less likely to recur.

On the basis of his subsequent study in 1932 and 1933, using human beings instead of animals, Thorndike was led to the conclusion that punishment was less effective in producing learning. Punishment did not so much break the connection between the situation and the response; rather it caused the learner to try other techniques which would bring him reward. It is believed that some psychologists favour the Law of Effect as the most important single principles in learning theory today.

Implications of Thorndike's theory for Classroom learning

(i) The teacher should make the classroom experience satisfactory and pleasant.

(ii) Learners should be given opportunities to practice what they were taught and their behaviours must be shaped by rewarding approximations of the desired behaviour.

(iii) Use of punishment should be minimized in the classroom since it has been known that it does not eliminate undesirable behaviour or improve the output or performance of the learner.

(iv) What will be taught in the classroom should be recognized in such away that it will take into consideration learners readiness to learn.

(v) Habits like punctuality, regular school, attendance, honesty and the like can be enhanced through reward and repeated practice.

c. **The Work of John B. Watson.**

Watson was the first psychologist to apply the principles of conditioning to human learning. Watson believed that everything we do is pre determined by our past experience and that behaviour is simply a series of stimulus – Response reactions. He believed so firmly in this theory that he once declared that he could take any group of new born babies and conditioned them to become anything he wished – a doctor, writer, lawyer, criminal and so on.

In 1920, Watson and Rosalie Rayner reported a study they had conducted demonstrating that humans can learn through classical conditioning. They succeeded in experimentally producing a fear reaction in a small boy "Little Albert". The child whose mother was a wet nurse in the Home for invalid children, had a normal healthy life in his childhood. When he was 9 months old Watson and Rayner ran him through the emotional test that would determine whether fear reactions can be called out by

stimuli than sharp noise and sudden removal of support. Albert was confronted with a white rat, a rabbit, a dog, a monkey and so on. At no time did he ever show fear in any situation. The researchers did find, however, that when Watson would hit a steel bar with a hammer behind Albert, the child would exhibit a fear reflex. So for their experiment, Watson and Rayner decided to employ a loud noise as the unconditioned response (UR).

Two months later, when Albert was 11 months old, he was presented with a white rat (the neutral stimulus that was to become the conditioned stimulus (CS). Once more, Albert showed no fear and reached for the rat. But this time whenever he reached out for the rat, Watson would strike a steel bar with a hammer immediately behind the child's head. At such times, Albert would show marked fear reflex. After only five trials pairing the noise with the rat, Albert started fearing other Furry objects and animals. Retests on subsequent occasions showed that the fear reactions persisted (Zauden, 1980)

Implications of Watson's work in the classroom

Many of the emotional responses that children show in school settings are learned through conditioning. The way a teacher greets his students during the first week of the school term functions as the unconditioned stimulus while the children's pleasant emotional feeling are the unconditioned response. The classroom or school setting, the previously neutral stimulus, then comes to be associated with unconditioned stimulus and this brings about similar pleasant feelings. It could also be used to develop good habits and break bad ones, as mentioned earlier.

d. **The Work of B.F. Skinner**

One school of educational psychology that developed out of Watson's theory was that known as the stimulus – response theory or S-R psychology. One of the leaders of this school of thought was B.F. Skinner. He refined Watson's theories and applied them specifically to behaviour control and the learning process.

Skinner built upon Thorndike's formulation and developed even more sophisticated experimental procedures.

In his own experiment, Skinner's subject – a rat, a mouse or pigeon – is placed in what is known as Skinner's box which is a highly sophisticated adaptation of the Thorndike's cage. The processing of lever in Skinner's box will bring not escape as in the case of Thorndike's cage, but the presentation of a pellet of food. Since the pellet of food is insufficient to satisfy the subject, it continues its investigatory behaviour until it once again operated the lever and produces food. Eventually, it will continue to press the lever until it is satisfied.

Skinner's ideas and research have provided the basis for the programmed instruction movement and for behaviour modification. What happens here is what is known as instrumental conditioning which differs from classical conditioning, in that the required response is instrumental in producing the reinforcement.

Reinforcement plays a critical role in conditioning an organism. Reinforcement is referring to any event that strengthens the probability of a particular response. Most teachers and parents are aware that rewarding a child for a behaviour reinforces that behaviour.

Events that raise the rate of responding are called "Reinforcers" and there are three types of reinforcers namely: Positive reinforcer, Negative reinforcer and Punishment.

