EDU 822
ADVANCED PSYCHOLOGY OF LEARNING

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INTRODUCTION

Course Code: EDU 822
Title: Advanced Psychology of Learning
EDU 822: As a Post-graduate/Master's Degree Student, one of the courses central to your profession is Psychology. This is because at the heart of every educational or instructional activity learning is expected to occur. Therefore, you need to equip yourself with major facts and how you can effectively apply these theories to ensure learning occurs. You need to study it with all seriousness.

The course is an important component in the programme of study that will enable you graduate. The course has been designed to consist of three (3) modules of twelve (12) units. It carries two (2) credit units.

The course EDU 822 is compulsory for all students undergoing a postgraduate programme in Education. This is because it has been designed to give you a deeper understanding on the important aspect of education which is 'learning'. Studying the course well, implies that, you have attended to all your self-marked assignments and tutor-marked assignments, and that you have the confidence to develop a good seminar paper you will be proud to present to other colleagues.

This course guide tells you briefly what to expect from reading the accompanying course study material. It provides you with information on how to make the best use of the materials so that you can achieve good success. Make sure you read it very carefully and pay attention to the instructions and suggestions.

Happy study.

WHAT YOU WILL LEARN IN THIS COURSE

This course, EDU 822, titled Advanced Psychology of Learning, has been specifically designed to refresh your memory and sharpen your understanding of the Psychology of Learning to the point that you should be able to discuss confidently on issues concerning human learning, especially learning in the classroom environment.

In this regard, the course would highlight the importance of investigations and research in resolving issues and challenges in the study of Psychology through various theories.

• You will learn about the various methods of investigation in psychology which researchers adopt.

- You will learn about the thirteen strands that make up the different branches of psychology.
- You will learn how to ensure permanency in learning.
- More importantly you will be exposed to some ways that theories can be applied in classroom situations to make teaching and learning easy.

COURSE AIMS

It is hoped that after your degree, you will rise to certain influential leadership position in the education sector, therefore the major aims of this course are:

(1) To refresh your memory on the concept of psychology;
(2) Deepen your understanding of the advanced psychology of learning;
(3) Prepare you to be able to discuss coherently on any issue or matter relating to the psychology of learning or its application in classroom situations.

COURSE OBJECTIVES

At the end of this course EDU 822, 'Advanced Psychology of Learning', you will be able to select and discuss coherently through seminar presentations of any topic in the area of Advanced Psychology of Learning.

Specifically, you will be able to:
1. Examine the students' differences that may affect learning.
2. Describe the activities you will adopt to help your students retain information.
3. Examine the nature of human motivation, explaining the techniques you can adopt to motivate students to perform well in learning activities.
4. Discuss, illustrating with examples from the various theories of learning the difference between learning and education.

WORKING THROUGH THE COURSE

To complete this course, you are required to read the study units, read books and other materials provided by the National Open University of Nigeria (NOUN). Each study unit contains Self-Assessment Exercises (SAEs) and Tutor Marked Assignments (TMAs) and at each point in the course you are required to submit assignments for assessment purposes.

In addition, you will be expected to prepare and present a seminar paper at the end of this course material. This will be graded to form part of your tutor-marked assessment. Certainly: There is an end of course final Examination. You will also find listed all the components of the course, what you have to do and how you should allocate your time to each study unit in order to complete the course successfully and on time.

THE COURSE MATERIAL

Major components of the course are:
1.   Course Guide
2.   Study Units
3.   References
4.   Presentation Schedule

Module Structure
Unit 1 The Concept of Psychology
Unit 2 Branches of Psychology
Unit 3 Educational Psychology

Glossary
End of the Module
Questions (These
could be MCQs,
True/False, or
Matching)

Module Structure

Unit 1	The Theories of Learning: Ivan Pavlov
Unit 2	B. F. Skinner' s Instrumental Conditioning
Unit 3	Edward Bandura' s Social Learning Theory
Unit 4	The Theory of Connectionism
Unit 5	Gestalt/Cognitive Fields of Learning
Unit 6	Edward Tolman and Benjamin Bloom' s 'Theories of Learning'

Glossary

End of the Module
Questions (These
could be MCQs,
True/False, or
Matching)

Module Structure

Unit 1   Permanency in Learning
Unit 2   The Theories of Retention in Learning
Unit 3   Transfer of Learning
Unit 4   Motivation in Learning and its Implication in Classroom Situations
Glossary
End of the
Module
Questions
(These could
be MCQs,
True/False,
or Matching)

PRESENTATION SCHEDULE

The presentation schedule included in your course material gives you the important dates of this year for the completion of tutor-marked assignments and for attending tutorial. Also included is the date for the seminar. Remember, you are required to submit all your assignments by the due date. You should guard against falling behind in your work.

ASSESSMENT

There are three aspects of assessment of the course. First is a set of Self-Assessment Exercises (SAEs), second is a set of Tutor-Marked Assignments (TMAs) which includes the presentation of a seminar paper. The third is a written end of semester examination.

In tackling the assignments, you are expected to be sincere in attempting the exercises; you are expected to apply the information, knowledge and techniques gathered during the course. The assignments must be submitted to your tutor against formal deadline stated in the presentation schedule and the assignment file. The work you submit to your tutor for assessment will make up 40% of your course work.

At the end of the course, you will need to sit for a final written examination of two hours' duration. This examination will make up the remaining 60% (postgraduate) of your course mark.

TUTOR-MARKED ASSIGNMENT

There are tutor-marked assignments in this course. You are encouraged to submit all assignments. Assignment questions for the study units in this course are stated within the study units. You will be able to complete your assignments from the information and materials contained in your reading, study units. However, it is desirable in all degree level academic programmes to demonstrate that you have read and researched more widely than the required minimum. Using other references will give you a broader viewpoint and may provide a deeper understanding of the subject. You can select the seminar topic you wish to develop and present. However, it must be an aspect of the psychology of learning. Your seminar paper is a compulsory assignment.

When you have completed each assignment, send it together with a TMA (tutor-marked assignment) to your tutor. Make sure that each assignment reaches your tutor on or before the deadline given in the presentation schedule and assignment file. If, for any reason, you cannot complete your work on time, contact your tutor before the assignment is due to discuss the possibility of an extension. Extensions will not be granted after the due date unless in exceptional circumstances.

FINAL EXAMINATION AND GRADING

The final examination for Advanced Psychology of Learning will be of two hours' duration and it has a value of 50% of the total course grade. The examination will consist of questions which reflect the type of self-testing, practice-exercises and tutor marked assignments (tutor attended to problems) you have previously encountered. All areas of the course are assessed.

Use the time between finishing the last study unit and sitting for the examination to revise the entire course. You might find it useful to review your self-tests, tutor-marked assignments and comments on them before the examination. The final examination covers information from all parts of the course.

COURSE MARKING SCHEME

The following table lays out how the actual course marking is done.

Assessment	30% (Undergraduate) 40% (Postgraduate)
Final Examination	70% ((Undergraduate) 60% (Postgraduate)
Total	100% of Course work

HOW TO GET THE MOST FROM THE COURSE

In Open and Distance Learning (ODL), the study units replace the University Lecture. This is one of the great advantages of ODL. You can

read and work through specially designed study materials at your own pace, and at a time and place that suit you best. Think of it as reading the lecture. In the same way that the lecturer might set you some reading to do, the study units tell you when to read your other materials. Just as a lecturer might give you an in-class exercise, your study units provide exercises for you to do at appropriate points.

Each of the study units follows a common format. The first item is an introduction to the subject matter of the study unit and how a particular study unit is integrated with the other study units and the course as a whole. Next is a set of learning objectives. These objectives let you know what you should be able to do by the time you have completed the study unit. You should use these objectives to guide your study. When you have finished the study unit, you must go back and check whether you have achieved the objectives or not. If you make a habit of doing this, you will significantly improve your chances of passing the course.

The main body of the study unit guides you through the required reading from other sources. This will usually be either from a reading section or some other sources. You will be directed when there is need for it.

Self-Assessment Exercise (SAEs) are interspersed throughout the units. Working through these SAEs will help you to achieve the Learning Outcomes of the study units and prepare you for the assignments and examination.

You should do every SAE as you come to it in the study unit. There will also be numerous examples given in the study units. Work through these when you come to them too.

The following is a practical strategy for working through the course. If you encounter any problem, telephone your tutor immediately.
Remember, that your tutor' s job is to help you. When you need help, don' t hesitates to call and ask your tutor to provide it.

1. Read this course guide thoroughly.
2. Organise a study schedule: Refer to the course overview for more details. You should note that it is expected of you to devote at least 2 hours per week for studying this course. The number of hours to be devoted for intensive study stated above is outside other need driven academic activities like self-help, group discussion and instructional facilitation Note the time you are expected to spend on each unit and how the assignments relate to study units. Important information e.g., details of your tutorials, and the date of the first day of the semester is available. You need to gather together all these information in one place, such as in

your diary or a wall calendar. Whatever method you choose to use, you should write in your own dates for working on each unit.

3. Once you have created your own study schedule, do everything you can to stick to it. The major reason why students fail is that they get behind with their course work. If you get into difficulties with your schedule, please let your tutor know before it is too late for him to help you.

4. Turn to unit 1, read the introduction and the objectives for the unit.

5. Assemble the study materials. Information about what you need for a unit is given in the table of content at the beginning of each unit. You will almost always read both the study unit you are working on and one of the materials for further reading on your desk at the same time.

6. Work through the unit. The content of the unit itself has been arranged to provide a sequence for you to follow. As you work through the unit, you will be instructed to read sections from other sources. Use the unit to guide your reading.

7. Keep in mind that you will learn a lot by doing all your assignments carefully. They have been designed to help you meet the objectives of the course and, therefore, will help you pass the examination. Submit all assignments not later than the due date.

8. Review the objectives for each study unit to confirm that you have achieved them. If you feel unsure about any of the objectives, review the study materials or consult your tutor.

9. When you are confident that you have achieved a unit's objectives you can then start on the next unit. Proceed unit by unit through the course and to pace your study so that you keep yourself on schedule.

10. When you have submitted an assignment to your tutor for marking, do not wait until you get it back before starting on the next unit. Keep to your schedule. When the assignment is retuned, pay particular attention to your tutor's comments, both on the tutor-marked assignment form and also as written on the assignment itself. Consult your tutor as soon as possible if you have any questions or problems.

11. After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives (listed at the beginning of each unit) and the course objectives (listed in the course guide).

FACILITATORS/TUTORS AND TUTORIALS

There are 12 hours of tutorials provided in support of this course. You will be notified of the dates, time and location of these tutorials, together

with the name and phone number of your facilitator/tutor, as soon as you are allocated a tutorial group.

Your tutor will mark and comment on your assignments. He will also keep a close watch on your progress and on any difficulties, you might encounter, and provide assistance to you during the course. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not hesitate to contact your tutor by telephone, e-mail, or discussion if you need help. The following might be circumstances in which you would need help. Contact your tutor:

- Do not understand any part of the study units or other assigned readings.
- You have difficulty with the self – assessment exercise.
- Have a question or problem with an assignment, with your tutor' s comments on an assignment or with the grading of an assignment.

You should try your best to attend the tutorials. This is your only chance to have a face-to-face academic contact with your tutor and to ask questions on problems encountered in the course you are studying. To gain the maximum benefit from course materials' tutorials, prepare a question list before attending them. You will learn a lot from participating in discussions actively.

