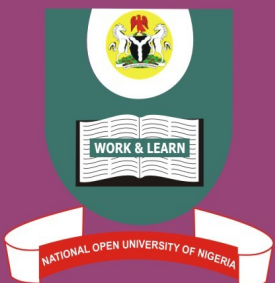


# EDU 311: PSYCHOLOGY OF LEARNING



**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**COURSE  
GUIDE****EDU 311  
PSYCHOLOGY OF LEARNING**

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## **Introduction**

EDU 311: Psychology of Learning is a semester, two credit unit foundation course. It is a core course for all students in Teacher Education programmes. It is also suitable as a course of study for anyone who wants to acquire some knowledge of Psychology of Learning.

## **The Course**

This course will introduce you to what Psychologists refer to as Learning, Human Learning and why psychologists use lower organisms

for psychological experiments. Do not worry if you do not have extensive knowledge of psychology. One of the aims of EDU 311: Psychology of Learning is to give you a general background to psychology of learning and to illustrate key areas in which it can be applied in a practical way during the teaching-learning process in particular and in learning situations in general. The course consists of 14 study units, which include definitions of learning, what is meant by Human Learning, the use of lower organisms for psychological experiments, theories of learning and their corresponding implications for human learning, schedules of reinforcement and basic ratios of reinforcement, some factors affecting learning, how interest in human learning can be sustained and important factors in human learning that teachers must know. The course material has been developed to suit not only distance learners in Nigeria by virtue of the fact that it has practical examples from the local environment but to also suit distance learners elsewhere given examples and illustrations of universal dimension. The intention is to make use of local experiences and situations including international illustrations to support the students while studying and to ensure that the content remains current.

This Course Guide is a window into the course. It tells you briefly what the course is about, what course materials you will be using and how you can work your way through the materials. It suggests some general guidelines for the amount of time you should spend on each study unit of the course in order to complete it successfully. It also gives you some guidance on your tutor marked assignments (TMAs). Detailed information on TMAs is similarly made available. There are regular tutorial classes that are linked to the course. You are advised to attend these sessions at your study centre.

## **What you will learn in this Course**

The overall aim of EDU 311: Psychology of Learning is to introduce specific definitions of the concepts of learning, human learning, major theories of learning, and why psychologists prefer to use lower organisms for psychological experiments. During this course, you will learn about schedules of reinforcement, some factors affecting learning, sustaining interest in learning, and important factors in human learning that teachers must know, as well as psychology and the classroom teacher.

Although there is little disagreement among psychologists as to the importance of learning and pervasiveness of learning in nearly all forms of human activity, there is a marked difference between the ways they look at learning and the ways the layman does. You will learn specific definitions of the concept of learning. You will also learn what psychologists refer to as human learning, theories of human learning generated from psychological experiments on lower organisms.

You will understand what is meant by schedules of reinforcement, basic ratios of reinforcement, motivation, and theories of motivation. You will be given sufficient grounding to understand how interest in human learning can be sustained and important factors that you must know about human learning, which should provide you with the necessary basis for further study.

## **Course Aims**

This course aims to give you an understanding of the concept of learning, what is meant by human learning, the use of lower organisms for psychological experiments, theories of learning and their implications for human learning. Schedule of reinforcement and their implications for behaviour management, some factors affecting learning, and how interest in learning can be sustained.

These aims will be achieved by:

- a. Introducing you to the definitions of the concept of learning;
- b. Explaining to you what psychologists mean by human learning;
- c. Describing how psychologists develop theories of learning;
- d. Explaining to you the rationale for using lower organisms for psychological experiments;
- e. Outlining basic ratios of reinforcement;
- f. Explaining some factors affecting learning;
- g. Describing how interest in learning can be sustained;
- h. Outlining important factors which teachers must know.

## Course Objectives

To achieve the aims set out above, some carefully stated overall objectives must be considered. In addition, each study unit also has specific objectives. The study unit objectives are always included at the beginning of a study unit; you should read them before you start working through the study unit.

You may want to refer to the objectives during your study of each unit to check on your progress. You should always look at the study unit objectives after completing a study unit. In this way, you can be sure that you have done what was required of you by the study unit.

Set out below are the wider objectives of the course as a whole by meeting these objectives, you should have achieved the aims of the course.

On successful completion of the course, you should be able to:

- a. Define the concept of learning;
- b. Explain what is meant by human learning;
- c. Discuss why psychologists prefer the use of lower organisms for psychological experiments;
- d. Explain Thorndike's theory of learning;
- e. Describe Skinner's Operant conditioning theory of learning;
- f. Discuss Pavlov's Classical conditioning theory of learning;
- g. Explain Gestalt theory of learning;
- h. Discuss the implications of theories of learning for human learning;
- i. Specify basic ratio of reinforcement;
- j. Explain factors affecting learning;
- k. Discuss how teachers can sustain interest in learning.

## Working through This 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. At the end of the course is a 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.

## Course Materials

Major components of the course are:

- 1) Course Guide
- 2) Study Units
- 3) References
- 4) Presentation Schedule

## **Study Units**

The study units in this course are as follows:

### **Module 1**

- |        |  |
|--------|--|
| Unit 1 | Learning conceptual clarification                        |
| Unit 2 | The use of lower organisms for psychological experiments |
| Unit 3 | Theories of learning                                     |
| Unit 4 | Skinner's Operant conditioning                           |
| Unit 5 | Applications of Operant conditioning                     |

### **Module 2**

- |        |                                       |
|--------|---------------------------------------|
| Unit 1 | Pavlov's Classical conditioning       |
| Unit 2 | Gestalt theory of learning            |
| Unit 3 | Some factors affecting learning       |
| Unit 4 | Additional theories of learning       |
| Unit 5 | Motives, needs and their satisfaction |

### **Module 3**

- |        |   |
|--------|---|
| Unit 1 | Critique of Maslow's hierarchy of needs |
| Unit 2 | Observational learning                  |
| Unit 3 | Human behaviour                         |

## **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 tutorials. 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 in the assessment of the course. First is a set of Self – Assessment Exercises (SAEs), second is a set of tutor-marked assignments (TMAs), and 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 deadlines stated in the presentation schedule and the assignment file. The work you submit to your tutor for assessment will make up 30% (undergraduate) and 40% (post graduate) of your total course mark.

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 70% (undergraduate) and 60% (postgraduate) of your total course mark.

### **Tutor-Marked Assignments (TMAs)**

There are TMAs 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, and 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.

When you have completed each assignment, send it together with a TMA (tutor-marked assignment) form 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 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 will be 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 Structure

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

<b>Assessments</b>	30% (Undergraduate) 40% (Postgraduate)
<b>Final Examination</b>	70% (Undergraduate) 60% (Postgraduate)
<b>Total</b>	100% of Course Marks

**Table I: Course Marking Structure**

## Course Overview

The next table brings together the study units, the number of weeks you should take to complete them, and the assignments that follow them.

Unit	title of work	Weekly Activity	Assessment (end of Unit)
	Course Guide	1	
1.	Learning: Conceptual Clarification	1	Assignment 1
2.	The use of lower organisms for psychological experiments	1	Assignment 2
3.	Theories of Learning	1	Assignment 3
4.	Thorndike's Connectionism	1	
5.	Skinner's Operant Conditioning	1	Assignment 4
6.	Pavlov's Classical Conditioning	1	
7.	Gestalt Theory of Learning	1	Assignment 5
8.	Some Factors Affecting Learning	1	
9.	Additional Theories of Learning	1	
10.	Motives, Needs and Their Satisfaction	1	
11.	Critique of Maslow's Hierarchy of Needs	1	Assignment 6
12.	Observational Learning	1	
13.	Human Behaviour	1	Assignment 7
	<b>Total</b>	<b>14</b>	

**Table II: Course Organiser**

## How to Get the Most from This Course

In Open and Distance Learning (ODL), the study units replace the University Lecturer. 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 lecturer. 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 exercise, 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 Exercises (SAEs) are interspersed throughout the study units. Working through these SAEs will help you to achieve the objectives 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 run into any trouble, telephone your tutor immediately. Remember that your tutor's job is to help you. When you need help, don't hesitate 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 the 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 try 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 returned, 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).

## **Tutors and Tutorials**

There are 14 hours of tutorials provided in support of this course. You will be notified of the dates, times and location of these tutorials together with the name and phone number of your 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 or 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 board if you need help. The following might be circumstances in which you would find help necessary. Contact your tutor if:

You do not understand any part of the study units or the assigned readings.

You have difficulty with the self – assessment exercises.

You 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 of your study. To gain the maximum benefit from course tutorials, prepare a question list before attending them. You will learn a lot from participating in discussions actively.