(i) **Positive Reinforcer** – A positive reinforcer is any stimulus which, when applied following a behaviour, strengthens the probability of the behaviour's future occurrence. For instance, if a behaviour is rewarded with food, water or social approval, there are increased chances that the behaviour will be repeated. Teachers can consciously employ positive reinforcers to realize a wide variety of goals.

(ii) **Negative reinforcer** – A negative reinforcer is any stimulus which when removed following a behaviour strengthen the probability of its future occurrence. For instance, taking 2 tablets of paracetamol to get relief from headache and feverish condition is negatively reinforced by the termination of pain. In other words, a negative reinforcer is an aversive stimulus which the organism would learn to avoid or escape. Examples of negative stimuli are electric shock, extreme heat or cold, loud noise or very bright light. Thus a response can be reinforced either by presenting a positive reinforcer or removing a negative reinforcer. In other words, negative reinforcers strengthens avoidance response.

(iii) **Punishment** – Where reinforcement be it positive of negative, involves the strengthening of a response, punishment is designed to weaken response. In reinforcement, the frequency of the response increases while in punishment it decreases.

People often confuse punishment with negative reinforcement. They are related but they are not the same thing. Negative reinforcement results from removal of a negative reinforcer whereas punishment involves presentation of a negative reinforcer. In other words, while punishment produces a reduction in the frequency of a response, negative reinforcement results in an increase in the incidents of a response.

Owuamanam and Owuamanam (2002) observed that reinforcement can be conditioned. According to them a stimulus that is not originally a reinforcer can become reinforcing through repeated association with one that is reinforcing. This isknown as conditions reinforcer. For instance, a feeding bottle would serve as a conditioned positive reinforcer to a hungry child because he has always connected the feeding bottle with food. Similarly a child who had been burnt once would learn to avoid the stove even when it is cold.

Schedules of Reinforcement

Here we will look at the particular pattern according to which reinforcers follow response. Some of the schedules include:

(a) Continuous reinforcement – Every response according to this schedule should be reinforced.

(b) Intermittent reinforcement – Here, not all responses will be reinforced. Responses could be reinforced depending on time intervals. This type of reinforcement is classified under;

(i) Fixed ratio reinforcement – Reinforcement are given after a number of responses eg. After every fifth response.

(ii) Variable ratio reinforcement – Here the number of responses made before reinforcement is given; it varies but not constant. For instance, in one case reinforcement could be given after the second response and in another after the fifth response.

(iii) Fix interval reinforcement – A fixed interval of time has to elapse from the time reinforcement is given to the time another is given.

(iv) Variable interval reinforcement – The time lapse between two reinforcement varies. At one time, the reinforcer is given after a short time, at another it is given a longer period of time.

One thing that is clear from the above schedules is that there are more responses per reinforcement in any kind of intermittent reinforcement than on continuous reinforcement.

Classroom application of Skinner's Theory.

His theory can be used in behaviour modification or treatment of behaviour disorders in children. What the teacher should do here is to identity the undesirable behaviour and the desirable behaviour that will replace it. The undesirable behaviour should therefore be extinguished by not reinforcing it and strengthening the desirable one through reinforcement.

The theory has also been applied in programmed instruction. Students could move from simple to complex, known to unknown.

ACTIVITY I

(i) Define the term "theory of learning".

(ii) What is the main focus of the behaviourist approach to learning?

(iii) Mention four theorists under the behaviourist's school of thought.

(iv) Enumerate five implications of Thorndike's theory for classroom teaching.

THE COGNITIVE THEORIES.

The cognitive theorists including the Gestalt psychologists are of the opinion that the learner has inherent any qualitative capacity which enables him to participate actively in the process of learning. According to people in this school of thought, the learner is not a passive receiver of knowledge. He is an active organism. Change in his behaviour is seen in terms of structure – function rather than cause effect. Learning to solve problems is a matter of great interest to everyone connected with education. In trying to solve a problem, people often make use of some of the following: the observation of relationships, reasoning, generalization, and what the Gestalt Psychology called "insight". The Gestalt psychologist proposed insightful learning as an alternative to trial and error. Some of the theorists in this school of thought we are going to examine in this unit include: Wolfgang Kohler and Kurrt Lewin.