SUMMARY

This Course has refreshed your memory on the psychology of learning. The carefully organized units have also exposed you, to:

- The importance of investigations and research in psychology;
- various methods of investigation in psychology which researchers adopt;
- the different branches of psychology;
- the various theories of learning;
- the theories of permanency in learning including, the theory of transfer of learning;
- More importantly, the course has sharpened your focus on learning at the classroom level by applying the psychological findings of researchers to improve learning.

MAIN COURSE

CONTENTS

Module 1

UNIT 1: THE CONCEPT OF PSYCHOLOGY

Unit Structure

1.1   Introduction

Psychology as a branch of knowledge is devoted to the study of behaviour of human beings and animals. To this end, the relevance of psychology cannot be doubted, more importantly that the well-trained teachers will need it to understand the behaviour of his/her students in relation to the learning process. Ability to understand various techniques of carrying out investigation in the field of psychology will equally assist the teachers in resolving emergent educational problems. All the points mentioned above are the focus of this unit.

1.2   Intended Learning Outcomes

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

•   define psychology
•   identify different methods of investigation in psychology.

1.3   Definition of Psychology

Psychology affects every facet of our lives. A human being usually exhibits moods of joy and anger, have different learning ability and interact differently. When all these happen, we are eager in finding the circumstances that are surrounding these actions and make judgment in our own way. Psychology provides clues to these phenomena in a more scientific way. Therefore Oladele (1998) describes psychology as a science subject which seeks to comprehend, predict and control the behaviour of man and lower animals. As the society is getting more

complex, psychology assumes a vital position in solving human problems.

Psychologist uses scientific methods to understand why people behave the way they do and develop principles and theories about them. Psychology is premised on logical ways for knowing, explaining, controlling and improving behaviour. Psychologists attempt to find answers to (a) how human beings and animals receive stimuli from their environment and their perceptions about such stimuli (b) how organisms learn and remember experiences (d) how they differ in their characteristics and (d) cope with various problems in life in order to understand the complex nature of organism and to contribute to better standard of living of organisms.

Question: Define psychology according to your understanding?

1.4   Methods of Investigation in Psychology

1)   Survey Method: This is one of the most widely used techniques in psychology. It is a method of field observation. In this method, the researcher uses questionnaire or interview to obtain data from his/her respondents. The survey method is very important because the questions that are asked can be very pertinent to genuine problems and the responses can be got from the persons affected by the problems. The problem of this method is that the respondents may be biased when giving their responses.

2)   Test Method: Test is one of the methods used to elicit responses from the subjects. It is used to collect information about respondent's abilities, interests, attitudes and accomplishments. We can use test to seek information from a large number of people within a short time. Test method is more objective and therefore provides accurate data than questionnaire or interview.

3)   Observational Method: This is the careful study of human and animal's behaviour and record your findings simultaneously. In observing organism behaviour, the researcher needs to be highly skillful so that he/she can observe and record accurately in order to avoid subjective report. One of the disadvantages of this method is that the subject may decide not to show his/her true behaviour, if he/she knows that he/she is being studied.

4)   Experimental Method: This is a method in which the investigator makes use of both the main and control subjects in his/her findings. In this case, the researcher attempts to give special treatment to the experimental subject or group. i.e., the organism

which is being studied is taken to undergo certain laboratory procedures and conditions, while the control subject or group is not put under any special treatment or condition. It only provides a baseline against which to compare the experimental group.

5) Case Histories Method: This is a technique in which the researchers' collect data about the respondents through the existing scientific biographies or case histories of the respondents. In this case, histories of the individual are critically looked into so as to find out about certain problem or behavior in that person. This method is usually good in studying people with abnormal behaviour.

6) Longitudinal Method: This type of method makes the investigator to do an extensive study of the subject, through time, with measurements made at periodic intervals. This method does not depend upon the memories of those interviewed at a later date. The problem with the method is that if the respondent disappears or dies before the conclusion of the investigation, the investigator may not have a conclusive report.

Self-Assessment Exercises 1

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
1) Differentiate between:
   a. Experimental and Longitudinal Methods
   b. Test and Survey Methods
   c. Observational and Case Histories Methods.

1.5 Summary

This study has exposed the learner to the definition of psychology. It explains the importance of psychology to mankind. Effort was also made to explain various ways of investigating in psychology.
In this unit, learners have learnt about:
• Meaning of Psychology
• Methods of Investigation in Psychology

1.6   References/Further Readings/Web Resources

Crowl, T.K., Kaminsky, Podell, D.M., (1997). *Educational Psychology Windows on Teaching*. Chicago: Brown and Benchmark Publishers.

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1.7   Possible Answers to Self-Assessment Exercises

Question: Differentiate between:

a.   Experimental and Longitudinal Methods
b.   Test and Survey Methods
c.   Observational and Case Histories Methods.

Answer:

a.   Experimental Method: This is a method in which the investigator makes use of both the main and control subjects in his/her findings. In this case, the researcher attempts to give special

treatment to the experimental subject or group. i.e., the organism which is being studied is taken to undergo certain laboratory procedures and conditions, while the control subject or group is not put under any special treatment or condition. It only provides a baseline against which to compare the experimental group while Longitudinal method makes the investigator to do an extensive study of the subject, through time, with measurements made at periodic intervals. This method does not depend upon the memories of those interviewed at a later date. The problem with the method is that if the respondent disappears or dies before the conclusion of the investigation, the investigator may not have a conclusive report.

b. Survey Method: This is one of the most widely used techniques in psychology. It is a method of field observation. In this method, the researcher uses questionnaire or interview to obtain data from his/her respondents. The survey method is very important because the questions that are asked can be very pertinent to genuine problems and the responses can be got from the persons affected by the problems. The problem of this method is that the respondents may be biased when giving their responses while Test method is one of the methods used to elicit responses from the subjects. It is used to collect information about respondent's abilities, interests, attitudes and accomplishments. We can use test to seek information from a large number of people within a short time. Test method is more objective and therefore provides accurate data than questionnaire or interview.

c. Observational Method: This is the careful study of human and animal's behaviour and record your findings simultaneously. In observing organism behaviour, the researcher needs to be highly skillful so that he/she can observe and record accurately in order to avoid subjective report. One of the disadvantages of this method is that the subject may decide not to show his/her true behaviour, if he/she knows that he/she is being studied while Case histories Method is a technique in which the researchers' collect data about the respondents through the existing scientific biographies or case histories of the respondents. In this case, histories of the individual are critically looked into so as to find out about certain problem or behavior in that person. This method is usually good in studying people with abnormal behaviour.

UNIT 2: BRANCHES OF PSYCHOLOGY

Unit Structure

2.1   Introduction

Psychology is regarded as a science which studies human and animal behaviour. It studies different characteristics an organism can exhibit at a particular time or situation. Psychology attempts to study the people in relation to areas like social, education, physiological, genetics, environment and industrial settings.

2.2   Intended Learning Outcomes

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

- identify different branches of psychology
- discuss each of the branches of Psychology
- explain their relevance to our society.

2.3   Branches of Psychology

Psychology is divided into several branches such as social, clinical, counselling, educational, developmental, industrial, sports, physiology, experimental, comparative, genetics, abnormal, environmental and engineering. These branches of psychology are explained below:

1.   **Social Psychology:** This branch of Psychology is interested in the ways in which the behaviour of one affect other. It is the study of social behaviour and how they are influenced by the conditions in the society (Oladele, 1998). Social Psychology is about group or collective behaviour. Why does an individual conform to opinions of a group? What factors determine our judgment/impression of others?

It studies the ways in which a person' s thoughts, feeling and behaviour are influenced by that of other people. Hilgard, Atkinson and Atkinson (1971) reveal that social learning is concerned with the behavioural

processes, causal factors and results of interaction among persons and groups.

2. **Clinical Psychology**: This is the applied psychology that tries to use principles of knowledge in psychology to diagnose and treat emotional and behavioural problems. It uses the experiences gathered from developmental and abnormal psychology to determine the causative factors of a perceived problem. Psychologists in this field try to develop programmes of intervention that may assist the individual to overcome their emotional illness. A clinical Psychologist may work in places like hospital, juvenile court or practice privately.

3. **Counselling Psychology**: This is a field of Psychology typically used in the schools to give the students advice on problems of social adjustment, vocational/career or educational goals. The Psychologist assists the individual to discover his/her hidden or untapped talent in order to make use of this talent or resource effectively in solving personal problems. The counsellor changes the behaviour of his/her client through behaviour modification, modeling sensitization and rational thinking.

4. **Developmental Psychology**: Studies the process of human growth and the factors that are responsible for human behaviour from birth to the old age. This field of psychology seeks to find out the changes that take place during the individual' s cognitive, physical, emotional, motor, personality and social development. The major focus of the developmental psychologists are children and adolescents.

5. **Educational Psychology**: Is an applied psychology which seeks to find solution to the problems associated with the teaching and learning in the classroom. It is a branch of psychology that attempts to find the fundamental laws of human behaviour and their applications to learning, Skinner (1953). Educational psychology is concerned with the curriculum planning, teacher-training and instruction design. It helps the learners and the teachers to optimally benefit in teaching-learning activities.

6. **Industrial Psychology/Organizational Psychology:** This psychology is described by Oladele (1998) as the sub-field that applies psychological knowledge to areas like personnel policies, working conditions, production efficiency and decision-making. The psychologists in this field are concerned with the labour enhancement. They help industries or other establishments in personnel selection, training, leadership and management.

Organizational psychology is closely related to industrial. It deals with team building, development of communication skills, goal setting or job designs.

7.   **Sports Psychology:** This is a sub-field of psychology that tries to apply skills and knowledge in psychology to promote the efficiency of sports men and women. The sports psychologists work to develop programmes of intervention that may assist sports men and women to cope and adjust well in their psychomotor domain.

8.   **Experimental Psychology**: The major concern of the psychologists in this regard is to adopt scientific methods (experiment) in investigating how people react to stimuli, perceive the world around them, learn, respond and are motivated to action. It deals with the study of fundamental psychological processes such as sensation, learning, motivation, emotion and memory.

9.   **Comparative Psychology**: Comparative Psychologists make attempt to study the animals in order to compare the behaviour of different species. These set of psychologists investigate the abilities; needs and activities of different types of animals as compared with human beings.

10. **Genetics:** This is the psychology/ science of heredity, the science which deals with inherited attributes of an organism.

11. **Abnormal Psychology**: Deals with disruptive or behavioural disorder of individuals. The psychologists are interested in finding the causes of violent or behavioural problems or the treatment that can be adopted to tackle such emotional problems.

12. **Physiological Psychology**: Examines the relationship between the bodily processes and behaviour. This branch of psychology assesses the functions of different parts of the brain, how hormones affect individual' s behaviour and the physical processes involved in learning and emotions.

13. **Environmental Psychology**: This is the application of psychological knowledge in finding the relationship that exists between human beings and the environment. The goal is to assist in environmental planning designing in order to save the environment.

Self-Assessment Exercises 2

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
   1) Explain the usefulness of Social Psychology to Educational Settings?
   2) What are the implications of Developmental Psychology to teaching/learning activities?

2.4   Summary

This unit has provided an insight into various branches of psychology. It has "reviewed" the importance of each of the branches as a course of study. Psychology, a social science course is like a mother with many children. Some of the children given birth to are educational, social, genetics, clinical, counselling, abnormal, developmental, physiological, and environmental beings. Each has different features and functions it performs, but all adopt similar styles in carrying out their tasks.