## **Summary**

Upon completing this course, you will be required with basic knowledge of Psychology of Learning, its theories and implications for human learning. You will be able to answer questions like these ones.

1. What is learning?
2. How would you define human learning?
3. How many theories of learning can you identify?
4. Why do psychologists use lower organisms to conduct experiments?
5. What are schedules of reinforcement?
6. How can we distinguish Skinner's theory of learning from Pavlov's?
7. What is motivation?
8. What are the factors affecting learning?
9. What is Gestalt?
10. How can we apply the law of exercise in human learning?
11. What is law of effect?
12. How can we explain the weakness (es) of the Gestalt theory of learning?
13. How can we describe observational learning?

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## **MODULE 1**

Unit 1	Learning conceptual clarification
Unit 2	The use of lower organisms for psychological experiments
Unit 3	Theories of learning
Unit 4	Skinner's Operant conditioning
Unit 5	Applications of Operant conditioning

### **UNIT 1      LEARNING: CONCEPTUAL CLARIFICATION**

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- 2.0    Objectives
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  - 3.2    Concept of Learning
  - 3.3    Definitions of Learning
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor – Marked Assignment
- 7.0    References/Further Reading

#### **1.0    INTRODUCTION**

By now, you have read through the course guide, which was sent to you as part of your instructional package for the course. If you have not, please ensure that you read the course guide before reading your study materials as it provides a comprehensive outline of the materials you will cover on a study unit to study unit basis, starting with the topic you are about to study: learning: conceptual clarification. The study unit guides you through several descriptions and definitions of learning across the ages. Let us look at what you should learn in this study unit, as specified in the study unit objectives below:

#### **2.0    OBJECTIVES**

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

1.    Describe the concept of learning;
2.    Define the concept of learning in a specific way.

### **3.0 MAIN CONTENT**

#### **3.1 Description of Learning**

To the layman, 'learning' has always been a rather simple matter, he sees it frequently and assumes that he has a clear understanding of its meaning, that is, getting to know something he does not know. As Oxiedien (1968:5) puts it, that 'we learn what we are taught is often the attitude of the non-professional person'.

Although there is little disagreement among psychologists as to the importance of learning and pervasiveness of learning in nearly all forms of human activity, there is marked difference between the ways they look at learning and the ways the layman does.

Here we will look at some other descriptions of the concept of learning. You will probably have come across the word 'learning' before, and you may have your own idea of what learning is all about. There are a number of misconceptions and misunderstandings as to what learning is exactly, and for this reason we will consider why this is so and then examine some additional descriptions of this subject area.

#### **SELF ASSESSMENT EXERCISE 1**

How would you describe learning? Make brief notes before moving on to the next section?

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Now let us go on with our descriptions of the concept of learning.

Learning is a part of almost every aspect of psychology, from developmental psychology (how we acquire behaviours through the life cycle) to social psychology (how we learn to interact with others) to abnormal psychology (how we develop such behaviours as phobias and depression).

Learning has evolved over the course of genetic history as a set of adaptive mechanisms that allows us to acquire new behaviours and modify old ones. In order to understand this most complex of human behaviours, we need to have a clear understanding of what psychologists

refer to as learning. In addition, we need to know more about the basic processes fundamental to all learning.

You are learning, as you read this study unit 1, listen to your instructional facilitator and or guidance counsellor at the Study Centre of your choice, and study for a test or examination. Learning is also involved in many other aspects of life. You learn to ride a bicycle, recognize a song, drive a car, smile when someone smiles at you, repairs a stereo, and play football. In fact, learning influences behaviour to such a great extent that it is one of the most important concepts psychologists study.

## **SELF ASSESSMENT EXERCISE 2**

State one unique reason why psychologists study learning:

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Let us now continue with our discussion.

### **3.2 Concept of Learning**

Kohler (1925) in his book, 'The Mentality of Apes' (cited in Alhassan, 2000), explained learning as a perceptual process with the major emphasis being on the study of relationships and how people learn to see relationships among various items of experience. Learning of relationships can be clearly seen in the phenomenon of insight. Sometimes, pupils work for a long time on a problem or skill with little apparent progress. All of a sudden, there will be a flash of understanding (eureka) in which the pupil or student sees through the problem or re-forms his responses into a more complex habit. This phenomenon was first widely published by the famous German psychologist, Wolfgang Kohler, who found that apes, when confronted with a different problem, might act as if they were surveying the situation and would then go directly to the goal object (banana) by putting two sticks together, or by piling, one box on top of another. You will learn more about this exciting problem solving situation in study unit 2 of Module II where we shall discuss the Gestalt theory of learning.

Aristotle talked of learning as an association of ideas following the laws of similarity, contrast, and continuity. He believed that people learn and remember those things that are alike, that are striking because of their difference, and that occur together, in space and time (Murphy, 1998).

Bugelski (1986:117) on his part, sees learning as the process of the formation of relatively permanent neural circuits through the simultaneous activity of the elements of the circuit-to-be; such activity is of the nature of change in cell structures through growth in such a manner as to facilitate the arousal of the entire circuit when a component element is aroused or activated.

Lindgren (1991) posits that learning is a central process in understanding human behaviour. Most aspects of human behaviour are learned contrary to the widely held view at the turn of the century that human behaviour is instinctive in nature. According to Lindgren, only perhaps such behaviours as sucking of breasts and blinking of the eyes are instinctive. Lindgren explains instinctual behaviour as inherited patterns of complex responses which become less important as life progresses up the evolutionary scale.

Learning may also be thought of as a process of problem-solving, a way of thinking, creating and synthesizing.

I am sure our discussion is clear and understandable. Now, try your hand on this question.

### **SELF-ASSESSMENT EXERCISE 3**

List any two (2) human behaviour that are inattentive in nature:

1. -----
2. -----

I am sure you are eager to know how psychologists defined learning and human learning. We must therefore continue our discussion.

### **3.3 DEFINITIONS OF LEARNING**

Alhassan (1985:17) opines that learning is the totality of the acquisition of factual information, the mastering of skills and means to aid further study (understanding); the entire socialization process, the acquisition of behaviour patterns, the styles of tackling problems of everyday life and more. Learning is a dynamic process whereby, through interactive experience, insights or cognitive structures of life spaces are changed and so become more useful for future guidance.

Gagne (1970:3) attempts a definition of learning which seems to have a wide appeal when he writes that learning even takes place when the situation affects the learner in such a way that his/her performance

changes from a time before being in that situation to a time after being in it. The change in performance is what leads to the conclusion that learning has occurred. Thus, learning is a change in human disposition or capability which can be retained, and which is not ascribable to the process of growth. It is important for you to note that all changes in performance that brought about by the environment may properly be referred to as learning. This view of learning is identical to the definition that says that learning is a modification in behaviour due to experience.

Notwithstanding the above discourse, learning may not be easy to define adequately. This may be so because we cannot see it directly. But when we observe a child's behaviour, we can conclude that some kind of learning has occurred. Let us give an example. When a pre-schooler is able to recite the alphabet from A – Z or the numerals, which he could not do before, we can deduce that some learning has taken place. Liebert (1997:114) stresses this point by stating that all animals, including human beings, are able to profit from experience. Placed in new situations for the first time, we are often clumsy and incompetent. However, after some practice or the opportunity to watch others perform, our own efforts usually improve dramatically. For many activities at least, we too, can successfully accomplish things that had previously been difficult and frustrating the process that is responsible for this change is called learning.

I can see you are finding this discussion interesting. Let us continue.

Let us cite another example. When you look at the stages of a child's development, you can see that he first knows how to eat, then to sit, to crawl about, to be able to stand, to walk, to run about, and to speak. The child is now capable of doing some things which he could not do earlier in his life. It may be said that in these respects, the child has learned because 'observed changes in behaviour are evidence of learning' (Balogun, 2001:43). Many psychologists agree that learning is a general term for relatively lasting or permanent change in performance or behaviour caused or produced directly by experience.

Dinkmeyer (1985) defines learning as a change in behaviour resulting from the interaction of the organism with its environment. Learning is dependent upon activity or special training and in this sense, differs from behavioural change which is solely due to maturation. Learning then involves relatively permanent behavioural change which is as a result of experience.

O'Connor (1993) submits that a study of learning is part of the larger study of psychology, which may be defined as the scientific study of

human experience and human and animal behaviour. Olaitan (1992) defines learning as a collection of experiences which a person progressively acquires to be regarded as educated in his/her society. What does this imply?

Let us go on with our discussion. This implies that the value of learning is determined primarily by the society. People learn what the social learning environment permits them to learn by way of subjects offered, quality of teachers / instructional facilitators, quality of the curriculum, quality of the learning environment, and so on. It is important to note that what the learning society is capable of offering does not suit its definition of an educated man, a vacuum is created which has to be bridged by making learning more meaningful and relevant to the societal perception of an educated man.