(a) **The work of Wolfgang Kohler (1887 – 1967).**

During the first World War, Kohler, a German national and psychologist who was in enforced exile at the Berlin Anthropoid Station on Tenerife, one of the canary Islands off the Coast of Africa made certain experiments on the learning process of apes that convinced him of the great importance of insight in learning. In his experiments,

Kohler found that a chimpanzee, after looking at a problem for a while, would suddenly solve it at a first attempt without making any false move (trial-and-error). This Kohler called 'insight'.

In one of his experiments, Kohler placed a bunch of banana outside an ape's cage just beyond the animal's reach. There was a stick somewhere in the cage so that by using the stick, the ape could pull the banana. Sometimes too, two pieces of stick were placed inside the cage, each piece of stick was too short to reach the banana, but there was provision for fitting the end of one into that of the other, so that by joining the two sticks, the ape could pull the banana.

In another experiment, a banana was suspended from the ceiling of the cage. Kohler placed some boxes in the cage. The chimpanzee attempted to get the banana but could not reach it. It suddenly established relationship between the boxes and the banana and stocked the boxes under the banana. He then climbed on it and got the banana.

Kohler concluded that it appeared that the animal having failed to obtain the banana by familiar methods, sat and thought about the problem and suddenly saw the solution. It said the relationship between the boxes or sticks and the banana and the means of solving the problem is gained – insight. Kohler's work seemed to confirm the theories that the whole pattern of an experience is more important than its individual parts in determining its meaning and even its appearance. We can then say that the main characteristics of insight' are the solution to a problem is perceived in a flash, and that this solution results from the situation becoming organized in the brain. Another characteristic of insightful learning is transfer of method of problem solving to other similar situations.

ACTIVITY II

1. Explain what Kohler called 'insight' in your own words.

b. **The work of Kurt Lewin**

Lewin extended the Gestalk's view through his field theory. He was of the opinion that learning is a process of perceptual organization or reorganization. The essence of learning, according to him, is the perception of new relationships among concepts. In other words, any type of learning is a perceptual process involving 'insight'. Lewin gave four (4) categories of learning as follows:

(i) Learning as a change in a cognitive structure;

(ii) Learning as a change in motivation;

(iii) Learning in acquisition of skills; and

(iv) Learning as a change in group belonging.

Learning of all types involves change in perception. During childhood, the perception undergoes considerable change and becomes enlarged. The child learns to distinguish between reality and unreality levels of the life space. Lewin is against repetition in learning because two many repetitions could lead to satiation which may lead to differentiation of the field and unlearning., change, in needs and means of their satisfaction.

According to Lewin, level of aspiration is an important factor in the learning process. This level of aspiration will depend on the potentialities of the individual and on the influence of the group to which he belongs. It has been further advocated by him that too high and too low level of aspiration discourages learning (Chauhan, 1978).

ACTIVITY III

1. List the categories of learning identified by Lewin.

THE INFORMATION PROCESSING.

The information processing approach to learning sees the learner as an active explorer of his environment. In his bid to actively seek new information which will be meaningfully organized into cognitive structures that help him adapt to his environment, he is seen to be seeking, organizing, coding, storing, retrieving and using information. These he does everyday in his day-to-day living.

In this approach, learning is divided into three phases namely;

(i) Attending to new information

(ii) Acquiring and retaining information.

(iii) Retrieving information from memory and transferring it to new situations.

Every child receives information from external environment through the senses. The information received by every individual is more than he can contain. What one does, then, is selective attention – attending to some sensation and ignoring others.

When we learn, we store information in our memory and this has to do with memorizing the information and retrieving it for use. What we do here is encoding the information within a cognitive structure; that is, placing the information in a different easily remembered structure or framework. When we store the information in our memory, retrieving it has to do with recollecting it from memory and transforming it into what can be used in new situation. These are what we do when we use the information processing approach to learning.

Having looked at the various theories of learning, we will now focus attention on some psychological concepts in relationship with these theories. Some of the concepts are: motivation, perception, retention and transfer of learning.

(i) **Motivation**

The word ‘motivation’ in educational terminology has taken on two meanings.

The first and primary meaning of motivation as related to the process of learning is the disposition or desire of the learner to learn. This disposition to learn stems from sources that we call motives. Motive, can be defined as some internal drive, impulse, intention and so on that causes a person to do something or act in a certain way. In other words, any impulse, emotion or desire that moves one to action.