2.5   References/Further Readings/Web Resources

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2.6   Possible Answers to Self-Assessment Exercises

Question 1: Explain the usefulness of Social Psychology to Educational Settings?

Answer:

- Social psychology studies the ways in which the behaviour of one individual such as student, teacher and other in the school environment affect other.
- Social psychology studies societal behaviour and how they are influenced by the conditions in the school environment.
- Social Psychology is about group or collective behaviour.
- Social psychology studies why an individual student conform to opinions of a group or influenced by peer influence.

Question: What are the implications of Developmental Psychology to teaching/learning activities?

Answer:
- Developmental psychology studies the process of human growth and how human growth process influences teaching and learning process.

- Developmental psychology studies the factors that are responsible for human behaviour from birth to the old age and how these factors influence development needs in the process of teaching and learning.
- Developmental psychology seeks to find out the changes that take place during the individual' s cognitive, physical, emotional, motor, personality and social development that are strongly connected with teaching and learning process.

Unit 3: Educational Psychology

Unit Structure

3.1   Introduction
3.2   Intended Learning Outcomes
3.3   Meaning of Educational Psychology
3.4   Implications of Educational Psychology to the Classroom
        Situations
        3.5.1   Psychology of Learning
        3.5.2   Definition of Learning
3.6   Summary
3.7   References/Further Readings/Web Resources
3.8   Possible Answers to Self-Assessment Exercises

3.1   Introduction

The relevance of Educational Psychology in the classroom cannot be over-emphasised. This is because a teacher who has skills and knowledge in psychology will be able to manage his/her classroom effectively. Besides, knowledge of psychology is a sine-quo-non to successful teaching-learning activities.

3.2   Intended Learning Outcomes

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

•   define Educational Psychology
•   identify the importance of Educational Psychology to the classroom situation
•   explain the meaning of Psychology of Learning.

3.3   What is Educational Psychology

According to Akpan (2019) Educational Psychology is
(1)   partly an experimental and partly an applied branch of
        psychology that focuses on how learning may be optimized
(2)   It studies and applies theories and concepts from all of
        psychology in all levels of educational settings ranging from pre-
        schools to university, including settings where out of school
        programmes are offered to families and communities.

Educational Psychology is an integral part of psychology which seeks to find how positive relationship/interaction can be established between the teacher, students and the learning process. According to Oladele (1998),

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educational psychology is an applied psychology which studies the ways in which the learner can be most effectively brought into contact with the learning process. Educational psychology is geared towards investigating or exploring the factors that will stimulate, enhance or obstruct the learning process. The knowledge and skills acquired from educational psychology will guide and direct in resolving the enormous problems confronting both the teachers and students in the classroom.

Question: Briefly explain the scope of educational psychology?

3.4.1 Implications of Educational Psychology to Classroom Situations

1) Educational Psychology allows the teacher to understand and predict the tone of his/her classroom that is it assists the teacher to understand the behaviour of every member of his/her classroom.

2) Educational psychology affords the teacher the opportunity to understand the factors that can enhance or impede teaching-learning activities.

3) Educational psychology helps the teacher to appreciate the importance of motivation, that is when, where and to motive the learner.

4) Educational psychology equips the teacher with the necessary skills to predict what might likely happen to a learner in terms of his/her personality, developmental stages and psychological problem.

5) Educational psychology gives the teacher the opportunity of varying his/her instructional strategies based on the behaviour of the students in the classroom. It is a known fact that no particular instructional method is regarded as the best. The viability of any instructional method is based on learners' characteristics as well as the instructions to be delivered at a particular time.

6) Educational Psychology enables the teacher to understand the interest of the learners and how to follow this in planning the curriculum or learning contents.

7) Educational psychology aids/guides the teacher in grading or placing the learners into a particular class. Feedback is an important aspect in the learning situation, a constant evaluation of students' performance will serve as a yardstick of measuring or assessing whether the students are responding positively to learning situation or there is a need for the teacher to adjust his/her teaching style.

8) Behavioural problem is an integral part of learning process. It is an undesirable act in the classroom. However, a teacher who is well trained will be able to explain why students behave

irrationally at a particular time and how the teacher can tackle such problems without much harm to the classroom teaching/learning activities.

9)   It also assists the teacher to assess his/her effectiveness. It is believed that teacher' s effectiveness is measured based on the learners' performance in the classroom, hence, a teacher with good foundation in psychology will be able to judge his/her own efficiency and competency.

Question: State five (5) reasons why teachers should have adequate knowledge of educational psychology?

3.5.1 Psychology of Learning

Psychology of Learning provides necessary theoretical and empirical data regarding the learning process. It describes the principles of learning, motivation strategies, transfer of learning, memory, retention and forgetting. The interest in Psychology of Learning is not just in academic per se, but is useful in understanding the fundamental problems or emotional development motivation, social behaviour and personality of people.

3.5.2 Definition of Learning

Burns (1995) regards learning as a relatively permanent change in behaviour, which includes both observable activity and internal processes such as thinking, attitudes and emotions. Learning occurs right from the birth of the child and proceeds until he/she dies. Learning is acquired due to the prior experience one has gained. A child may learn from his/her environment (teacher) consciously or unconsciously, and in the process, his/her behaviour is being modified either negatively or positively. However, the essence of enrolling in the school by the students is to acquire desirable/positive behaviour under the tutelage of the teacher. To this end, learning can be described as a process by which an individual:

i.   acquires a novel idea or experience to a situation; ii. retains and applies the idea, skills and knowledge in solving the confronting problems.

iii.   modify one' s behaviour by the experience gained in the past and making the change permanent.

In view of the above points, learning is considered as:

1)   relatively   permanent   change   in   behaviour

2)   not just a visible but also a manifest
        response of the learner 3) modifying
        the learner' s behaviour.
4)   being dependent on previously acquired experience.

Some behaviour cannot be described as being learnt because they occur at the moment of anatomical maturation. This type of learning occurs as one matures physically. For example, a child does not learn how to walk, eat or talk but acquires these skills as he/she advances in age. This behaviour is regarded as "specie-specific behaviour" (Ayeni, 1991).

Self-Assessment Exercises 3

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:

Question 1: Define learning?
Question 2: List factors that differentiate learning from maturation?
Question 3: Outline some of the qualities of a good learning?

3.6   Summary

In this unit learners have become acquainted with the meaning of educational psychology, its importance as well as the concept of psychology of learning. The motive behind this is to ensure the learners have foundation knowledge of educational psychology and learning before actually advancing in other concepts.

Educational Psychology is an applied psychology which seeks to find and provide necessary solutions to problems confronting the teacher and his/her students in the classroom.

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1.8   Possible Answers to Self-Assessment Exercises

Question 1: Define learning?

Answer:

Definition of Learning
Burns (1995) regards learning as a relatively permanent change in behaviour, which includes both observable activity and internal processes such as thinking, attitudes and emotions.

Learning can also be described as a process by which an individual:
i.   acquires a novel idea or experience to a situation;
ii.   ii. retains and applies the idea, skills and knowledge in solving the confronting problems.

iii.   modify one' s behaviour by the experience gained in the past and making the change permanent.

Learning is also described as:
1)   relatively permanent change in behaviour
2)   not just a visible but also a manifest response of the learner
3)   modifying the learner' s behaviour.
4)   being dependent on previously acquired experience.

Question 2: List factors that differentiate learning from maturation?

Answer:

Learning activities is different from maturation activities due to the following factors:

1.   Learning activity must acquire through a novel idea or experience to a situation;
2.   Learning activity must be retaining and the individual must apply the idea, skills and knowledge in solving the confronting problems.
3.   Learning activity must modify an individual behaviour by the experience gained in the past and making the change permanent.

Question 3: Outline some of the qualities of a good learning?

Answer:

Qualities of good learning include:

1.   Good learning must be a relatively permanent change in individual learner's behaviour
2.   Good learning must not just be visible but also a manifest response of the learner.
3.   Good learning must modify the learner' s behaviour.
4.   Good learning must be dependent on previously acquired experience.

Module 2: Theories of Learning

Module Structure

Unit 1: The Theories of Learning: Ivan Pavlov

Unit Structure

1.1   Introduction

Theories are the foundations for most of the discoveries in psychology. Several learning theories have since been developed to explain how the learners respond to particular stimuli under certain influences. In this unit, you are exposed to classical conditioning theory of Ivan Pavlov and its implications to teaching-learning activities.

1.2   Intended Learning Outcomes

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

•   define learning theories
•   explain the meaning of Classical Conditioning Theory of Ivan Pavlov
•   discuss the classroom implications of Classical Conditioning Theory.

1.3   Learning Theories

A theory is a set of generalised statements supported by experimental evidence. Marx (1971) defines theory as a provisional explanatory
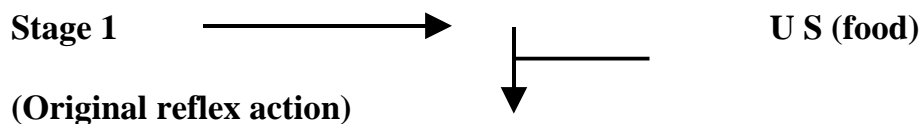
proposition or set of propositions, concerning some natural phenomena. A theory is based on the preliminary findings of previous researchers. Several theories have therefore evolved about how people learn, while some theories are better than others in explaining types of learning. However, no particular or single theory is sufficient to explain how all learning takes place. Some of these theories are explained below:
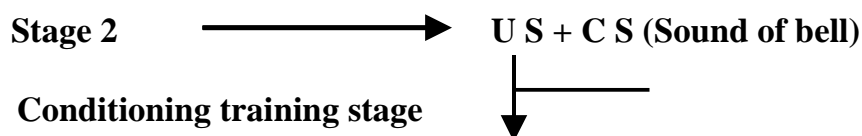
Classical Conditioning of Ivan Pavlov
Ivan Pavlov (1849-1936), was a renowned Russian Psychologist. He propounded the theory of classical conditioning in learning. Classical conditioning theory explains how an organism's behaviour becomes paired with some stimuli/factors in the environment. This theory, sometimes referred to as "stimulus-substitution", represents a condition where through contiguity and repetition in a presentation of a stimulus, a learner generalizes an existing stimulus-response connection to some new stimuli.
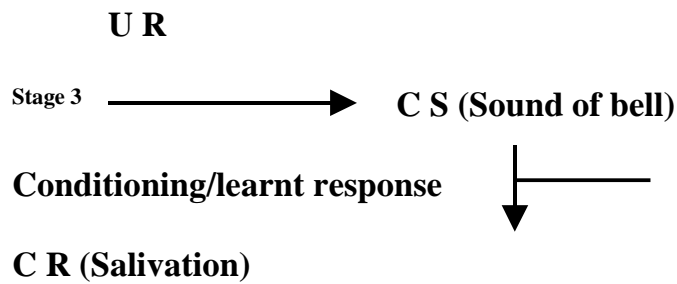
The focus of this theory is on a pattern of learning where the catalyst for behaviour change is, what precedes behaviour (Biggs and Shermis, 1992, Ney, 1981). The theory was based on the fact that unconditioned stimulus would originally produce unconditioned response. For example, Pavlov believed that the food (U S) would naturally produce salivation (U R) in dog. This kind of reaction or response was referred to as unlearnt reflex action. He went further to say that when U S (food) is paired with the sound of bell (C S) i.e., conditioned stimulus, the dog would produce salivation (U R). This is what he called the conditioning stage. At another stage, U S was removed leaving C S alone. After the experiment, the dog produced conditioned response (C R) salivation.