At this stage of our discussion, we should be able to consider some relevant questions. What do we mean by learning? How many types of learning are there? How can we motivate students to learn? What is human learning?

**You are eager for answers to the questions, now let us go on.**

Human beings learn. This statement looks and sounds simple, yet it has generated as much controversy as any statement could in the behavioural, natural, or physical science. Travers (1996) posits that man is a philosopher before he is a psychologist or an educator, and as he sees human nature, so he sees the nature of learning. Consequently, learning is viewed as a cognitive, problem-solving process whereby man actively seeks and uses environmental clues that enable him to form concepts, solve problems, and think creatively.

Human learning depends upon at least three pre-conditions:

1. A functioning biological organism;
2. An on-going social/cultural/religious/political/economic environment, and
3. An opportunity for a biological being to interact with any form or forms of the environment in (2) and thereby learn from it.

Human learning is the ultimate goal of our educational system. Man turns to several disciplines to discover what aids or hinders learning, and to grope toward a more adequate knowledge of the process itself. From biology, the student of learning takes information about growth and development, he utilizes facts about man's activities in groups and what impact environmental forces have on learning. From anthropology, he derives insight into the meaning of cultural differences. What the



specific culture values in its learning, and how the individual, reflecting his culture, has learned to learn.

Culture is the totality of the way of life of a people. It includes everything from how people welcome a newborn baby to how the dead are buried. All disciplines can contribute to our knowledge about learning. Learning may involve many variables. Klausmier (1992) similarly states that learning may be grouped into no less than five categories:

- a. The characteristics of the learner, such as developmental aspects;
- b. Characteristics of the teacher/instructional facilitator;
- c. Classroom/study centre interaction;
- d. Characteristics of the learners as a group, and
- e. The physical setting.

This tends to indicate that the nature of learning may not be all that easy to comprehend. Klausmier again attests to this when he writes that we do not as yet have any universally accepted description of the learning process applicable to all kinds of learning, in all human beings, at all age levels, and in all situations. It is important for you to note that the development of learning and intelligence and their great educability are what distinguish humans from all other living creatures which is,.

An important distinction between learning in lower animals and learning in humans is that, even when simple association learning is involved, one rarely sees the building up of isolated connections between single sets of stimuli and responses. Such connections do occur, but in human learning we tend to notice their appearance only as they form chains of associations. The types of association learning common to humans, and the relative rapidity of the learning process, tends to obscure the observation of the learning of the links themselves.

In human learning, two particular abilities seem representative: the first of these is a consequence of a highly developed sensory ability and manual which enables us to learn the use of tools. This is variously referred to as sensor motor learning, motor learning or skill learning. It includes all related abilities from manipulating a pencil, learning to operate a complex machine, to playing a musical instrument with perhaps virtuoso ability.

A second class of human learning results from an equally happy coincidence of physical and mental endowment the ability to learn to use **verbal** materials. As learning theory developed in the United States of America through the efforts of Thorndike, Hull and others, so also developed was the view that all learning, human and animal learning, maze learning and language learning, could potentially be understood

merely by the principles embodied in classical conditioning. This is one of the theories of learning discussed in several study units of this course material. For all such theories, psychologists carried out experiments mainly with the use of lower organisms such as rats, pigeons, chimpanzees, dogs, and such similar creatures. **We shall now ask a relevant question:** Why do psychologists prefer using animals to perform experiments?

#### **SELF-ASSESSMENT EXERCISE 4**

Think and state any two (2) reasons:

1. -----
2. -----

(We shall explore the answer to this important question in study unit 2).

#### **4.0 CONCLUSION**

In this study unit, you have learnt some descriptions of learning. Psychologists differ in how they look at learning. We clarify misconceptions as to what learning is. Learning is a part of almost every aspect of psychology. In addition, the concept of learning was examined. You have also learnt some definitions of learning. Learning is the totality of the acquisition of factual information, the mastering of skills to aid further study, the acquisition of behaviour patterns and styles of tackling problems of everyday life. Observed changes in behaviour are evidence of learning.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns descriptions and definitions of learning from the perspectives of different psychologists.
- ii. The study unit has been used served to introduce you to other study units in the course material.
- iii. The study units that follow shall build upon this introduction to ensure clarity of concepts and understanding of the contents.

#### **6.0 TUTOR-MARKED ASSIGNMENT (TMA)**

1. What do you understand by the concept of learning?
2. Explain what you understand by human learning.
3. List 3 preconditions on which human learning is based.

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## **UNIT 2 THE USE OF LOWER ORGANISMS FOR PSYCHOLOGICAL EXPERIMENTS**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 The importance of studying animals for psychological experiments
  - 3.2 Advantages of animal studies
  - 3.3 Weaknesses of animal studies
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 1, we discussed descriptions and definitions of learning. The study unit also introduced you to other study units in this course material. You can now describe and define learning from your own understanding. You are about to start another interesting study unit. Which is on the use of lower organisms for psychological experiments? This study unit guides you through the importance of studying animals. Let us look at other areas you need to know in this study unit as specified in the unit objectives below.

### **2.0 OBJECTIVES**

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

- 1. Explain the importance of studying animals for psychological experiments.
- 2. List the advantages of studying animals for psychological experiments.
- 3. Describe some of the weaknesses of studying animal for psychological experiments.

### 3.0 MAIN CONTENT

#### 3.1 The Importance of Studying Animals for Psychological Experiments

It is accepted that when attempting to understand the behaviour of a child we frequently look at his past experience for possible explanations. We can move toward understanding human complexity more easily by studying animals, which in many respects, are simpler organisms. It is important for you to note that arguments over the difference between lower animals and humans have been going on for centuries. Aristotle claimed we can identify the differences between lower animals and humans because we humans can laugh and wiggle our ears (Thomas, 1983). But, as we learn more, we find that lower animals and humans have a great deal in common, not only physically, but also to some extent, psychologically. You should remember now and always that although its units differ in size and location, the human brain is quite similar in structure to that of the rat, cat, or dog. Hence animals become important to study (McMahon & McMahon, 1986).

Our discussion is getting clearer and more understandable. I commend your active participation. Now, try your hand on this question.

#### SELF-ASSESSED EXERCISE 1

1. (a) Complete this state:  
Lower animals and humans have much in common  
..... and .....
- (b) List three (3) differences between lower animals and humans:
  - i) .....
  - ii) .....
  - iii) .....

Well done! Let us continue our discussion.

It is important for you to note that the tradition of looking to the behaviour of other animals to gain understanding of the behaviour and experience of human beings stems from the evolutionary biology, which followed the publication in 1859 of Charles Darwin 'Origin of Species'. Charles Darwin was responsible for much of psychology's interest in animal experiments. Though he was not the first to suggest the idea but

he was the first great organiser of information about the long history of changing species that conceivably led to the emergence of man.

You must note that the principal effect of his studies was to make humans more open to scientific investigation by suggesting they were of animal origin. Both humans and apes have a common ancestor, as branches of a tree have a common trunk. The importance of Charles Darwin to psychology was that his theory suggested the human is but a more elaborate version of basic animal life. Anatomical continuity between various species suggested also continuity in behaviour and in psychological process such as learning. By observing learning in various species, knowledge has been gained of some basic processes fundamental to learning whenever it occurs. Though the same, or very similar, processes may be found operating in relation to the learning of cats, pigeons, rats, monkeys, apes and men, it is always necessary to look at the total learning situation and observe important differences, as well as resemblances, between learning in varied species. With this provision ever in mind, the student of human learning should be able to appreciate the relevance of comparative animal studies in psychology. Therefore, we human beings can be studied by observing the operations of less complex lower animals.

Now, think about this question: What are the possible advantages of animal studies? Let us continue with our discussion.

### **3.2 Advantages of Animal Studies**

According to McMahon & McMahon (1986:11 – 12), the following are some of the advantages of animal studies:

1. If we are animals, even complex ones, it may well be that the study of less complicated and more easily understood forms would reveal the mechanisms underlying human behaviour.
2. Using animals allows surgical experimental techniques. To understand some operations of the human brain, for example, a researcher would have to remove certain portions to see the effect on behaviour. As the authors see it, two methods are available:
  - i) Wait until someone is unfortunate enough to have a brain injury, or
  - ii) Study the effects of cutting out parts of the human brain.

The second procedure (ii) above is obviously unacceptable, and the first procedure (i) above is too accidental and random. To have a clearer understanding, let us cite an example:

A psychologist wishing to examine the influence of early social isolation on later behaviour could not possibly seek to separate infants from all human contact in order to study this topic. In cases such as this, it is often possible to turn to systematic observation and the correlation approach. Even in cases where experimentation with humans is possible, independent variables can often be controlled more effectively or varied over a wider range when animal objects are employed.