In the classroom, learners show different levels of commitment, urge and strive towards the achievement of learning goals. The most effective form of motivation, perhaps the only form of motivation in its true meaning, is that desire which lives within the learner. The ultimate goal of the learning process is the arousing of this desire within the learner to modify his behaviour through learning.

In proper usage we call motivation those actions which the teacher takes to arouse a desire of the learner to learn. The classroom teacher is actively concerned with ways of motivating students to learn better and achieve their learning goals. We often hear teachers say "I wish I could motivate him". In this usage of the word 'motivation', it signifies the techniques or stimuli which originate from without the learner but which seek to encourage him to desire to learn.

The social theory and field theory in psychology maintain that motivation and behaviour depend to some extent upon the actual social group in which we find ourselves at a particular time and upon the declared aims and accepted standards within the group.

When a teach seeks to motive students, he plans and carries out learning experiences that he hopefully believes will lead the students to a desire to learn. In the context, therefore, we use the word motivation to signify both the internal desire of the students to learn and those techniques which the teacher uses to stimulate the desire to learn.

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Characteristics of Motivated Learners.

(i) The highly motivated learner actively participates in class; he sees purpose in what he is doing; he feels himself able to accomplish the task before him.

(ii) He can do with less direction than the less motivated learner. He draws upon his own sense of pride and satisfaction while the less motivated must be cajoled, pushed and even ordered to do his work.

(iii) He enjoys school and learning; more often than not, he is a good reader, can handle abstractions, possesses verbal aptitude and is intelligent.

Conditions of Motivation in Classroom Teaching

(i) Learners are motivated when they conceive themselves as capable individuals.

(ii) They are motivated if they live in a secure environment.

(iii) They are motivated when the subject matter itself is interesting.

(iv) They are motivated when they have some opportunities for decision making.

(v) They are motivated when they experience success more often than failure. No individual can maintain an interest in a task that he fails time and time again.

Classroom and school conditions that permit learners to realize their potentialities will encourage the development of motivation.

Techniques of Motivation

The following principle and practices could enhance the possibility of a teacher stimulating his pupils to learn:

(i) Motivation is enhanced when the content is adjusted to learner rather than vice versa.

(ii) The content of instruction should be as close to students' interests as it is possible to make it.

(iii) Motivation is increased through the use of audio-visual aids.

(iv) Variety is the key to motivation. The teacher should vary his methods of teaching as much as possible.

(v) Resumes and review sessions can help pupils to gain a better knowledge of their subjects and therefore to want to continue their studies.

(vi) A summarization or other evaluative techniques at the end of the class period will help students to achieve better results.

(vii) The alert teacher looks for timely events which affect the lives of members of his class. By capitalizing on some of these events he can enhance motivation.

(viii) The kinds of assignments a teacher gives that have a bearing on the interest of pupils will make them more disposed to do their homework.

(ix) The creative, imaginative teacher will experience greater success in stimulating pupils to learn that will the pedestrian, unimaginative teacher.

(x) The teacher may resort to extrinsic forms of motivation of a positive nature.

The purpose of all extrinsic forms of motivation is to encourage development of intrinsic motivation.

(ii) **Perception**

Simply defined, perception is referring to the process of becoming aware of objects or situations around us. It has been noted that perception can be regarded as the most important single activity of human beings. Without perception, one cannot learn, act, think and cannot have anything to remember. When one can apply is intelligence to the impressions made on one or more of his senses, then he will be able to perceive. What we do when perceiving is transforming impressions made upon our senses by the objects and people or event around us, into awareness of those objects, people and events. In other words, we learn to know our would through our sense organs.

In other to perceive, therefore, there must be a stimulus from the sense and this stimulus must be understood. It must have a colour, shape, pattern, a tone of sound or quality of taste or smell. Perception may depend on what an individual brings with him from his past experience. One can learn how to perceive and it should be noted that perception requires attention. In other words, when an individual receive impressions through his sense; these impressions will stimulate memory of similar experiences; his mind will then connect the old with the new and thus perception takes place.

Ways of Improving learner's power of Perception

(i) Teachers should give children freedom to explore their surroundings, to handle, feel, taste, smell and play with objects around the classroom – toys, blocks, cans, paper,

water, pets, flowers and so on. Giving names to objects perceived can enrich the meaning of the perception.

(ii) Teachers needs to select objects and materials which are likely to encourage interest they have already observed in children. Use variety of audio-visual aids in the teaching/learning process.