This stage of learning could be referred to as manifestation of conditioned response (learnt behaviour). Thus, the experiment is summarised below with these graphic illustrations:

Stage 1 ⟶ **U S (food)**

(Original reflex action)

U R (Salivation)

Stage 2 ⟶ **U S + C S (Sound of bell)**

Conditioning training stage

U R

Stage 3 ──────────────→ **C S (Sound of bell)**

Conditioning/learnt response

C R (Salivation)

Fig.1.1

From the above illustrations the following revelations were made:

1.   That when U S alone was presented to the dog, the dog only produced U R. i.e., the behaviour of the organism was a reflex or natural one.
2.   By the time the U S was associated with C S (bell), the dog started to condition itself to the sound of bell.
3.   When C S alone was presented to the dog, it had already conditioned its response to the sound of the bell, hence, conditioned response was emitted.
4.   When bell was no longer accompanied with the food, the tendency of the dog to salivate gradually diminishes until it finally stopped (Extinction Stage).

Cherry (2019) identifies the following concepts which are closely associated with classical conditioning.
i.   Acquisition – the initial period of learning.
ii.   Extinction – disappearance of learned behaviuor when there is no reinforcement of learned behavior.
iii.   Spontaneous recovery – Appearance of the conditioned response after a rest period or period of lessoned response.
iv.   Stimulus generalisation: when an organism responds to a stimulus in the same way that it responds to a similar response.
v.   Stimulus Discrimination: Ability to distinguish between a conditioned stimulus and other stimulus that had not been paired with the unconditioned stimulus. Cherry K. (2019) Classical conditioning is a step-by-step guide to how classical conditioning really works:

1.   That when U S alone was presented to the dog, the dog only produced U R. i.e., the behaviour of the organism was a reflex or natural one.
2.   By the time the U S was associated with C S (bell), the dog started to condition itself to the sound of bell.

3.   When C S alone was presented to the dog, it had already
       conditioned its response to the sound of the bell, hence,
       conditioned response was emitted.
4.   When bell was no longer accompanied with the food, the
       tendency of the dog to salivate gradually diminishes until it
       finally stopped (Extinction Stage).
5.   To make the dog recover from extinction, it must be presented
       with U S again.

Question: Briefly write short notes on the following graphic
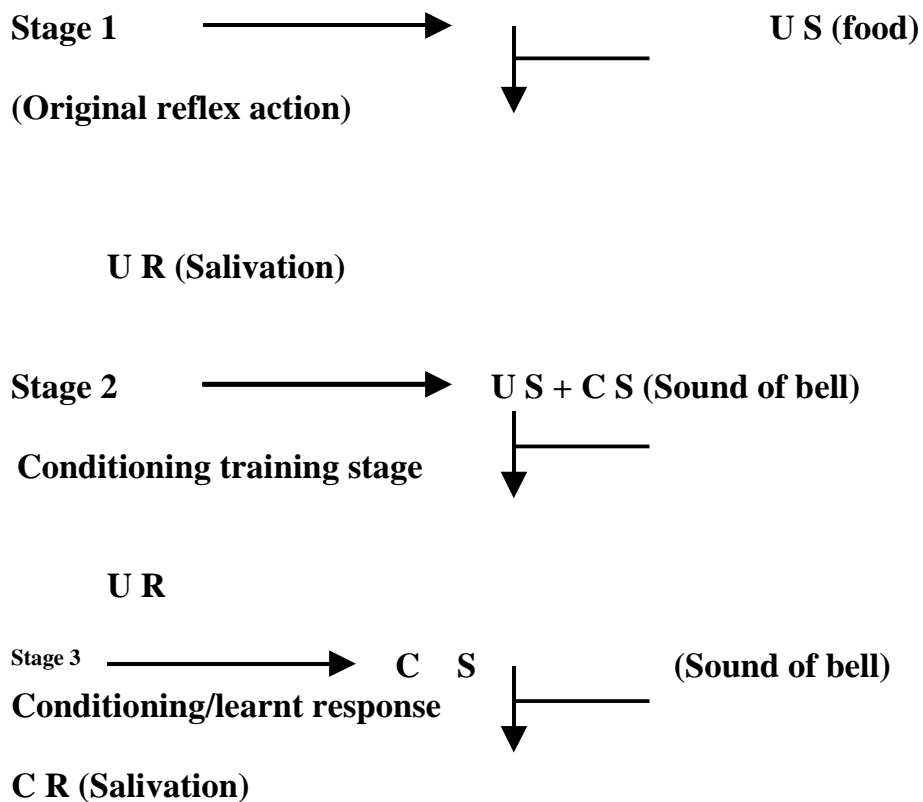representation of Ivan Pavlov classical conditioning experiment?

Stage 1 ⟶ ┤   **U S (food)**

(Original reflex action)   ↓

        U R (Salivation)

Stage 2 ⟶ **U S + C S (Sound of bell)**

 Conditioning training stage   ↓

        U R

Stage 3 ⟶ **C   S** ┤   **(Sound of bell)**
Conditioning/learnt response   ↓

C R (Salivation)

 Fig.1.2

1.4   Implications of Pavlov' s Theory to Classroom Situations

1.   The theory believed that one must be able to practise 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 will be presented with a new one.

2.   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.

3.   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-Assessment Exercises 1

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:

Question 1: According to classical conditioning theory of learning what is an Extinction period?

Question 2: Use concrete examples to describe Unconditioned Stimulus, Unconditioned Response, Conditioned Stimulus and Conditioned Response according to Ivan Pavlov experiment?

1.5   Summary

A theory is a set of generalised statements supported by experimental evidence. Classical conditioning theory was formulated by Ivan Pavlov and the basic tenet of the theory is that behaviour of an organism can be manipulated using some environmental factors. The key relevance of theory to the learning is: it emphasises practice of one task before moving on to another and encourages the use of motivation for effective learning.

It is believed that the learners and more importantly the teachers have greatly benefited from this theory. The teachers should be familiar with this theory and apply it to teaching-learning activities where applicable.

1.6   References/Further Readings/Web Resources

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1.8   Possible Answers to Self-Assessment Exercises

Question 1: According to classical conditioning theory of learning what is an Extinction period?

Answer:

Extinction period – This period is referred as disappearance of learned behaviuor when there is no reinforcement of learned activity, experience or skill.

Question 2: Use concrete examples to describe Unconditioned Stimulus, Unconditioned Response, Conditioned Stimulus and Conditioned Response according to Ivan Pavlov experiment?

Answer:

1. Example of Unconditioned Response is presentation of food that is the meat powder.
2. Example of Unconditioned Stimulus is salivation by the dog after seeing the meat powder.
3. Example of Conditioned Response is sound of bell use in training the dog to salivate when presented with meat powder.
4. Example of Conditioned Stimulus is the dog salivating without been presented with food.

UNIT 2: B. F. SKINNER'S INSTRUMENTAL CONDITIONING

Unit Structure

2.1   Introduction
2.2   Intended Learning Outcomes
2.3   Instrumental/Operant Conditioning Theory of B.F. Skinner
2.4   Classroom Implications of Instrumental/Operant Conditioning Theory
2.5   Summary
2.6   References/Further Readings/Web Resources

2.1   Introduction

In this unit, you are to learn about Instrumental/operant conditioning theory by B.F. Skinner. Skinner revealed in his theory that to understand behaviour of an organism, the researcher must manipulate both its behaviour and observable events in a confined setting.

2.2   Intended Learning Outcomes

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

•   describe Instrumental/operant conditioning
•   explain the implications of instrumental/operant conditioning theory to the classroom situations.

2.3   B.F. Skinner Theory of Instrumental or Operant Conditioning

Instrumental conditioning theory of learning was formulated by B.F. Skinner who was an American Psychologist. His theory came based on the lapses discovered in the classical conditioning theory by Ivan Pavlov. Skinner believed that classical conditioning explained only how behaviour that has already been acquired can occur in the presence of a new stimulus (Iversen, 1992). Operant or instrumental conditioning, however, believed that most learning consists of acquiring new behaviour. He believed that behaviour is an outcome of response that follows the action. The learner will possibly repeat the action or a particular behaviour if it is followed/ rewarded with a pleasant consequence (positive reinforcement).

Skinner explained the two types of responses in his theory. One can be elicited only by the stimulus or information an individual acquires at a particular period (reflex response). For example, stepping on a sharp object or touching a hot metal will originally make someone to produce reflex response. The second type is the response that an individual elicits following his/her own decision. This type of response is called operant conditioning. It is based on the fact that behaviour operates upon the environment to generate its own response. This operant behavior emits voluntary response. Operant conditioning believes that behavioural responses become connected to environmental stimuli largely as a result of what happens after the response occurs.

To establish his claims, Skinner performed many experiments with pigeons and white rats in the laboratory. He constructed a box (Skinner box) with a small lever inside it. The lever releases food to the animals whenever the lever is pressed. In one of the experiments, a hungry rat is placed in the box and if the rat presses the lever, the food would drop for it. The lever in this box is mechanically connected to a device that automatically records every attempt the rat made.

In the box the rat moved around tirelessly and each time the lever is pressed, the food falls for the rat. The rat becomes persistent in pressing the lever so that the food could fall. The food that comes down for the rat reinforces its action, this lever pressing becomes a conditioned response for the rat. In contrast, if the food is not accompanied with the pressing of lever, the number of presses would fall gradually to the lowest point. In this type of theory, it is the result or consequence of a behaviour that makes that behaviour more likely to be repeated on learned. If the result of behaviour is gratifying, one is likely to respond the same way the next time one encounters that stimulus. In the above experiment, the pressing of lever becomes instrument (instrumental).

Skinner in this theory identified the two types of reinforcers, they are positive and negative reinforcers. The stimulus that occurs after a response is called a reinforcer. Giving a pleasant or complimentary remark to a student for scoring a good mark in an assignment or homework is a positive reinforcer. By this action, it is likely that such a student will want to continue doing his/her assignment promptly. However, the student who receives punishment for misbehaving in the classroom is not likely to repeat the action for which he/she has received unpleasant/negative reward.

Question: Outline the major reasons why B. F. Skinner came up with Instrumental or Operant Conditioning theory after Ivan Pavlov has demonstrated fully on how learning take place?

2.4 Classroom Implications of Instrumental/Operant Conditioning Theory

Akpan (2019) states that operant conditioning is very useful in areas of students benhaviour management, shaping of skill and performance. This could be done through approvals, affirmation and encouragements.

1.   The teacher should know that the environment or the conditions in which the students learn are very significant to the Intended Learning Outcomes, hence, the teacher should provide conducive learning environment and conditions for his/her students.
2.   Reinforcement is an essential factor if the students must perform well in a given task. To this end, the teacher should not neglect the use of motivation that can adequately propel the students into actions.
3.   If a student engages in a disruptive behaviour, the teacher should not reinforce such a behaviour rather, he/she should endeavour to tell such a student the dare consequence of that action.
4.   When there is interference in the transfer of experiences by the learners, the teacher may use explanations and reinforcement to strengthen the desired facts and weaken the undesired one.

Self-Assessment Exercises 2

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
Question: Write short notes on how the following
apply to classroom teaching and learning:
   a. Reflex Response?
   b. Reinforcement?
   c. Schedules of Reinforcement?

2.5 Summary

This unit has discussed the meaning of Instrumental/Operant Conditioning of B.F. Skinner. It mentioned the two major types of responses, the relevance of reinforcement as well as punishment to students' learning. Also, the implications of the theory to educational settings were discussed.