Let us cite another example: A psychologist who is interested in studying the effects of heat upon behaviour might conduct such research with laboratory animals or human volunteers. Because of the harmful effects resulting from prolonged exposure to heat, however, he would probably be able to continue his study for a longer period of time and to expose subjects to somewhat higher temperature if he chooses to work with animals rather than humans.

In psychology, drug treatments for depression, anxiety disorder, schizophrenia, and other serious psychological disorders would not now be possible were it not for extensive animal research. Animals are used in about 8 percent of all experiments conducted by psychologists (American Psychological Association, 1984).

Time is ripe for you to check the progress you have made in understanding our discussion.

## SELF-ASSESSMENT EXERCISE 2

A group of Nigerian scientists are anxious to test the efficacy of a new drug for curing HIV/AIDS. As a student of human learning, briefly explain what **subjects** you will recommend to conduct the test and **why**?

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Well done, let us continue with our discussion.

The education of groups of children cannot be hampered or delayed for purposes of experimental control over either environment or antecedent learning history. Unusual motivational conditions involving either deprivation or over-stimulation are undesirable neurophysiological or biochemical studies involving or threatening physical injury is

unthinkable. Besides these cultural limitations, the human child has certain characteristics that render him a relatively limited subject for the experimental analysis of the maturation of learning capability.

At birth, his neuromuscular systems are underdeveloped that he is incapable of effecting the precise head, arm, hand, leg and foot movements essential for objective measurement. From your knowledge of developmental psychology, you know that by the time the normal child has matured physically, he is engaging each day in such a fantastic wealth of multiple learning activities that precise, independent control over any single learning process presents a task beyond objective realism. Even if it were proper to cage human children willfully, which it assuredly may not be easy, this very act would in all probability render the children abnormal and untestable and again leave us with an inseparable problems.

It is also important for you to note that animals reproduce more rapidly and abundantly than humans. Many animal generations will be born and can be studied within one human generation. A scientist can look at the effects of a drug on the behaviour of a rat and on the behaviour of its offspring, and still be around to report the results. At this stage, you should think out the answer to a relevant and timely question: Why do psychologists prefer to use chimpanzees? Now let us continue our discussion.

Animals below the primate order are intellectually limited compared with chimpanzees (monkeys), so that they learn the same problems more slowly and are incapable of solving many problems that are relatively easily mastered by chimpanzees. Horses, rats and even cats and dogs, can solve only a limited repertoire of learning tasks, and they learn so slowly on all but the simplest of these that they pass from infancy to maturity before their intellectual measurement can be completed.

According to Fuller, et. al. (150), it has been demonstrated that mature and aged rats are no more proficient on a multiple T maze than young rats, while conditioned responses cannot be established in dogs before 18 – 21 days of age. It is important for you to note that the chimpanzee is capable of solving simple learning problems during the first few days of life and its capability of solving ever increasingly complex problems matures progressively, probably from four to five years.

The monkey possesses learning capacities far in excess of those of any other infrahuman primate, abilities probably comparable to those of low-level human imbeciles. Susan Karen revealed that rhesus monkeys have been discovered to be able to learn how to count from numbers 1 to 10 (CNN's Science and Technology Week Programme of 25 October,



1998). Groups of incurably ill people argue that the animal rights groups do not take their plight into account. Without continued animal research, they argue, their illnesses will never be treatable (Feeney, 1987).

Animals will certainly continue to be used in research. However, the animal rights movement has made a major contribution by focusing national and international attention on how animals are used and how they are housed and treated (Ott, R. 1995). You can now attempt the following questions:

### **SELF-ASSESSMENT EXERCISE 3**

1. (a) List 3 animals commonly found in your community:

- i) -----
- ii) -----
- iii) -----

(b) List 3 weaknesses that animal studies may generate

- i) -----  
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- ii) -----  
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- iii) -----  
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Well done! Let us continue our discussion.

### **3.3 Disadvantages in using animals to conduct psychological experiments**

Among the major disadvantages in using animals for psychological experiments as identified by McMahon & McMahon (1986:13) are:

1. One of the very first problems experiments encountered is the issue of morality. One cannot take advantage of lower creatures without serious justification. There is always a sense of guilt that, somehow, it cannot be right that we should be using animals in this way. Over the last decade, animal rights activists have campaigned vigorously for the elimination of using animals for experiments. They accuse researchers of subjecting animals to serious, unnecessary harm and severe pain and point to poor housing and feeding conditions in some laboratories (Ulrich, 1991). They estimate that 20 million rats, mice and other animals die each year in experiments and that additional millions are subjected to pain and discomfort (Cunningham, 1985). This campaign was re-echoed by Andrew Dickman of the World Society for the Protection of Animals (WAPA) on the British Sky News programmes of 25<sup>th</sup> October, 1998 (cited in Alhassan, 2000).
2. Humans are very complex. Thus, analysing a lower animal to understand us is somewhat like analysing the electronic components, but beyond that there are vast differences.
3. People are equipped with hindsight and foresight, which means that we can bring to the present much information and interpretation from the past. Human beings can forecast some complex probabilities. Clearly then, humans are more complex than animals which seem to base their behaviour on limited previous experience.
4. A big danger with using animals is the experiment's tendency to anthropomorphise (from the Latin for 'give human qualities to'). How often, for example, do we say of our dog, things like, 'I bet terror is sad that we didn't bring him leftovers at the birthday party today?'

### **4.0 CONCLUSION**

In this study unit, you have learnt the rationale for using lower organisms for psychological experiments. You have therefore learnt the advantages of animal studies. We can now say that the weaknesses of animal studies are very clearly understood by you.

You will have seen that psychologists consider both the advantages and weaknesses of animal studies and concluded that conducting experiments in psychology with lower organisms is of great and enduring importance.

## **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns the importance of studying animals for psychological experiments.
- ii. You also learnt the advantages of studying animals for psychological experiments.
- iii. The study unit has served to indicate what you will learn in other study units later in the course.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Briefly explain the importance of studying animals for psychological experiments.
2. List 3 advantages of studying animals for psychological experiments.

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## **UNIT 3 THEORIES OF LEARNING**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Learning theories
  - 3.2 Thorndike's theory of connectionism
  - 3.3 Laws governing learning
  - 3.4 Critical assessment of Thorndike's theory of learning
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 2, we discussed the rationale for the use of lower organism for psychological experiments. The study unit also served to introduce you to other study units in this course. You can now explain the advantages of animal studies in psychological experiments. You can also describe the disadvantages of using animals for psychological experiments. You are about to study another interesting study unit: Theories of learning. This study unit guides you through Thorndike's theory of learning. Let us look at what other content you should learn in this study unit as specified in the objectives below.

### **2.0 OBJECTIVES**

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

1. Explain the theory of learning from the standpoint of Thorndike.
2. List the laws governing learning.
3. Describe the implications of the laws for human learning.
4. Itemise advantages and weaknesses of Thorndike's theory of learning.

### **3.0 MAIN CONTENT**

#### **3.1 Learning Theories**

Blair, et. al (1981) write that learning theories differ in method and conclusion essentially because the theories focused attention on certain aspects of the total learning processes. Differences in the results are uninspiring if it is remembered that psychologists have used animals of

nearly every species, from one-celled organisms to man, in conducting experiments. From such experiments are generated no less than six theories of learning.

In addition, theoretical approaches to the study of behaviour are by-products of such experiments. The engineer has theories of light, electricity, and matter, the medical doctor has theories of genetics, just as the teacher/educator/instructional facilitator is in command of learning theories. The next section of this study unit examines one of the most fascinating theories of learning. Let us continue our discussion.

### **3.2 Thorndike's Theory of Connectionism**

It is important for you to note that Thorndike (1874:1949) provided the first systematic approach to understanding behaviour from the standpoint of a behaviourist. He was also the first American Psychologist to introduce the concept of reward (reinforcement) for learning to occur (Alhassan, 2000). Blair et. al. (1981) reveals that Thorndike worked as an educational psychologist, a pioneer who maintained an active interest in learning theory, school learning, intelligence testing and educational measurement.

Thorndike is the starting point for both educational psychology and America's brand of objective psychology that is behaviourism. His stimulus – response (S-R) theory was generated from a series of experiments with a hungry cat put inside a puzzle box with food (fish) visible on the outside. The cat had to pull a string to come out of the puzzle box. Towards this, the cat made several random movements of jumping, dashing across the floor of the box and running in a deliberate attempt to get out of the box.

The cat at last succeeded in pulling the string. The door of the puzzle box opened, the cat came out and ate the food. The time, which it took, was recorded and it was put into the box again and again until such a time that it achieved mastery on how to operate the lever to have its escape. Thus, over a series of successive trials, the cat became increasingly efficient in getting out of the box, the number of errors thus reduced on subsequent trials.