(iii) Perceiving involves attending and interest. Learners attend best when they are interested. The teacher who wishes his pupils to perceive clearly must secure their interest. A child will be interested when he feels that what is to be observed is something that he wants to know more about. The desire within him to learn can be strengthened by stirring his curiosity and wonder. A good teacher must appeal to the interest of his pupils when teaching. The teacher should use his voice to secure attention of his pupils.

The secret of maintaining attention, according to Castle (1965) are active and interested children, vivid presentation of lessons, and a teacher who knows that he can sharpened the children's perceptual powers during the process of learning.

Perceptual Grouping and Patterning

Up to the beginning of the 20th Century, psychologists tended to perceive objects as if they were isolated from their background. But to the Gestalt school of psychology, the whole is more than the mere sum of its parts even if the perception come from the sense of sight, sound or any other one.

According to the psychologists in this school, when sensations are fed into the brain, we tend to group them according to certain principles of patterns (Lovell, 1973).

The groupings can be classified under:

(i) Proximity

(ii) Similarity

(iii) Continuity

(iv) Completeness

(v) Symmetry.

By proximity, we are talking about closeness of stimuli from each other within the perceptual field. Elements that are closed to one another tend to go together as a pattern.

Similarity will be referring to items of the same size or shape which will be perceived more readily as a group or pattern.

Continuity has to do with objects that lie on a straight line or on a continuous curve.

This can easily be grouped. When we have a close figure, it can be taken as unit than an uncompleted one. That is the focus of completeness. Symmetry is referring to the fact that a regular figure will easily be seen against the background than an irregular one.

The implication of the above mentioned principles is that when one sees a pattern, he will see it in such a way that the resulting figure is as stable, simple, regular, unified and son on. It should be noted that in any perception grouping and patterning, the previous learning and experience of children are brought to play. The more familiar a child is with given material, the more easily will he be able to group it and incorporate new and relevant materials.

(iii) **Retention**

In our discussion of learning and retention, we have to touch an important aspect of the learning process, which is memory. Memory is related to learning in that learning is dependent on our ability to retain and recall information that we received. What ever we are taught is retained in our memory to be used for solution of our day to day problems. Memory has been defined as the ability to remember or retain information. Memory is the proof that one has learnt something. Ability to recall what has been learnt is the evidence of retention. Our ability to retain what we learnt depends on five factors namely:

(i) Intelligence

(ii) The nature of what is learned

(iii) The significance we place on what is learned

(iv) The method used for learning, and

(v) Environmental factors.

People of high intelligence have better memories than those with lower intelligence. We have people with photographic memories with which they literally see pages of their notes or books they read. Others have what is known as visual memory and tends to see things in their mind and a few people have auditory memory with which they remember what they hear.

The nature of what is learnt has an influence on how well we can retain it. When what we learnt has meaning to us, we are bound to remember it.

The importance we place on what we learnt can also affect how well we retain it. If for instance, a question is given to students with the understanding that it will come out in the end of term examination, learning it will be significant to the clients.

Methods of learning and the environmental factors also affect how well we retain and recall what is learnt. In a situation where the learner is distracted or worried over a personal problem, he will find it difficult to concentrate and that will affect his ability to commit what he is learning to memory.

Retention can be measured by finding out how much the learner can remember of what he has learnt. There are, however, three ways of measuring retention namely:

(i) Recalling or reproducing the material he has committed to learning memory as he does in recitation of poems or National Anthem;

(ii) Recognition of a statement as true or false based on familiarity with learnt materials. The learner may have to identify if some item belongs to a given context when the item is presented to him; and

(iii) Relearning method – A material that has been learnt earlier will be more easily learnt again than a new one. The time one takes to relearn a material that had been learnt earlier will be short.

Aiding Retention in the classroom:

(i) The material to be memorised must be meaningful to the learner.

(ii) Materials to be learnt should be organized in a logical sequence.

(iii) Materials committed to memory should be recited aloud to oneself or to a friend who will be looking at the content or putting it into writing.

(iv) Repetition of the material should be spaced i.e. give some intervals between re-reading instead of reading again and again without a pause.

(v) Part learning of material could be more satisfying and encouraging.

(vi) What will be committed to memory should be manageable.