The Instrumental/Operant Conditioning of Skinner revealed that behaviour is an outcome of response that follows the action. Skinner believed that responses are divided into two. These are the involuntary

behaviour and operant response i.e., the behaviour that is dictated by the learner's interaction with his/her environment. The relevance of reinforcement/motivation and punishment to students learning is also discussed in this unit.

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2.7   Possible Answers to Self-Assessment Exercises

Question: Write short notes on how the following apply to classroom teaching and learning:
a.   Reflex Response?
b.   Reinforcement?
c.   Schedules of Reinforcement?

Answer:

a.   Reflex Response is the natural or unlearned responses elicits only by the stimulus or information an individual acquires at a particular period. For example, touching a hot metal will originally make someone to produce reflex response.

b.   Reinforcement is the positive or negative stimulus that occurs after a response and they are called a reinforcer. Giving a pleasant or complimentary remark to a student for scoring a good mark in an assignment or homework is a positive reinforcer. By this action, it is likely that such a student will want to continue doing his/her assignment promptly. However, the student who receives punishment for misbehaving in the classroom is not likely to repeat the action for which he/she has received unpleasant/negative reward.

c.   Schedules of reinforcement are the precise rules that are used to present (or to remove) reinforcers (or punishers) following a specified operant behaviour. These rules are defined in terms of the time and/or the number of responses required in order to present (or to remove) a reinforcer (or a punisher).

UNIT 3 EDWARD BANDURA'S SOCIAL LEARNING THEORY

Unit Structure

3.1   Introduction
3.2   Intended Learning Outcomes
3.3   Social Learning Theory of Albert Bandura
3.4   Classroom Implications of Social Learning Theory
3.5   Social Constructivist Theory of Lev Vygotsky
        3.5.1 Classroom Implications of Vygotsky' s Theory
3.6   Summary
3.7   References/Further Readings/Web Resources
3.8   Possible Answers to Self-Assessment Exercises

3.1   Introduction

In this unit, you will learn about Albert Bandura' s theory of social learning. The Bandura' s theory focused on the behaviour of individual and groups and how behaviour is affected by the presence or influence of other people.

2.0   Intended Learning Outcomes

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

•   explain social learning theory
•   discuss the implications of the social learning theory on the classroom situations.

3.3   Social Learning Theory of Albert Bandura

Albert Bandura is noted as one of the exponents of theory of social learning and observational learning. Social learning theory explains human behaviour from the point of continuous reciprocal interaction between cognitive, behavioural and environmental influences. For social learning theory to take place, there are four factors which must be present. These are:
a.   observers (learners),
b.   teacher (model),
c.   learners' attention and
d.   proximity or nearness.

The process of learning is influenced by the extent of identifications and imitations by the learners to the other three factors (Bandura, 1978).

In most cases, an individual will like to emulate a model who is perceived to be competent, powerful, and attractive, as well as someone whose behaviour is relevant to the observer (Bandura, 1986). This means that we learn by observing the behaviour of others (Miller & Dollard, 1941). In social learning theory, reinforcement is not a prerequisite for a learning to occur, but this increases the chance that what has been learnt will definitely be performed. This theory is therefore rested on the fact that an action or behaviour can be performed if the model is pleasantly rewarded. It is also believed that there is probability that an observer might drop a behaviour if he found out that the model has received a negative reinforcement for practicing such a behaviour.

Question: List and explain the process of learning according to social learning theory by Albert Bandura?

3.4   Classroom Implications of Social Learning Theory

1.   The teacher is a model for students in his/her classroom, and he/she has a profound effect on students' attitudes, beliefs and behavior (Crowl, Kaminsiky and Podell, 1997). In this case, the teacher should be a good model.
2.   The teacher should always make sure that he/she does not condone any irrational behaviour from his/her students. Any offending student should be appropriately dealt with, so as to serve as a deterrent to other members of the classroom.
3.   The teacher should not forget to give complimentary remarks such as "well done", excellent", "good boy/girl," "keep it up", as a way of encouraging other students to imitate a good behaviour.
4.   Teacher/parents should discourage their students/children from watching violent films or keeping friends of doubtful characters.

3.5   Social Constructivist Theory of Lev Vygotsky

Lev Vygostky believes that learning is a social interaction between the learner and the environment. For example, Vygotsky suggests that children will use play as a means to grow socially. He is noted mostly for introducing the zone of proximal development (ZPD), ZPD is the gap between what a child can do alone and what he can do with help or assistance from others. Vygotsky believes also that learners must have physical and social interaction with concrete objects for them to conceptualise and express their thoughts about objects and concepts.

3.5.1 Classroom Implications of Vygotsky' s Theory

- Teachers should provide a rich learning environment for pupils to see, feel, touch and opportunity for cooperative learning.
- Learners should be given guidance, supports as scaffolds to achieve optimal level of academic success.
- Teachers as experienced, trained adults should act as facilitators, models for learners.

Self-Assessment Exercises 3

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:

Question 1: Discuss the classroom implications of social learning theory of Albert Bandura?
Question 2: Discuss the classroom implications of social learning theory of Vygotsky' s Theory?

3.6 Summary

This unit has explained the meaning of social learning theory and factors that must be present for observational learning to take place. It also considered the educational implications of the theory.

Social learning theory explains human behaviour from the point of continuous reciprocal interaction between cognitive, behavioural and environmental influences. The teacher should be a good model to his/her students, and he should not take boisterous behaviour of his/her students with levity.

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1.7   Possible Answers to Self-Assessment Exercises

Question 1: Discuss the classroom implications of social learning theory of Albert Bandura?

Answer:
Classroom Implications of Social Learning Theory

1.   Learning from social learning theory indicated that the teacher is a model for students in his/her classroom, and he/she has a profound effect on students' attitudes, beliefs and behaviuor

formation and change. In this case, the teacher should be a good model.

2.   The teacher should always make sure that he/she does not condone any irrational behaviour from his/her students. Any offending student should be appropriately dealt with, so as to serve as a deterrent to other members of the classroom.

3.   The teacher should not forget to give complimentary remarks such as "well done", excellent", "good boy/girl," "keep it up", as a way of encouraging other students to imitate a good behaviour.

4.   Teacher/parents should discourage their students/children from watching violent films or keeping friends of doubtful characters.

Question 2: Discuss the classroom implications of social learning theory of Vygotsky' s Theory?

Answer:

1.   Application of Vygotsky' s Theory of learning suggest that teachers should provide a rich learning environment for pupils to see, feel, touch and opportunity for cooperative learning.

2.   Learners should be given guidance, supports as scaffolds to achieve optimal level of academic success.

3.   Teachers as experienced, trained adults should act as facilitators, models for learners.

UNIT 4: THE THEORY OF CONNECTIONISM BY EDWARD THORNDIKE

Unit Structure

4.1   Introduction

In this unit, you will read the major three laws propounded Thorndike on connectionism. He reveals that the foundation of learning is the association between sense impressions and impulses to action. The implications of the theory are also discussed.

4.2   Intended Learning Outcomes

By the end of this unit, you should be able to:
•   describe theory of Connectionism of Thorndike
•   evaluate the relevance of connectionism theory to the teaching and learning process.

4.3   Connectionism Theory of Edward Thorndike

Edward Thorndike was an American psychologist and lived between 1884 and 1949. Thorndike titled his theory "Connectionism". He derived this theory by using cats, puzzle box and food. According to Thorndike, the fundamental of learning is the association between sense impressions and impulses to action (stimuli and responses). These associations become strengthened, or weakened by the nature and frequency of the stimuli-responses pairings. This means that an organism will repeat the behaviour if it obtains a pleasant or satisfying stimulus after first demonstrating it. He therefore postulated that learning in an organism involves the act of selecting the most appropriate response and associating it with specific problems or stimuli. Thorndike then described this type of theory as learning by "trial and error" or "trial and success".

In arriving at this theory, a cat was put in a puzzle box, with Food outside it. The logic was that the cat has to escape before it could get the food. There was a release mechanism inside which the cat would operate

before it could get outside. In the process, the cat made a series of effort to get outside. Eventually, it succeeded in operating the mechanism, which paved way for its escape and obtaining the food. On the subsequent attempt, the random movement was reduced, and the cat concentrated much on the direction of the release mechanism until it was able to escape again. The help of the "release mechanism" made it possible for the cat to succeed in its escape, hence this type of learning is also known as "instrumental conditioning"

Question: Briefly describe the learning theory of connectionism?

4.3.1 The Laws of Thorndike

In line with the experiment performed above, Thorndike came up with a set of laws which are believed to be responsible for learning in organisms. These are the laws of readiness, exercises and effect.

1.   Law of Readiness: This law emphasizes the desire/zeal of an organism to perform an action. It is the physiological condition of an individual to embark on a task. Since someone has been motivated to carry out an action, doing it at that point satisfies the actor and not discouraging him.
2.   Law of Exercises: This refers to strengthening or weakening of an event. Thorndike explained that repetition promotes learned associations, (Stimulus and response). Constant practice is necessary if an action is to be strengthened. Lack of practice may weaken an event.
3.   Law of Effect: This refers to the consequence which an animal obtains for an action performed. It is the outcome of a response. Thorndike believed that any act that produces a satisfying effect will be repeated.

4.4   Classroom implications of Thorndike's Theory

1.   One of the major applications of connectionism to teaching and learning process is that teachers should know that the students learn better when their needs and interests are considered, hence the teacher should ensure that the learning activities revolve around the students.

2.   The connectionism theory of learning placed great emphasis on readiness as a prerequisite for learning; the teacher is therefore advised to consider the mental or cognitive capability of the learners when planning the curriculum or instructional contents.

3.   The teacher should recognise the fact that the students will like to repeat the actions for which they received positive regards. Hence, the teacher should always use various motivational strategies to sustain the interest of the students during teaching and learning process.

4.   The teacher should always present his/her materials in a logical and more coherent way. This is the major way of arresting and sustaining the interest of the learners in pedagogical activities.

5.   The teacher should consider the use of punishment as a last option in reducing the undesirable behaviour in his /her classroom. This is because the punishment cannot actually address the problem it rather makes the students to be more violent in the classroom.

6.   The teacher should recognise the important of exercises or practice in the learning process. Learning may not occur unless practice is reinforced (Hull, 1943). This means that the teacher should engage his/her students in assignment or homework, if meaningful learning must be achieved.

Self-Assessment Exercises 4

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:

Question 1: Evaluate the implications of the following to teaching and learning process:
i.   Edward Thorndike law of readiness
ii.   Edward Thorndike law of exercises and,
iii.   Edward Thorndike law of effect?

4.5   Summary

This unit has dealt with the nature of theory of connectionism as propounded by Thorndike. It is believed that you must have understood the importance of readiness, exercises and effect or consequence on the learning process. Thorndike' s theory emphasises that the fundamental of learning is the association between sense impressions and impulses to action (stimuli and responses). The theory stresses readiness, exercises and effect as the conditions for learning.

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1.8   Possible Answers to Self-Assessment Exercises

Question 1: Evaluate the implications of the following to teaching and learning process:
i.   Edward Thorndike law of readiness
ii.   Edward Thorndike law of exercises and,
iii.   Edward Thorndike law of effect?

Answer:

1.   Edward Thorndike law of readiness law of readiness emphasizes the desire/zeal of an organism to perform an action. This can be seen as the physiological condition of learner to embark on a learning task. Since the learner has been motivated to carry out an

action, doing it at that point satisfies the actor and not discouraging him.