It is important for you to note that Thorndike's cat showed slow, gradual and continuous improvement in performance over successive trials. Thorndike then concluded that animals learn through active behaviour, accidents and through chance to succeed. Further, he concluded that the learning process in the cat can be explained in terms of formation of

direct connection between the stimulus and the response. Note also that two important factors aided the learning process.

- i) The cat was hungry, meaning that there should be some motivation in the cat for learning to occur, and
- ii) The food which is also necessary to satisfy the hunger of the cat must be present.

### **SELF-ASSESSMENT EXERCISE 1**

- 1) (a) State briefly in your own words what Thorndike's lower organism showed.

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- (b) What was Thorndike's conclusion given the situation in (a) above?

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Well done! Let us continue our discussion.

### **3.3 Laws Governing Learning**

The basic laws and their classroom application are very interesting aspects of the psychology of learning. Such laws are:

#### **(a) The Law of Readiness**

This law states that when a modifiable connection is ready to act, to do so is satisfying and, when it is not ready to do so, it is unsatisfying. Readiness is dependent upon both maturation and

experience of the learner. Mukherjee (1978) writes that the law of readiness implied “preparatory adjustment of the organism confronted with the problem”. What does this suggest? This suggests that if Thorndike’s cat were well fed before it was introduced into the puzzle box; the required response of pulling the lever would not have been obtained. Children will not learn if they are not prepared or do not have interest in learning a particular subject. Now, try this relevant question. What classroom application may we derive from this theory? Let us continue our discussion.

Chauhan (1978:141) suggest that the teacher must wait till the learner is ready to learn. The teacher should give those experiences that may help to enhance readiness. Preparatory experiences that will hasten the growth of readiness can be provided in primary classes. Aptitude tests in various subjects may be given to determine the readiness of learners. With the school system, the teacher needs to take into consideration the developmental stage of the learner, his/her interest, personality, and mental readiness in order to know the type of stimulus to present to the learner, which will lead to a positive response with success as its reward.

#### **(b) Law of Exercise**

This law is divided into two parts: the **Law of Use** and the **Law of Disuse**. The law of use states that other things being equal, the more frequently a modifiable connection between stimulus and response (S – R) is made, the stronger that connection will be. The law of disuse states that, other things being equal, when a modifiable connection between stimulus and response (S – R) is not made over a period of time, the strength of that connection is weakened. Thus, practice is required, especially in learning skills (simple and complex); repetition also strengthens the connection between the stimulus and the response.

Now, we should consider the relevance of the law within the teaching-learning process. The classroom teacher should endeavour to give opportunities (on a sustained basis) to the learners not only to use but also to repeat the knowledge they required in the class. We know that drill plays an important role in elementary classes, particularly in the learning of multiplication tables, alphabets, and meanings of words. The position of Thorndike is that many drills, should be given in elementary classes to strengthen the bondage between S and R.



## SELF ASSESSMENT EXERCISE 2

1. List any 5 learning skills in which practice is required.

3.1 -----

3.2 -----

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3.3 -----

3.4 -----

Clap for yourself for your active participation in our discussion. Now, let us continue.

### (c) Law of Effect

Commenting on the law of effect, Mukherjee (1978) writes that only those responses of the organism, followed by reward and satisfaction, would be learned, and those unsuccessful responses followed by punishment and annoyance would be eliminated from the behaviour repertoire of the organism. This suggests that to every stimulus, there was response, and when the response to a stimulus is followed by some positive effect, such as reward and satisfaction, that particular stimulus – response bond (S – R) would be ‘stamped in’, while others followed by some negative effect such as punishment and annoyance, would be “stamped-out”. The effect of reward and punishment are not only opposite in nature, but are equally strengthened. It is important for you to note that this was Thorndike’s initial view, but in his later writings, he emphasised most on positive effect and overlooked the punishment thereby concluding that learning is more effective under reward conditions than under conditions of punishment. In the next section of this study unit, we shall study how the laws governing learning affect learning by human beings.

### 3.4 Implications for Human Learning

Thorndike’s theory of learning has obvious implications for human learning. Oladele (1989) posits that the human organism reacts more readily when a given action is satisfying rather than annoying to it. The repetition of satisfying actions, which attend learning, strengthens learning. Learning depends essentially on making connections. Clearly then, for learning to be effective, practice must occur periodically.

It is important for you to note that preparatory experiences that will hasten the growth of readiness must be provided in elementary classes. When a pupil is prematurely exposed to a learning task before he is ready for it, he will not only fail to learn the task in question, but even learns from the experience of failure to fear, dislike, and avoid it.

Maturation seems to have a different and much more restricted meaning from readiness. It is not the same as readiness rather, maturation is merely one of the two principal factors; the other being learning that contribute to or determine the organism's readiness to cope with new experience.

Thus, whether or not readiness exists does not necessarily depend on maturation alone but in many instances is mainly a function of prior learning experience and most typically depends on varying proportions of maturation and learning. It must be remembered that to equate the principles of readiness and maturation implies muddying the conceptual waters as well as difficulty for the school to appreciate that insufficient readiness may reflect inadequate prior learning on the part of pupils because of inappropriate or inefficient instructional methods. Hence, lack of maturation can become a convenient scapegoat whenever children manifest insufficient readiness to learn.

The readiness of each learner is the degree to which he has the prerequisites for new learning. Note that readiness is never for a subject or topic itself but for specific requirements, which vary with the way we teach. Both maturation and prior learning are factors in readiness; but the relative importance of each undoubtedly varies for different methods of teaching because of the specific activities of students under each. The point to note is that although there are some maturational minimums below which instruction would be too inefficient, prior learning is probably the more important factor in readiness for most school tasks.

It is now time to think about this question:

### **SELF ASSESSMENT EXERCISE 3**

From your understanding of our discussion, do you think there is/are weaknesses in Thorndike's theory of learning? Let us continue our discussion.

### **3.5 Critical Assessment of Thorndike's Theory of Learning**

Mukherjee (1978:43) highlights the following criticisms against Thorndike's theory:

- (i) Learning is a continuous process and not a discrete process as visualised by Thorndike.
- (ii) Problem-solving learning does not depend on chance or haphazard trial and error as Thorndike's cat demonstrated.
- (iii) Transfer of learning cannot simply be explained from a theory of identity of elements and intelligence is not simply an accumulation of stamped-in stimulus response bonds.
- (iv) We know that practice is essential, yet it cannot be held to be a factor aiding problem – solving performance. You should note that too much practice may lead to functional fixedness and subsequently one's inability to solve problems.

Notwithstanding the criticisms listed above, no discussion of any theory of learning without familiarity with Thorndike's theory of connectionism may be considered altogether valid.

#### **4.0 CONCLUSION**

In this study unit, you have learnt explanations of Thorndike's theory. The laws governing learning were described. In addition, you learnt the implications of the laws for human learning. You have similarly learnt some criticism that may be generated in any consideration of Thorndike's connectionism.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns learning theories and Thorndike's connectionism.
- ii. In addition, you learnt the laws governing learning and their implications for human learning.
- iii. The study unit has served to introduce you to other study units in the course.
- iv. The study units that follow shall build upon your understanding of this study unit to ensure clarity, understanding and comprehension.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

- 1. Explain in your own words the law of readiness and the law of effect.

#### **7.0 REFERENCES/FURTHER READING**

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## **UNIT 4 SKINNER'S OPERANT CONDITIONING**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Skinner's Operant Conditioning
  - 3.2 Responses as operant
  - 3.3 Schedules of Reinforcement
  - 3.4 Implications for Behaviour Management
  - 3.5 Critical Assessment of Skinner's Theory
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor – Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 3, we discussed theories of learning with particular reference to Thorndike's. The study unit also served to introduce you to other study units in this course. You can now explain the laws governing learning. You can also describe the implications of Thorndike's theory for human learning. You are now in a position to assess the theory. You are about to study a very interesting study unit: Skinner's Operant Conditioning. This study unit guides you through Skinner's theory of learning. Let us look at what other content you should learn in this study unit as specified in the study unit objectives below.

### **2.0 OBJECTIVES**

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

1. Explain Skinner's theory of operant conditioning;
2. Differentiate between stimulus discrimination and stimulus generalisation;
3. Explain the concept of reinforcement;
4. Describe the schedules of reinforcement.

### 3.0 MAIN CONTENT

#### 3.1 Skinner's Operant Conditioning

Edward Skinner was one of the most important modern advocates of conditioning. Others were Ivan Pavlov, Kimble and Hull. Using a specially designed 'Skinner's box', Skinner conducted his experiments with rat. The box consisted of a lever or bar which can be pressed to set a mechanism in motion which would deliver food pellets through a food tube. It is to be noted that when the rat was introduced into the box, chance pressing of the bar would deliver several pellets, it was observed that the rat went on pressing the bar to obtain food which served as its reward.