(vii) Transfer of Learning

Human beings and even animals cannot learn without being affected by their past experiences. The more knowledge and skills we acquire the more likely it is that our new learning will be influenced and shaped by our past learning. Prior knowledge functions as a point of departure for packing new tasks. Hence transfer of learning is an arithmetical aspect of life and a central component in human adaptive capabilities.

Transfer of learning is the objective of the vast majority of educational endeavours. Whatever we teach in school is with the assumption that children will use that knowledge, skills and information after completing their formal education to solve problems of life. For example, arithmetic is taught in schools on the assumption that the knowledge of arithmetic will be used later in life on everyday basis to handle problem involving calculation may be in buying and selling, keeping personal records and so on.

The effects of transfer may be positive, negative or absent or zero. In positive transfer, the practice of one skill facilitates a second i.e. learning of a new skill is facilitated by an old experience. For instance, knowledge or study of Islamic Religious Knowledge can be facilitated by the knowledge of Arabic language.

In negative transfer, the practice of one skill or previous learning experience impedes retards, inhibits or interferes in performance of a task in a new situation.

Zero transfer, however, occurs when training on one activity seems in no way to influence training in another. That is, there is no noticeable effect of performance in one task over the performance of another.

Factors in Transfer:

(i) Intelligence: The more intelligent the child is, the more likely he is to see the possibilities of transfer.

(ii) The extent of transfer effects: This is dependent on the extent and thoroughness of the original training. In a situation where original training is not thorough, it could bring about negative transfer effect.

(iii) Increasing mastery of one subject: This could go a long way to build up the morale of the learner which will enhance his attack of other subject with confidence.

Transfer of learning can, therefore, be seen as a necessity for effective, functional and pragmatic education. A child taught some good moral at home such as cleanliness, could transfer these moral qualities to the school. If this is done, transfer of learning has taken place.

ACTIVITY IV:

(i) Mention the three phases of information processing approach to learning.

(ii) Define the following concepts:

(a) Motivation

(b) Retention

(iii) List the classification of perceptional groupings.

SUMMARY:

- In this unit, we have examined the various theories of learning under the behaviourist and cognitive approaches to learning. Specifically the roles of Parlour, Thorndike, Watson and Skinner were examined under the behaviourist approach with the works of Kohler and Lewis under the cognitive approach.
- Under the information processing, concepts such as motivation, perception retention and transfer of learning were also discussed.
- It was observed that classroom and school conditions that permit learners to realise their potentialities will encourage the development of motivation within and outside the learners.
- Retention has to do with how much the learner can remember of what he has learnt.
- Transfer of learning, on the other hand is seen as a necessity for effective, functional and fragmatic education

ASSIGNMENTS:

(i) Distinguish between Parlour and Skinners theories of learning

(ii) Briefly assess the following concepts:

(a) motivation

(b) retention

(c) transfer of learning

UNIT THREE THE CONTEXT AND CONDITIONS OF LEARNING

INTRODUCTION:

In unit 2 we have examined what learning is from the psychological view point. We have also looked at some theories of learning from the behavioural and cognitive perspective. We also examined some psychological concepts like: motivation, perception, retention, transfer of learning and general information processing.

In this unit, we are going to examine the context and conditions of learning in the classroom situation.

OBJECTIVES:

By the end of this unit, you should be able to:

(i) define the concept learning;

(ii) list the factors within the learner that could affect learning in the classroom; and

(iii) discuss the environmental factors that can influence how well a child can learn.

HOW TO STUDY THIS UNIT

(i) read carefully through the unit

(ii) study the unit step by step as arranged for use taking note of the key points

(iii) Attempt all activities and assignment at the end of this unit following the instructions as best as you can.

CONTEXT AND CONDITIONS OF LEARNING:

We have noted that learning as a concept belongs initially to the field of psychology; although we have noted that it is of great concern not only to psychology but to education as an independent discipline. Psychologically, we have defined it as having something to do with a change in behaviour which must be permanent and which must come about as a result of the individual having been exposed to experience – a new method of learning by an organism. From the educational perspective, it can be looked at as an educative process dealing directly with human creatures and not animals.

The Change in behaviour specified in the definition of learning, implies that for learning to have taken place, there must be evidence of a change in an individual's behaviour in terms of the difference in his manifest behaviour before and after he must have been exposed to some experience. For instance, a lit candle was placed in front of a child who became attracted to the flame. The child innocently stretched his hand to catch the flame and was burnt and quickly withdrew his hand crying. The next time his hand is brought near a burning flame, he will withdraw it and/or cry. A child burnt once will always fear and run away from fire. This is an evidence of learning having taken place.