2. Edward Thorndike law of exercises refers to strengthening or weakening of an event. Thorndike explained that repetition promotes learned associations, (Stimulus and response). By engaging learner in constant practice is necessary if an action is to be strengthened on the part of the learner. Lack of practice may weaken an event.

3. Edward Thorndike law of effect can be referred to the consequence which a learner obtains for accomplishing or performing a learning task. It is the outcome of a response. As Thorndike believed that any act that produces a satisfying effect will be repeated.

UNIT 5: GESTALT/COGNITIVE FIELDS OF LEARNING

Unit Structure

5.1   Introduction
5.2   Intended Learning Outcomes
5.3   Cognitive Field/Gestalt Theory of learning
5.4   Classroom Implications of Cognitive Field Theory of
        Learning
5.4   Differentiate between Behaviourists and Gestalts Theories
5.5   Summary
5.6   References/Further Readings/Web Resources

5.1   Introduction

Cognitive Field or Gestalt theory was formulated by a group of German Psychologists. The theory emphasizes insightful learning rather than mechanical conditioning. It is believed that meaningful learning can only take place through a sequence of problem-solving approach. In this unit, you will learn how learning takes place through the application of logical principles and previous experience.

5.2   Intended Learning Outcomes

By the end of this unit, you should be able to:
•   describe Cognitive Field theory of learning
•   enumerate the importance of cognitive theory on the learners
•   differentiate between Behaviourists and Gestalt theory.

5.3   Cognitive Field Theory of Learning

The views of many theorists were collected by Gestalt to formulate a cognitive field theory. Notable among them were Max Wertheimer, Kurt Koffka, and Wolfgang Kohler. Gestalt in German language means "organization or fusion". This theory rejected the views that consider the learning process in an isolated form rather than in a total or holistic form. The theory does not support associating bits of experiences as postulated in the stimulus-response theories. This theory is of the opinion that parts are configured or organised to make complete or meaningful experiences or impressions. The emphasis here is on the importance of experience, meaning, problem solving and the development of insights (Burns 1995). The Gestalt therefore placed more credence on insightful learning rather than trial and error like that of Thorndike or mechanical conditioning as performed by Ivan Pavlov in his classical conditioning theory.

Insightful learning is hinged on the fact that animals undergo a series of problem-solving approach following a sequence of principles or logic and previous experience before arriving at a solution. In this theory, the cognitive or mental processes of the animals are regarded as the yardstick in the development of insightful learning. To establish this fact, Gestalt Psychologists performed several experiments using apes as subjects. In one of the experiments, an ape (Sultan) was put in a cage. This sultan was very intelligent. In the cage was a stool and banana, hung on the top of the box. Initially, several unsuccessful attempts were made by the apes to get the banana. Suddenly, sultan decided to pull out the stool and climbed it to pluck the banana from where it was hung. This type of learning is called insightful, because it involves problem-solving approach.

Another experiment was performed with several apes including sultan, put in the box with a banana and a stick lying outside the cage. Several experimental apes stretched their hands to pick the banana from outside but were unsuccessful. The brilliant one among them (sultan) devised a solution by picking the stick outside first and using it to draw the banana closer until its hand touched the banana.

The last experiment performed by Kohler on this insightful learning, was an extension of the second experiment. In this case, the apes were put in the cage; banana and two sticks (long and short) were lying outside. None of these two sticks could get to the banana unless by joining them together. The apes in the box made series of attempts to rake in the banana with the two sticks separately without succeeding. It was sultan who later manipulated and fixed the two sticks together before it could finally collect the banana. All these experiments indicated that learning cannot take place in a segregated way but in a complete form.

Insightful learning therefore adopts the following strategies in learning:
(a)   identify and define the problem or task;
(b)   formulate the hypotheses;
(c)   come out with different solutions;
(d)   select /implement the viable solution; and
(e)   evaluate / appraise the selected solution or revisit the problem.

Question: Discuss the process involved in cognitive learning approach?

5.4   Differences between Behaviourists and Gestalt Theories of Learning

Behaviourists Theories	Gestalt Theories
1. Response is programme i.e., mechanical	Response is systematic and organized in cognitive structure.
2. This learning takes place through trial and error or trial and success.	The learning process is based on the problem-solving approach
3.Learning is temporal. Extinction can set in if the learning is not reinforced	Learning is permanent experience gained and can be used or transferred into another related task.
4.The result or outcome is the ultimate of the behaviourists	Gestalt are more interested in the processes and justification of a task.
5.In this type of learning, learner becomes onlooker (passive) while he is being	The learner plays an active part in gestalt learning. The learner is involved in finding out the solutions to the problems being investigated.
6.Behaviourists believe more on teacher-centeredness. manipulated or subjected to a particular condition. This type of learning is simple. It is good for elementary learning	Gestalt learning is a complex one. It's is good for higher thinking. It is good where the learner will have to reason logically and analytically before having a meaning solution to
7.Most of the processes to the solution are done by the teacher.	the problem. Cognitive theorists emphasize learner-centered approach. They believe in the "doing it yourself" system.
8.There is no association interrelatedness of the problems.	This theory organizes the problems so that the learners can know the relationship between or among them. e.g. in one of the experiments, Gestalt placed banana and sticks side

A graphic representation of the differences between behaviourist and gestalt/cognitive theories of learning.

Question: Carefully evaluate the five (5) major differences between behaviourist and cognitive experiments of how learning takes place?

5.5   Classroom Implications of Gestalt Theory

1.   This theory has developed the concept that learners have different needs and concerns at different times, and that they have subjective interpretations in different contexts (Burns, 1995).
2.   The teacher should realise the importance of instructional aids during teaching– learning activities, hence he/she should make use of teaching aids for a meaningful learning in the classroom.
3.   The teacher should make his/her teaching more participatory to the students. It is on this basis that the teacher will be able to discover the hidden talents in his/her students.
4.   If the classroom experiences of the students are related, students will be able to transfer the gained experience into future learning. This will then promote interrelatedness.
5.   The teacher should not neglect the use of motivational strategies in teaching – learning activities. This reinforcement will stimulate the efforts of the students in the classroom.

Self-Assessment Exercises 6

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:

Question 1: Explain four classroom implications of behaviourist theory of learning?

5.6   Summary

Gestalt theory is very important in learning as it advocates that learner learn best when they are provided with the opportunity to explore or find the solutions to the problems being discussed. The teachers are advised to make constant use of this theory in their classrooms teaching/learning activities.

Gestalt theory is of the opinion that parts are configured or organised to make complete or meaningful experiences or impressions. This learning process is based on the problem-solving approach. The theory emphasizes the use of motivation and students experience in learning.

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1.8   Possible Answers to Self-Assessment Exercises

Question 1: Explain four classroom implications of behaviourist theory of learning?
Answer:

1.   This theory has developed the concept that learners have different needs and concerns at different times, and that they have subjective interpretations in different contexts (Burns, 1995).
2.   The teacher should realize the importance of instructional aids during teaching– learning activities, hence he/she should make use of teaching aids for a meaningful learning in the classroom.
3.   The teacher should make his/her teaching more participatory to the students. It is on this basis that the teacher will be able to discover the hidden talents in his/her students.

4.   If the classroom experiences of the students are related, students will be able to transfer the gained experience into future learning. This will then promote interrelatedness.

5.   The teacher should not neglect the use of motivational strategies in teaching – learning activities. This reinforcement will stimulate the efforts of the students in the classroom.

UNIT: 6 EDWARD TOLMAN THEORIES OF LEARNING AND BENJAMIN BLOOM'S TYPES OF LEARNING

Unit Structure

6.1   Introduction
6.2   Intended Learning Outcomes
6.3   Cognitive or Sign Learning of Edward Tolman
6.4   Blooms' Types of Learning
6.5   Summary
6.6   References/Further Readings/Web Resources
6.7   Possible Answers to Self-Assessment Exercises

6.1   Introduction

One of the importance of sign learning of Edward Tolman is on how the individual can use the environmental factors to obtain a goal. It is a goal-oriented learning. Bloom also formulated three learning domains i.e., cognitive, affective and psycho-motor. You will learn these in this unit.

6.2   Intended Learning Outcomes

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

- define cognitive or sign learning of Tolman
- explain Blooms' Types of Learning.

6.3   Cognitive or Sign Learning of Edward C. Tolman

Tolman lived between 1886 and 1959. He was an American Psychologist and his theory was made up of unharmonised facts collected from different theorists. Hilgard *et al.* (1971) defined sign learning as an acquired expectation that one stimulus will be followed in a particular context. Tolman made use of rats and mazes in his experiments. The motive of sign learning is the ultimate goal i.e. "What leads to what" (Purposive behaviourism). This may explain why a rat in Tolman' s experiment decided to run through a complex maze to develop a kind of cognitive structure or map that led it to its goal.

Tolman' s theory emphasized the association between the stimuli rather than stimulus-response. For Tolman, learning does not depend on reinforcement nor reward, however, these must enter the picture (be in 36 focus) if learning is to be manifested in performance. In explaining this theory, five types of learning are adopted; these are approach, escape, avoidance, choice-point and latent. These learning types are

based on the fact that learning is always purposive and goal oriented, involve the use of environmental factors to obtain a goal, and that an organism will prefer to take the shortest or easiest way to achieve a goal. Tolman' s theory combines the advantages of stimulus-response theories and cognitive field theories.

6.3.1 Educational Implications of Tolman's Theory

Tolman believed that
•   Learning of a task depends on the capacity of the learner.
•   Practice cannot help the learner in initial selection of response.
•   Motivation simply encourages performance and not in learning something new.
•   Insightful learning must be emphasised.
•   Forgetting is as a result of resistance between a drive and an object.

Question: Following your understanding of Edward Tolman theory of learning discuss how the following can be applied to the classroom teaching and learning situation:
i.   Learning of a task depends on the capacity of the learner.
ii.   Practice cannot help the learner in initial selection of response.
iii.   Motivation simply encourages performance and not in learning something new.
iv.   Insightful learning must be emphasised.
v.   Forgetting is as a result of resistance between a drive and an object

6.4   Bloom' s Types of Learning

Benjamin Bloom (1956) developed three different levels of classifying Intended Learning Outcomes or Intended Learning Outcomes. These are cognitive, affective and psycho-motor domains: these classifications are referred to as Bloom' s taxonomy and the stages are divided from the simple to the complex. These stages assist the teacher in writing the Intended Learning Outcomes, designing the learning tasks or activities and also to prepare the assessments. These domains are:

6.4.1 Cognitive Domain: This deals with knowledge acquisition. It emphasises the development of mental or intellectual skills.

The cognitive domain is classified into six categories and the categorisation range from the simplest to the most complex one in the following order:
a.   **Knowledge:** This stage of learning is the simplest learning outcome. It is expected that at the stage of the learning and

accomplished learning tasks, a learner should be able to define, identify, mention, describe, list, state, name and label a previously learnt fact or information. Example of this is that at the end of this lesson, a learner should be able to mention categories of Bloom's taxonomy of learning.

b.   **Comprehension:** This is the second level in cognitive domain. It is a level where the learners learn to translate, summarize, interpret, rewrite, predict or explain the facts, principles, concepts, tasks or information. At the end of this lesson, a student should be able to summarise all the three types of domains.

c.   **Application:** At this level of cognitive domain, the learners should be able to apply the previously gained experiences into new task, principles, information, rules and facts. Application may involve changing, operating manipulating, relating etc. For instance, at the end of this lesson, a student should be able to apply the knowledge gained in the study of Bloom's taxonomy into the classroom situation.

d.   **Analysis:** This is the fourth stage in cognitive domain. It is the ability of the learners to distinguish, compare, contrast, relate, select or differentiate between the facts or making inferences.

e.   **Synthesis:** At this level of cognitive domain, learners should be able to build or create new tasks, facts, principles, logic, methods from constituent elements or diverse points. It is about putting parts together to form a whole, with emphasis on creating a new meaning or structure. Synthesis involves Examples are composition, compilation, explanation, modification, reconstruction, relating, rearranging, revision etc.

f.   **Evaluation:** This is the ability of the learners to make judgment or pass comments about an event, information. It takes the form of assessment, defense, criticism, justification, relating, describing etc.