It is important for you to note that a pronounced series of non-reward (non-reinforcement) resulted in a gradual lowering of response rate in the rat, which Skinner termed extinction. Skinner's second experiment consisted of a pigeon pecking at a disc in a 'Skinner box' and receiving food as its reward (reinforcement) with the 'green light' on. Following several trials, the pigeon learned to peck whenever the green light was on. Skinner introduced the red light during which there was no food reward despite the pecking behaviour manifested by the pigeon. Skinner reported that the pigeon soon learned to peck whenever the green light was on. This behaviour was termed **stimulus discrimination**.

Skinner introduced 'a new' dimension to the experiment: lighter shades of 'light' and brighter shades of 'red light'. It was observed that the pecking behaviour persisted in the face of the reward following shades of lighter green light. In addition, the pecking behaviour was discontinued in the face of non-reward following shades of brighter red light. This behaviour is described as **stimulus generalisation**.

#### SELF – ASSESSMENT EXERCISE 1

1. (a) List attributes of the behaviour of stimulus discrimination.

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(b) What is stimulus generalisation?

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That's a nice effort. Let us continue.

### 3.2 Response as Operant

According to Edward Skinner, most responses are **operant**, that is, goal-directed, purposive and willful. Behaviour, which is controlled by changes in the environment, is called **operant behaviour**. Most of what we do each day is operant. Walking, thinking, talking are all operant. Most of what we teach in school is operant. The process in which behaviour is strengthened, in the sense of becoming more likely to occur, through reinforcement is called operant conditioning.

In operant behaviour, the organism does something to the environment and is rewarded. It is important for you to note that it is the response that is reinforced. The organism is instrumental in securing his own reward. More often than not, one operant leads to another, and for this, Skinner views learning as a **continuum**. This explains why we go on learning all through life. For Skinner (as indeed for Thorndike), reinforcers increase or decrease the probability of a response by their presence or absence.

Skinner distinguished between two types of reinforcement: **Primary reinforcers** are those things that are directly related to our physiological needs like food, thirst, love. **Secondary reinforcers** are those things that are important because of their association with primary reinforcers.

Thus, the same response emitted for ‘primary reinforcers’ is generalised to them. Let us cite an example: the green light in Skinner’s experiment was important to the pigeon essentially because of its association with food, which was a primary reinforcer. Note that a host of secondary reinforcers keep us going, for example, approval, praise, a smile, or encouragement to a student from his teacher.

Let us continue with our discussion.

### 3.3 Schedule of Reinforcement

Central to discussions of learning and motivation is the concept of reinforcement. Skinner distinguished four schedules of reinforcement. Remember that reinforcers are stimuli whose presentation, contingent upon the occurrence of a response, changes the probability of occurrence of that response. The study of the control of behaviour by intermittent reinforcement has not been neglected in the analysis of behaviour. On the contrary, it has been one of the most prominent areas of investigation in the last 30 years. It has been concerned, first describing how the patterning of reinforcement in time (different types of intermittency\_ affects the patterning of behaviour in time.

In addition, it has been concerned with discovering the mechanism by which intermittent reinforcement of various types produces these different patterns of behaviour. Note that this area of research is generally referred to as the study of **schedule of reinforcement**. What is a reinforcement schedule? A reinforcement schedule is simply a rule which specifies how often and under what conditions a particular response will be reinforced. All schedules of reinforcement have one thing in common; reinforcement depends upon the occurrence of a response.

With schedules in which each response is reinforced, called continuous reinforcement (CRF) schedules, a single response is all that is required for reinforcement. With other schedules, reinforcement may depend upon something in addition to a particular response, either the passage of a certain amount of time (interval schedules) or the occurrence of a certain number of previous responses (ratio schedules). You should note that each of these types of schedules can be subdivided. The intervals required for reinforcement may be fixed (each interval is the same) or variable. Similarly, ratios may be fixed (each reinforcement depends upon the same number of responses) or variable.

The four types of schedules identified above: fixed interval, variable interval, fixed ratio, and variable ratio are the basic types of reinforcement schedules. Importantly, the study of schedules of



reinforcement amounts to the study of the effects of different types of intermittency on behaviour. Now try to reflect on this question: How well do the basic schedules of reinforcement characterises intermittent reinforcement in the real world? Let us continue our discussion.

It is not too difficult to find examples of human behaviour which are maintained by one or another of the basic reinforcement schedules. Fixed ratios used to be quite common for factory workers to be paid on a piece of work basis: transmissions installed or every hundred packets of sugar packaged produced a certain pay off. These fixed-ratio schedules generated very high rates of responding, with brief pauses after each ratio. This kind of salary arrangement was very desirable to management for a variety of reasons. It maintained high outputs. In addition, it made wages a direct part of unit costs. When business was good, and much was produced, employees earned high wages. When business was bad, employees were given less work, completed fewer ratios, and earned less money. To ensure you have a clear understanding and comprehension of our discussion, we shall explain the following generalised examples of basic ratios:

**Fixed Ratio:** The teacher calls on Wazobia every third time she raises her hand. Wazobia's hand raising is then on an FR 3 schedule.

**Variable Ratio:** Wazobia is called by the teacher after she raises her hand a number of times, sometimes after one or two responses, sometimes after three or four responses. Mukherjee (1978:51) writes that evidence from the animal laboratory shows that the effects of variable – ratio schedule of reinforcement were the most powerful as measured against extinction curve, which were obtained by plotting against time the number of bar – pressing operant behaviour of rats following initial conditioning of their operant behaviour.

**Fixed Interval:** Wazobia is called upon by the teacher only when she raises her hand five times after she was last called upon for raising her hand.

**Variable Interval:** Wazobia is called upon by the teacher only when some time she passed since she was last called upon for raising her hand. But the length of time elapsing between previous and subsequent times Wazobia is called varies.

It is important for you to note that in daily life, contingencies are often extremely complex. We are rarely on a 'pure' schedule as given above. Let us cite an example: In a classroom discussion, a teacher may call on students according to both how many times they raise their hands (ratio schedule) and how long it has been since they last contributed (interval

schedule). Or the teacher may shift back and forth from one schedule to another. In addition, calling on a particular student depends on how many hands are raised, who the teacher thinks will answer well, and many other factors. This can produce a very complex schedule for a student. But you must note that complex schedules are often good because they provide unpredictable reinforcement, and it is unpredictable reinforcement that best produces resistance to extinction once a response is established. Variable ratio and variable – interval schedules are, therefore, the best schedules to use to maintain behaviour and to make it persistent. Now it is time for you to try your hand on this quiz:

### **SELF – ASSESSMENT EXERCISE 2**

1. How will you explain briefly and in your own words what you understand by:
  - a) Schedules of Reinforcement?
    - i. ....
    - ii. ....
    - iii. ....
    - iv. ....
  - b) List 4 types of schedules
    - i. ....
    - ii. ....
    - iii. ....
    - iv. ....

Well done. Clap for yourself. Let us continue our discussion.

### **3.4 Implications for Behaviour Management**

We shall continue our discussion with a question: What further relevant implications may we require for classroom management? Let us continue our discussion.

In looking at the role of stimulus change in producing and maintaining behaviour, we can see the reasons for many problems in classroom control. Students are likely to get different consequences for talking

with friends or engaging in unassigned activities, as opposed to consequences for studying.

When there is an immediate reason for working **now**, as in a timed test which counts toward a grade, students for whom a grade is meaningful consequence work hard. When it really does not make much difference whether or not a student works now, or ten minutes from now, he or she is likely to do other things. And what about misbehaviour? What are the consequences for misbehaviour? If one student in a room starts to hum or to look out of the window, who gets the teacher's attention? You should note that whenever teachers criticize any student, they are providing a consequence for the misbehaviour they are criticizing. If teacher – attention is reinforcing enough (and it usually is), such teachers are strengthening the unwanted behaviour, thus producing a disciplinary problem.

The superstitious behaviour exhibited by Skinner's pigeon (to the green light and red light) can be used to explain the many superstitious behaviours human beings manifest. You should remember that Skinner trained food-deprived pigeon to eat grain from a feeder that dispensed it at a regular interval irrespective of what the pigeons were doing. The first pigeons were banging their head about or turning around in the cage. You should note that the more reinforcement the stereotyped response received, the greater the likelihood of its occurrence. Well done for your participation. Let us continue our discussion.