ACTIVITY I:

1. Define the concept learning in your own words.

FACTORS AFFECTING/INFLUENCING LEARNING:

Learning is a phenomenon which human being exhibit and it has been found to be taking place within and outside the classroom. However, it has been noted that certain factors within and outside the learner could influence how effectively each learner learns. These factors are referred to as internal and external factors associated with the learner.

INTERNAL FACTORS

These factors determine the inherent traits and determinants of learning that are deeply rooted in the individual person. As such, these factors differ naturally from one individual to another. Because of the individual differences noted in human beings, it has been observed that different individuals react differently to what they are taught in the classroom. The factors noticed for this difference within the learner include:

(i) Intelligence: People with high level of Intelligence measured out in terms of intelligent Quotient (IQ) will perform better in learning tasks than an individual with lower level of intelligence.

(ii) Age: This is an important factor affecting learning because the condition of the age of the learner determines how well or not such an individual will learn. This is closely linked with what psychologists called "Readiness/maturation". Here we are referring to the level of preparedness of the learner for learning certain materials. An individual has to be at a certain age or stage of maturation – mentally or physically – before certain learning tasks can be successfully accomplished.

(iii) Personality factors: The differences notices in human beings had been regarded as arising from individual's personality make-up which has been regarded as the combination of all the traits, sentiments, interest, aptitudes, motivation, emotions, attitudes, self-perception/concept, abilities, prejudices, adjustment and level of aspiration which make up the individual. If for instance, a child has a negative attitude to school or particular subject or poor self-concept, he will not learn properly.

(iv) Physical defect: Difficulty in learning, seeing, stammering, malfunctioning of the central nervous system, or any glandular dysfunctioning can hinder children's learning.

(v) Fatigue – This can be either fatigue of the eye or muscles, caused by effect of drugs, smoking or alcohol.

(vi) Anxiety: Excessive anxiety can hinder learning effectiveness.\

(vii) Locus of control: Our attribution of success or failure affects our quality of learning. There are two dimensions of locus of control – external and internal locus of control. When an individual attributes his/her behavioural outcomes to external significant forces, for instance, attributing one's success or failure in examination to God, luck, dead ancestor or other spirit, is referring to externals. Internal locus of control, on the other hand, is where someone attributes the sources of his behavioural outcomes to himself i.e. acceptance of full responsibility for his success or failure.

The above listed factors can be seen as those that are innate to the learner which account mainly for the uniqueness of an individual and the subtle differences that exist between one learner and another.

EXTERNAL FACTORS

The environmental factors of the home, the school, classroom and community can determine to some extent how well the child can learn. These are factors outside the learner that could affect human learning for better or for worse because of the vital role they play in generating heuristic experience.

Environment can be regarded as any of the external impingement on the learner. The following are some of the external factors:

(i) The Home: The physical environment of the home children come from can influence their learning either positively or negatively. Enriched home environment will foster learning while impoverished environment will impede learning. To concentrate effectively and learn satisfactorily, every child needs a peaceful home atmosphere where his basic needs are met. A home that provides conducive psychological climate and atmosphere will promote human learning better than homes which are full of squabbles, bickering, rancour and quarrels among members.

(ii) The school- The sitting of the school, its material complements, furniture, human and material resources make the school an ideal place for human learning. The physical and psychological environment of the school can provide a very conducive atmosphere for human learning. Interpersonal relationship between teachers and pupils must be positive enough to promote learning. Children should look at the school as second home to ensure high quality learning.

(iii) Timing and logical arrangement of materials to be learnt can influence how they are learnt. Variation of methods of teaching by teachers, uses of reinforcement techniques that provide necessary motivational facilities for learners will promote human learning.

(iv) Feedback- Provision of knowledge of correct and wrong response to the learner can influence learning.

ACTIVITY II

i) Mention the various internal factors that could influence learning

ii) list the environmental factors that could influence learning.

SUMMARY

- In this unit, we examined the context and condition of learning in the classroom setting.
- Factors within the individual that could affect children's learning include intelligence, age, personality factors, physical defects, fatigue, anxiety and locus of control.
- The home, school, timing and logical arrangement of materials, feedback are some of the external factors that could also affect children's learning.

ASSIGNMENT

1. Assess the internal and external factors that could affect children's learning.

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