6.4.2   Affective Domain: This domain gives judgment about our emotion. It describes how we deal with our feelings, values, appreciation, attitudes or motivation. This domain is divided into five categories. These are:

a.   **Receiving Information or fact:** This deals with how we receive information being passed onto us. It emphasises our willingness to hear or listen to others.

b.   **Responding to Information:** The level of responsiveness
        of the learners to learning tasks are judged in this area. It
        describes the willingness of the learners to respond to a given
        task satisfactorily. It is about how well the learners participate in
        the teaching-learning activities.

c.   **Valuing:** This is the value a person attaches to a
        behaviour   or phenomenon. Value   is   based   on   the
        internalisation of a set of specified values, while the clues to
        these values are expressed in the learner's overt behaviour and
        are often identifiable.

d.   **Organisation:** This is the process of organizing values into
        priorities in order to compare them and decide on the most
        appropriate ones.

e.   **Internalising Values:** This means that individuals have values
        that are consistent, stable and are controlling them. These values
        which form   the   characteristics   of   people   can   therefore
        predict   their behaviour.

6.4.3   **Psycho-motor Domain:** This level of domain is about physical
        skills. It deals with physical movement and coordination of an
        individual. These skills involve manipulation of fingers, legs and
        other parts of the body. Examples are cycling, dancing, running
        etc. Psycho-motor is divided into perception, set, guided
        response, mechanism, complex   over   response, adaptation and
        origination.

        Self-Assessment Exercises 6

        Attempt the following exercises to measure what you have learnt in
        this unit. This should not take you more than 5 minutes:
        Question: Write short note on the concept of sign learning by
        Edward Tolman?
        Question: What are the three levels of learning according to Bloom's
        learning classifications?

6.5   Summary

The two types of learning discussed in this unit are very significant in
our teaching-learning activities because they allow teachers to plan their
teaching and what the goals of the lesson will be. It is very important
that teachers are conversant with these learning types and apply the
principles in their daily classroom teaching/learning activities. In this
unit, you have also learnt about sign learning of Edward Tolman.

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1.8   Possible Answers to Self-Assessment Exercises

Question: Write short note on the concept of sign learning by Edward Tolman?

Answer:

Sign learning is an acquired expectation that one stimulus will be followed in a particular context. Edward Tolman made use of rats and mazes in his experiments. The motive of sign learning is the ultimate goal i.e. "What leads to what" (Purposive behaviourism). This may explain why a rat in Tolman' s experiment decided to run through a complex maze to develop a kind of cognitive structure or map that led it to its goal.

Tolman' s theory emphasized the association between the stimuli rather than stimulus-response. For Tolman, learning does not depend on reinforcement nor reward, however, these must enter the picture (be in

36 focus) if learning is to be manifested in performance. In explaining this theory, five types of learning are adopted; these are approach, escape, avoidance, choice-point and latent. These learning types are based on the fact that learning is always purposive and goal oriented, involve the use of environmental factors to obtain a goal, and that an organism will prefer to take the shortest or easiest way to achieve a goal. Tolman' s theory combines the advantages of stimulus-response theories and cognitive field theories.

Question: What are the three levels of learning according to Bloom's learning classifications?

Answer:

According to Benjamin Bloom (1956) learning stages or development developed in three different levels or stages. These were described or referred to as learners' Intended Learning Outcomes. This made Benjamin Bloom to classify the Intended Learning Outcomes into:
1. Cognitive domain
2. Affective domain and,
3. Psycho-motor domains

These classifications are referred to as Bloom' s taxonomy and the stages are divided from the simple to the complex. These stages assist the teacher in writing the Intended Learning Outcomes, designing the learning tasks or activities and also to prepare the assessments.

MODULE 3: THE THEORIES OF RETENTION IN LEARNING

Module Structure

Unit 1:   The Theories of Retention in Learning
Unit 2:   Transfer of Learning
Unit 3:   Motivation in Learning
Unit 4:   Classroom Implication of Motivation

UNIT 1: THE THEORIES OF RETENTION IN LEARNING

Unit Structure

1.1   Introduction
1.2   Intended Learning Outcomes
1.3   Memory
1.4   Theories of Forgetting
1.5   Classroom Implications of Theory of Remembering and Forgetting
1.6   Summary
1.7   References/Further Readings/Web Resources
1.8   Possible Answer to Self-Assessment Exercises

1.1   Introduction

Memory is the evidence that meaningful learning has taken place. It is the ability of someone to recall what has been previously learnt. If you learn a skill, activity or body of knowledge in the past and fail to remember it, it means you have forgotten and some factors must have been responsible for this. The implication of this is that you have to start all over.

1.2   Intended Learning Outcomes

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

•   define Memory
•   explain theories of forgetting
•   discuss the various classroom implications of forgetting and remembering.

1.3   Definition of Memory in Psychology

Human beings have limited attention and typically can only attend to just one input channel at a time; and when this piece of

input (information) is acquired, it is place in the short-term memory (STM), which is the work-bench where an individual does his/her thinking (Crowl, Kaminsky and Podell, 1997). Crowl and his associates explain that when a piece of information is acquired it must be properly processed, otherwise, such information dies off, and thus it becomes increasingly difficult for an individual to remember or recall such an idea. This therefore implies that a piece of information must be learnt repeatedly, and must not be too large at a time; otherwise, the STM may throw away some parts of the information. This often explains why people find it difficult to locate an item placed or kept somewhere when in need of it. It may then be assumed that when such an individual places an object, he/she has not taken time to "look and relook" and then commit the location of the object into heart in order that its location may be easily traced.

Memory is broken into three stages:
Encoding -----> Storage -----> Retrieval

Types of memory: The three main types or forms of memory are sensory memory, short term memory and long-term memory.

Sensory information is stored in sensory memory just long enough to be transferred to short term memory. (Wikipedia) https:/enm.wikipedia.org retrieved 23.3.2020

Short term memory is the part of the memory system that can hold information for a short time roughly 30 seconds (AlleyDog.com)

Long-term memory refers to unlimited capacity memory store that can hold information for a very long time.

This idea may apply in classroom situation, where a learner is taught a concept and would need to recall the facts surrounding the concept, for the teacher to conclude whether the lesson has been successful, and to also evaluate whether the learner has learnt. The ability of such a child to remember a learned concept, is the product of the process by which we commit the piece of information into memory contingent upon when the information is passed across to him/her. The short-term memory that does the initial processing of the information has the capability to store information for 20 seconds, and unless the receiver of the information acts on it, the information is forgotten.

This often explains why people find it difficult to locate an item placed or kept somewhere when in need of it. It may then be assumed that when such an individual places an object, he/she has not taken time to

"look and relook" and then commit the location of the object into heart in order that its location may be easily traced.

Similarly, for pieces of information to be stored in the memory at one time or the other, it must not be too large. This is because the short-term memory cannot hold too large a volume of information at a time, before it disposes of it. However, a better way to remember some pieces of information is to chunk them bit by bit; and by this recall can be enhanced. But to a greater extent, if we want to recall some of the bits that go into the STM, we need to rehearse very well. Rehearsal is a process by which we exercise the repeat of a piece of information so that such information does not elope from memory after the 20 seconds capacity of the STM. There are two types of rehearsal:

i.   Maintenance Rehearsal
ii.   Elaborate Rehearsal

In maintenance rehearsal, repetition is made of the piece of information, to allow one to act upon it. For example, if a police officer on the highway wants to keep the information of a vehicle whose driver has decided not to obey the stop and search order of the police on the check point, the officer could repeatedly (within a minute) recite the number plate information to another officer who then records it. This will enable the officer to easily track down the escaping vehicle another time.

In elaborative rehearsal, effort is made to pass a piece of information into the Long-term memory. Here, an association is made of a new piece of information with existing information in order, to retain the newly learned and to also aid recall. Apart from association, the learner has to repeat a new information and then associate it with an existing piece, so that when it is to be retrieved for use, it will be easier to recall.

a.   The Long-Term Memory: Some of the methods by which information is stored in the LTM memory are:
i.   Sentence creation: This is otherwise called verbal elaboration. It is a process by which a sentence is made with a learned concept as a component. For example, when a child is taught the alphabets, the teacher often associates the letters with an object as "B" for Ball, "E" for Elephant. The sentences that could be made are "B" for Ball", "kick the ball", "E" for Elephant, an elephant is big. When this is repeatedly done, the child easily recalls the concept being passed.
ii.   Creation of mental picture: When a concept is associated with an object as shown above, the child will recall quickly; e.g., letter B as in Ball. Whenever the child comes across letter B, she/he can also visualise a ball.

iii.   Creation of mnemonics: Here a learner could use acronyms i.e., first letter of each of the points being mastered, or an arrangement that makes the points meaningful to pronounce. Thus, when the individual wants to recall, it will be very easy to retrieve it from memory. A typical example is the arrangement of the characteristics of living things as MR NIGER   i.e.   M= Movement, R=Respiration, N=Nutrition, I=Irritability G=Growth, E= Excretion, and R=Reproduction.

After the learner has properly rehearsed a piece of learned material, the information is processed into the Long-Term Memory (LTM), from which the learner can recall for use at any time. However, in order to be able to recall more easily, the information that is newly acquired must integrate very well with already known information in the LTM. There are however two kinds of LTM which are:

1.   Semantic Long-Term Memory
2.   Episodic Long-Term Memory

In the semantic long-term memory, concepts that have peculiar names that can be mentioned by names are stored. But in the episodic LTM, a piece of episode or event is stored. Imagine you are a witness at an accident scene, will you ever forget the scene in your life? You will always recall the scene, whenever you witness another, linking it with vivid images of the present. Or whenever you are traveling on the same road where the accident occurred, you will always remember. The recall you are likely to make is of that episode of accident. This is different from being able to name an object, defining its characteristics as in a "Hoe", "used in tilling the ground" and having a "wooden handle and an iron blade" as in the semantic Long-term memory. However, the rehearsal or non-rehearsal may not necessarily aid recall. There may be a loss of memory and several factors are (likely to be) responsible for it. This is better understood with the aid of some theories of forgetting.

Question 1: Define memory?
Question 2: Explain five (5) strategies that can be used to help a learner's transfer learnt learning materials from short term memory to long-term memory?

1.4   Theories of Forgetting

There are various explanations in respect of how people forget what they have learnt. Some of the reasons why learner may forget previous learning activities are:

1.   **Decay factor**: After a relatively longer period of time, a piece of acquired information dies off the memory and an individual find it difficult to remember it again. Examples of this experience are the experiences acquired in the earlier part of one's life; and as the body systems grow, in addition to several experiences acquired, the earlier learned facts go into extinction.