Through 'superstitious behaviour' some responses totally irrelevant to the reinforcing event are strengthened by being accidentally paired with the reinforcement. You should note that superstitious behaviour of various kinds are seen in our society. let us cite examples: 'Don't sweep at night', 'Don't show a little baby itself in a mirror', 'A baby should be given a piece of fish to hold while having his first hair cut or the hair won't grow', and so on. These superstitious behaviours could have originated in a similar way from history of reinforcement of such superstitious behaviours either negatively or positively in the past, which is handed down to succeeding generations.

You should remember that in the practical management of learning, Skinner and Thorndike recommended the analysis of new learning tasks into small steps to be mastered in a predetermined sequence, and large amounts of teacher guidance to prevent unnecessary errors. Let us consider some questions: From the standpoint of Skinner's theory of experimental findings, of what relevance are reward and punishment in school learning? If we can generalise from animal studies to students in a classroom, we should expect behaviour which is punished inside school to occur at a higher rate than it did initially once the threat of

punishment is removed. When the students are outside school where the teacher cannot police them, then they feel specially inclined to do what is punished in school: to swear, to smoke, to chew gum, to destroy or make up books, and so on. Punishment will not, then, decrease undesirable behaviour where it really counts: outside school. It may actually increase it.

You should remember that from cognate experience in the teaching – learning process, punishment can be described as having a number of drawbacks. It does not remove the reinforcement which is maintaining the behaviour, so that it results in two consequences producing conflict in behavioural tendencies. It has undesirable side effects, hostility, aggression, fear avoidance, and escape are common by-products. It wears out with use, and when the threat is lifted, the punished behaviour may not only return, it may return stronger than ever. Other students may imitate a teacher who is punishing. They may also try to control other students by scolding, rough handling, humiliation, and so on.

It is important for you to note that the position of most educational psychologists is that, if a teacher must punish, then that teacher should:

- 1) Provide alternatives – make sure the students know what to do as well as what not to do and that they can get at least as much reinforcement from the desirable behaviour as from the undesirable.
- 2) Punish immediately every time with minor punishment rather than later or occasionally with something severe.
- 3) Punish only behaviour you personally see. If you rely on someone else's report, you cannot punish immediately and you may punish unjustly.
- 4) Use only consequences you would like your students to use too. If you don't want students to yell at others, you should not yell at them (Alhassan, 2000).

Now it is time to think reflectively on our discussion by asking a relevant question.

### **SELF – ASSESSMENT EXERCISE 3**

From your understanding of our discussion, will you say Skinner's theory of learning has some weaknesses?

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Let us continue our discussion.

### **3.5 Critical Assessment of Skinner's Theory**

Skinner's theory is not without some limitations. He has been criticized for being silent on the issue of transfer of learning which is quite vital in the understanding of learning behaviour. Specifically, his theory only explains stimulus generalisation which is inadequate in explaining how learning in one situation aids cognition in another (situation), especially if stimuli involved do not fall within the 'generalisation zone' of the response.

In addition, Skinner has given us significant attention to the role of stimulus in the learning process since 'response' which is conditioned, to him, is emitted by no specific stimulus. But some stimuli have, to some extent, triggered off the response and this needs be acknowledged. No less important is the fact that Skinner has failed to explain problem-solving learning from his theory, and we do know that this is an important aspect of learning strategy.

### **4.0 CONCLUSION**

In this study unit, you have learnt Skinner's operant conditioning theory of learning, the responses of an operant and schedules of reinforcement. You should also have learned about relevant implications that we derived for classroom management in particular and in the practical management of learning in general.

You will have learnt that the variable-ratio and variable-interval schedules are the best schedules to use to maintain behaviour and to make it persistent. Finally, you will have learnt what most educational psychologists suggest a teacher should do if he/she must punish: provide alternatives, punish immediately, punish only behaviour you personally see, and use only consequences you would like your students to use too.

### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns Skinner's theory of operant conditioning.
- ii. You have also learnt the differences between stimulus generalisation and stimulus discrimination as well as the concept of reinforcement and a description of schedules of reinforcement.
- iii. The study unit has served to indicate what you will learn in other study units later in the course.
- iv. The study units that follow shall build upon the theory and these concepts.

## **6.0 TUTOR MARKED ASSIGNMENT**

1. Differentiate between stimulus generalisation and stimulus discrimination.
2. Identify and explain briefly the four (4) schedules of reinforcement.

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## **UNIT 5      APPLICATIONS OF OPERANT CONDITIONING**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Operant Conditioning in Everyday Life
  - 3.2    Learned Helplessness and Depression
  - 3.3    Modifying Human Behaviour
  - 3.4    Testing New Drugs
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor – Marked Assignment
- 7.0    References/Further Reading

### **1.0    INTRODUCTION**

In study unit 4, we discussed Skinner's operant conditioning theory of learning. You can now explain responses as operants. You can also describe schedules of reinforcement. You are now in a position to explain the implications of Skinner's theory for the management of classroom behaviour in particular and human behaviour generally. You are about to study an extensive dimension of the usefulness of Skinner's theory of learning. It is a very stimulating study unit you are about to begin. Let us look at what other content you should learn in this study unit as specified in the study unit objectives below.

### **2.0    OBJECTIVES**

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

1.    List aspects of human behaviour that operant conditioning affects.
2.    Explain how one form of abnormal behaviour can be acquired through operant processes.
3.    Describe how Skinnerian approaches can be applied to parenting and education.

### 3.0 MAIN CONTENT

#### 3.1 Operant Conditioning in Everyday Life

Operant conditioning affects many aspects of human behaviour. We smile, help others, and go to work every morning because we are reinforced for these behaviours. Welfare payments (as in the United Kingdom, for instance) may reinforce some able-bodied adults for not working, and politicians shake thousands of hands and kiss babies because they are reinforced by the advantages of elective office.

Operant conditioning can be responsible for the development of abnormal behaviours but can also be systematically used in very positive ways. Let us consider one theory of how psychology is used to modify a variety of behaviours, enhance the educational process, and develop new drugs. Now try to answer this quiz:

#### SELF – ASSESSMENT EXERCISE 1

List any four (4) behaviours for which **you** or anyone around was reinforced within the last one week:

- i) .....
- ii) .....
- iii) .....
- iv) .....

That's nice of you. Let us continue our discussion.

#### 3.2 Learned Helplessness and Depression

Martin Seligman (1985) has shown how one form of abnormal behaviour, depression, can be acquired through operant processes. He delivered electric shock to two dogs simultaneously. The Group A dog could turn off the shock by pressing a button and thus had some control over the situation. The Group B dog received the same shocks as the Group A dog but had no control, it was helpless. Both groups were then moved to a shuttle box.

Each dog was placed in one compartment, where a signal was followed by shock. Group A dogs soon learned to jump the barrier when the signal sounded in order to avoid the shock, but Group B dogs did not. This raises a relevant question: Why? It was so because the Group B dogs had previously learned that they had no control over the shock and



thus did not try to make the avoidance response (Mineka & Hendersen, 1985). Seligman called this phenomenon **learned helplessness**.

Other studies have demonstrated that lacking operant control over the environment can produce helplessness in humans as well (Kofta & Sedek, 1989). The secretary who is repeatedly overruled by her boss when she tries to be more efficient and by her family when she tries to improve home life may eventually come to feel helpless more generally. Such learned helplessness can be a major factor in depression.

## SELF – ASSESSMENT EXERCISE 2

Demonstrate you understand what we have discussed by listing any three (3) situations in which you lacked operant control over any/some situations/environments.

- i) .....
- ii) .....
- iii) .....

That's good effort on your part. Let us continue our discussion.

### 3.3 Modifying Human Behaviour

The intentional application of Skinnerian principles in an effort to alter human behaviour is called **behaviour modification**. Skinnerian approaches have been applied to parenting, education, therapy, and the development of new drugs.

Operant techniques can be helpful in correcting problem behaviour in children. Clinnard (1984) explains that problem behaviour is behaviour that digresses from what the majority approves of, or a variation of a normal behaviour. Gardner (1988) explains that in a child, any behaviour is generally viewed as what he does, how he relates to others, what he accomplishes, what he reports about his emotional experiences, how he approaches a learning task, how he performs in a competitive situation and how he uses covert cognitive behaviours to influence other behaviours. A problem behaviour is thus any consistent discrepancy between what is expected of a child in academic and social areas and what is done by him in these various areas.

Education at any level is expected to influence behaviour of those who experience it. This applies to primary school children and other school

children. Igborhor (1981) writes that in the Nigerian school system, problem behaviours have been manifested in various forms and to varying levels of seriousness. These range from relatively simple problems of lateness to school and disobedience to more serious ones as stealing, fighting, truancy, rioting and extreme damage to lives and property. Problem behaviours such as drug addiction, destructive tendency, aggressiveness, restlessness, cheating which are common among adolescents may affect their cognitive functioning.