2.   **Interference factor:** There are two types of interference and they are:

(a)   **Retroactive Inhibition**: When a person has just acquired a piece of information, the tendency is that the earlier acquired information becomes increasingly difficult to be remembered or even get lost. For example, when a person relocates to a new area of the city, there is the tendency for him to forget addresses of his earlier location in the city.

(b)   **Proactive Inhibition**: This is typically the opposite of the retroactive inhibition. In the above example, the inability of the individual to remember the present address but remembering the previous address is as a result of interference of the first experience.

3.   **Cue-dependence factor**: In order to remember a learned idea, an individual needs some cues that will aid it. An individual needs related ideas such as a sentence, a mental picture or a mnemonic to remember a fact (as mentioned above). Without this, the possibility for a piece of information to go into extinction is there.

1.5   Classroom Implications of Theory of Remembering and Forgetting

In order for learners to benefit from school activities, and to also apply classroom learning into future use, they must have good memory of classroom activities and learned subject matter. It is therefore the role of the teacher to assist the learners, train them in various rehearsal skills and strategies that learners can use to enhance their memory ability. Among such activities can be used to strengthen learners remembering and prevent forgetting are:

1.   Teacher should always associate a current learning with practical life examples.
2.   Use concrete objects to demonstrate objects learned in the classroom for learners proper understanding and comprehension.
3.   Teach the use of mnemonic devices, in order to aid leaners, recall ability and retention.

4.   Teacher can also use different rehearsal strategies to strengthen leaners memory of learnt materials.
5.   Teacher should arrange learning and teaching activities from simple and gradually to the most complex.
6.   Teacher encourages learners to see reasons and benefits of learning or engaging in any learning experiences or activities.
7.   Teachers should always active participation of learning in meaningful activities in and outside the classroom.
8.   Teachers should always consider the development needs of learners before and when selecting learning activities and experiences.

   Self-Assessment Exercises 1

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
Question: Write short notes on the following:
1.   Sensory memory. 2. Short-term memory. 3. Long-term memory

Question: Discuss any five ways that will ensure permanent retention

1.6   Summary

In this unit, learners have learnt about:
•   The Concept of memory
•   Remembering and Forgetting theories
•   Classroom implications of remembering and forgetting.

This unit has also discussed why people usually forget what they have learnt in the past and how they can remember or recall earlier learning. The unit will therefore assist the learners and teachers alike on how to improve the status of their memory and void forgetting.

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1.8   Possible Answers to Self-Assessment Exercises

Question: Write short notes on the following:
1.   Sensory memory. 2. Short-term memory. 3. Long-term memory

Answer:

1.   Sensory information is stored in sensory memory just long enough to be transferred to short term memory.

2.   Short term memory is the part of the memory system that can hold information for a short time roughly 30 seconds.

3.   Long-term memory refers to unlimited capacity memory store that can hold information for a very long time.

Question: Discuss any five ways that will ensure permanent retention of what you teach your students?

Answer:

1.   Teacher can also use different rehearsal strategies to strengthen leaners memory of learnt materials.
2.   Teacher should arrange learning and teaching activities from simple and gradually to the most complex.
3.   Teacher encourages learners to see reasons and benefits of learning or engaging in any learning experiences or activities.
4.   Teachers should always active participation of learning in meaningful activities in and outside the classroom.

5.   Teachers should always consider the development needs of learners before and when selecting learning activities and experiences.

UNIT 2:   TRANSFER OF LEARNING

Unit Structure

2.1   Introduction
2.2   Intended Learning Outcomes
2.3   Transfer of Learning
2.4   Theories of Transfer of Learning
2.5   Classroom Implications of Transfer of Learning
2.6   Summary
2.7   References/Further Readings/Web Resources

2.1   Introduction

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.

2.2   Intended Learning Outcomes

By the end of this unit, you will be able to:
•   explain transfer of learning
•   discuss the three theories of transfer of learning
•   enumerate classroom implications of transfer of learning.

2.3   Transfer of Learning

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. The above example gives us clues into the different types of transfer of learning that we have. These are explained below:

(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.

Question 1a: Define transfer of learning?
Question 2: Differentiate between positive, negative and zero transfer of learning?

2.4   Theories of Transfer of Learning

There are different theories that were postulated by psychologists to demonstrate how learning activities and experiences can be transfer from the classroom teachings to day life activities and experiences. The following are some the 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 subdivided 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.

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.

c.   Theory of Generalisation: 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.

Question 1: How does the following describe transfer of learning:
a.   Theory of mental faculties
b.   Theory of identical elements
c.   Theory of generalisation

2.5   Classroom Implications of Transfer of Learning

1.   The teacher should know that transfer of learning will not take place when both the old and new learning activity or experiences are unrelated. Hence, the teacher should endeavour to teach his/her subject-matter in a more meaningful and detailed way rather than by rote or through route learning.
2.   The teacher should provide the opportunity for his/her students to practice the 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.
3.   For a transfer of learning to take place, the teacher should always emphasize the relationship that exists between one subject-matter and another.
4.   The teacher should endeavour to develop positive attitudes towards a learning task so that the students can be motivated to like the task rather avoiding it.

5. 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.
6. Instill in the learner the desire to explore, to be creative thinking and involve self-discovery.
7. Encourage self-initiating activities as part of your strategies of teaching.

Self-Assessment Exercises 2

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
Question 1: Outline five (5) reasons why teachers should teach for transfer of learning rather than teaching learners to pass examinations?
Question 2: List five (5) ways of enhancing transfer of learning?

2.6   Summary

In this unit, learners have learnt about:
•   Meaning of transfer of learning
•   Theories of transfer of learning
•   Classroom implications of transfer of learning

The relevance of transfer of learning has been stressed in this unit. It will help the teachers on the action programmes that can facilitate learning transfer.

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1.8   Possible Answers to Self-Assessment Exercises

Question 1: Outline five (5) reasons why teachers should teach for transfer of learning rather than teaching learners to pass examinations?

Answer:

1.   Teaching for transfer of learning will allow learner to see relationships between the old and new learning activity or experiences thereby ensuring permanent retention.
2.   Teaching for transfer of learning will provide the opportunity for learners to practice the subject-matter being discussed along with the teacher. This is because when learners are allowed to take active part in teaching learning activities, they will be able to repeat the task at another time.
3.   Teaching for transfer of learning will make learners to develop positive attitudes towards a learning task thereby motivated to like the task rather than avoiding the task or learning activity.
4.   Teaching for transfer of learning will make learners see, touch, feel or manipulate which usually lead to better recall and retention of learnt experiences or activity.
5.   Teaching for transfer of learning will instill in the learner the desire to explore, to be creative thinkers and involve learners in self-discovery.

Question 2: List five (5) ways of enhancing transfer of learning?

Answer:

1.   The teacher should know that transfer of learning will not take place when both the old and new learning activity or experiences are unrelated. Hence, the teacher should endeavour to teach

his/her subject-matter in a more meaningful and detailed way rather than by rote or through route learning.

2.   The teacher should provide the opportunity for his/her students to practice the 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.

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

4.   The teacher should endeavour to develop positive attitudes towards a learning task so that the students can be motivated to like the task rather avoiding it.

5.   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.

UNIT 3:   MOTIVATION   IN   LEARNING   AND   ITS
             IMPLICATIONS TO CLASSROOM SITUATIONS

Unit Structure

3.1   Introduction

The knowledge of how to stimulate the students to participate meaningfully in classroom will go a long way in assisting the teachers. This unit therefore provides the learners the opportunity to understand different theories of motivation and how to apply these theories to their day-to-day classroom teaching/learning activities.

3.2   Intended Learning Outcomes

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

•   define motivation
•   explain the two types of motivation
•   discuss Maslow and Murray' s theories of motivation
•   identify classroom implications of Maslow' s theory of motivation.

3.3   Motivation

Motivation can be 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 factor 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.

Question: Briefly discuss the concept of motivation in classroom?

3.4   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 behaviour. 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 behaviour does not require any prior learning. Sighting the bone changes the behaviour of the dog and propels it to act.

2.   **Extrinsic Motivation**: Is the external or environmental factor which sets the individual' s behaviour into motion. It is the

incentive/reinforcer that drives an individual's behaviour 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.

3.5   Theories of Motivation

Several theories on motivation have been developed by different psychologists. Notable among them are:
- Abraham Maslow
- Henry Murray and
- Sigmund Freud.

In this unit, attempt will be made to discuss that of Maslow and Murray.
* Support with Maslow's model of Hierarchy of Needs

3.5.1 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:

1.   Physiological Needs
2.   Security and Safety Needs
3.   Love and Belongingness Needs
4.   Achievement Needs
5.   Self-Esteem Needs
6.   Aesthetic Needs
7.   Self-Actualization Needs

Below are the explanations of Maslow Hierarchy of needs theory of motivation:

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. Onyehalu (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 behaviour 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 fulfill this condition makes him/her feel superior and self-confident. Inability to fulfill 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-Actualisation 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 extraordinary achievement. At this point person is said to have reached the peak of his potentials.

Question: Analyze how Maslow hierarchy of needs can be used to motivate your learners?

3.5.2 Henry Murray' s Theory of Motivation

Murray like Maslow also propounded the theory of motivation. He divided his theory into two, viscerogenic and psychogenic needs.

1. **Viscerogenic Needs:** These are referred to as biological or physiological needs. They are the primary needs and these include the desire for water, sex, sleep, food, air and excretion of waste products. They are the higher order needs.

2. **Psychogenic Needs:** These needs correspond with other needs in Maslow' s theory. They are secondary needs. Examples of these are the longing for safety and security, love and comradeship, self-esteem, beautiful things or serene environment, rare or dominant positions etc.

3.6   Classroom Implications of Theory of Motivation

1.   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.

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

3.   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.

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

5.   From the beginning of the lesson, the teacher should endeavour 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.

6.   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.

7.   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 showcase their hidden talents.

8.   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-Assessment Exercises 3

Attempt the following exercises to measure what you have learnt in this unit. This should not take you more than 5 minutes:
Question 1: Explain the difference between internal and external motivation?
Question 2: Write short notes on the following: 1. Physiological Needs. 2. Viscerogenic Needs. 3. Aesthetic Needs and 4. Achievement Needs?

3.7   Summary

In this unit, the learners have learnt about:
•   Definition of motivation
•   Types of motivation
•   Theories of motivation
•   Classroom implications of motivation

The unit has also prepared the teachers for the various strategies they can employ to keep the attention of the students in the teaching-learning

activities. It will be of great benefit if they can adopt these strategies in their classrooms.

3.8 References/Further Readings/Web Sources

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3.9   Possible Answers to Self-Assessment Exercises

Question 1: Explain the difference between internal and external motivation?

Answer:
1.   Internal motivation is also called intrinsic motivation is an internal force or motive within the individual which propels him/her into emitting certain behaviour. 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 behaviour does not require any prior learning. Sighting the bone changes the behaviour of the dog and propels it to act.
2.   External motivation which is also called extrinsic motivation is the external or environmental factor which sets the individual' s behaviour into motion. It is the incentive/reinforcer that drives an individual' s behaviour 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.
3.   **Question** 2: Write short notes on the following: 1. Physiological Needs. 2. Viscerogenic Needs. 3. Aesthetic Needs and 4. Achievement Needs?

Answer:

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.   Viscerogenic Needs**:** These are referred to as biological or physiological needs. They are the primary needs and these include the desire for water, sex, sleep, food, air and excretion of waste products. They are the higher order needs.

3.   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.

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