In one study, frustrated parents whose children watched an average of 21 hours of TV per week agreed to a Skinnerian behavioural programme. The child received 20 tokens per week; each could be turned over to mummy or daddy in exchange for 30 minutes of TV viewing time. If the children watched no more than the 10 allotted hours, they received a gold token that could be exchanged for some special reinforcer, like a trip to an amusement park or a party for friends. The children cut their TV viewing time to 10 hours and kept it there over a period of 8 months after they stopped receiving the tokens (Wolfe et. al., 1984).

A second application of Skinnerian techniques has been **programmed instruction**. Developed by Skinner in 1954, it applies operant techniques to the teaching of various school subjects. One early device presented addition problems and allowed a child to type the answers on a keyboard. The machine reinforced correct responses by moving on to the next problem. Such reinforcement is immediate and accurate to a degree that can never be achieved by a teacher working with many children at once. It is important for you to note that current computer-based instructional systems are the modern products of Skinner's genius.

Skinnerian approaches have also been applied to the modification of abnormal behaviour. Hospitalized mental patients suffering from such serious disorders as schizophrenia typically have few of the social skills needed to obtain reinforcement in the world outside the institution. Behavioural programmes called token economies teach them social skills through operant techniques specific behaviours (for example, keeping a neat room and going to meals on time) are identified as appropriate reinforcers (for example, candy, movie attendance, and TV privileges) are determined. When patients perform the desired behaviours, they receive tokens, such as poker chips, that can later be exchanged for the reinforcers they want.

### 3.4 Testing New Drugs

Before a new drug becomes available, we need some way to be certain that it is safe and effective. Operant techniques can be used to teach an

animal a new behaviour. A drug is then administered to see how it affects the behaviour. The effects of new tranquilizers and of antipsychotic drugs – those that reduce the symptoms of psychotic patients – have been evaluated in this way (Burke et. al., 1994; Wiley et. al., 1994).

Similarly, the effects of withdrawal from narcotics have been assessed (Higgins & Sellers, 1994), as has the interaction between narcotics and the antidepressant drugs were used to treat clinical depression (Kovera, 1994).

Finally, Skinnerian techniques have been applied to show that cocaine decreases response rates and reduces the consistency of behaviour (Haaren, 1994).

#### **4.0 CONCLUSION**

In this study unit, you have learnt the application of operant conditioning theory of learning in everyday life. You should also have learned about learned helplessness and depression. In addition, you have learnt how human behaviour could be modified as well as the process of testing new drugs.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns operant conditioning in everyday life.
- ii. You have also learnt; learned helplessness and depression.
- iii. In addition, you have learnt how human behaviour could be modified.
- iv. Finally, you have learnt the process of testing new drugs.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

1.
  - (a) Explain the concept of behaviour modification.
  - (b) What do you understand by programmed instruction?
2. Briefly describe the application of operant conditioning in the testing of new drugs.

## 7.0 REFERENCES/FURTHER READING

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## MODULE 2

Unit 1	Pavlov's Classical conditioning
Unit 2	Gestalt theory of learning
Unit 3	Some factors affecting learning
Unit 4	Additional theories of learning
Unit 5	Motives, needs and their satisfaction

### UNIT 1 PAVLOV'S CLASSICAL CONDITIONING

1.0	Introduction
2.0	Objectives
3.0	Main Content
3.1	Pavlov's Experiment
3.2	Pavlov's Altered Experiment
3.3	Stimulus Generalisation and Stimulus Discrimination
3.4	Implication and Critique
3.5	Cognitive Elements in Classical Conditioning
3.6	The Distinction Between Classical Conditioning and Operant Conditioning
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Readings

#### 1.0 INTRODUCTION

In the study unit 4 of Module I, we discussed Skinner's operant conditioning theory of learning. You can now explain responses as operants. You can also describe schedules of reinforcement. You are now in a position to explain the implications of Skinner's theory for the management of classroom behaviour in particular and human behaviour generally. You are about to study a theory of learning that is refreshing and stimulating. Let us look at what other content you should learn in this study unit as specified in the study unit objectives below.

#### 2.0 OBJECTIVES

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

1. Explain Pavlov's classical conditioning theory of learning;
2. List the strength and weakness of Pavlov's theory of learning;
3. Differentiate between classical conditioning and operant conditioning theories of learning.

### 3.0 MAIN CONTENT

#### 3.1 Pavlov's Experiment

Ivan Pavlov (1849 – 1936), a famed Nobel prize-winning physiologist in 1904, noticed that digestive juices flowed when the experimental animals (dogs) sensed the presence of food. The dogs in his studies would begin to salivate before they ate, as when they merely caught sight of the pan which contained their food, or when they saw the person who usually brought it or even when they heard the sound of his footsteps. You should note that these are not natural stimuli. Food in the animal's mouth is a natural stimulus; it is expected to cause salivation. But not these other stimuli.

On the basis of such observations, Pavlov soon concluded that these stimuli had, through their repeated association with food, become conditioned signals for its presentation. This process is termed **classical conditioning**. Let us consider a relevant question: Why was the process described as classical? Think about this for two (2) minutes.

Let us continue our discussion.

The process was called classical because the studies conducted more than ninety years ago by Pavlov, the Russian Physiologist, are considered the first and therefore the 'classical' examples of countless conditioning experiments that have since been conducted in physiological laboratories, particularly in former Russia now commonwealth of Independent States. To accomplish classical conditioning, we simply arrange events in such a way that the learner can form an association between them. A university student who sees a physics course he failed may again experience the sick, tight feeling in his stomach that he got during examinations for the course. Our friend chacha acquired his fear of needles through classical conditioning. The doctor's office and the syringe became associated with the pain of injection and thereby came to elicit the anxiety originally caused by pain.

It is important for you to note that there has been a fair amount of classical conditioning research in American laboratories as well, but it has, for the most part, been concerned with phenomena such as the eye-lid reflex and psychogalvanic response (changes in electrical conductivity and potential of the skin). This has been of little or no practical application to classroom learning. Now it is time to find out how much of our discussion you understand.

## SELF ASSESSMENT EXERCISE 1

Explain in your own words why Pavlov's theory was described as classical.

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### 3.2 Pavlov's Altered Experiment

According to Gault (1973), the recognition of the importance of this basic process enabled Pavlov to alter the thrust of his research, turning from the study of digestion for which he had won his Nobel prize to the investigation of such conditioning.

There are different aspects of the conditioning process which may be specified by different terms as follows:

An **unconditioned stimulus** (UCS) is a stimulus which is adequate at the outset (beginning) of training to produce the expected response. The response to such a stimulus is termed an unconditioned response (UCR). It is important for you to note that in Pavlov's experiment, the sight or smell of food was an unconditioned stimulus for the unconditioned response of salivating. You should remember that the unconditioned stimulus (UCS) functions as a reinforcer in that it strengthens and maintains the association between the CS and the CR. You should also remember that in classical conditioning the US elicits the response to be learned and also serves as the reinforcing event. Now try to answer this quiz:



## SELF ASSESSMENT EXERCISE 2

What is a conditioned stimulus?

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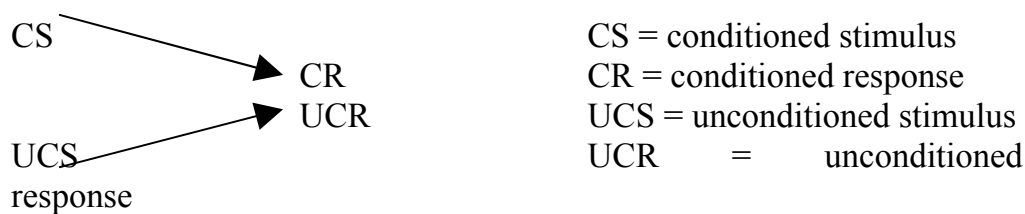
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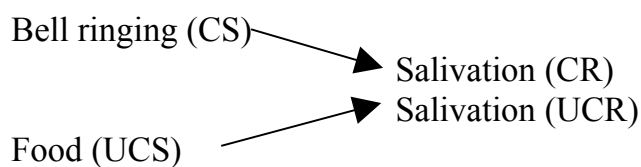
.....

Let us continue our discussion.

The experimental arrangement explained above is an example of **classical reward conditioning**, since the reinforcing event, food, is known to be rewarding to hungry dogs. This type of conditioning may be distinguished from a different perspective, which is called **classical aversive conditioning**. In this procedure, the CS is paired with an aversive (noxious, annoying) stimulus. The whole process may be represented by a generalised diagram which can be used to illustrate any particular example of classical conditioning as in Figure 1:



Example:



**Figure 1: Classical Conditioning Experiment**

Notice that the CR is an adaptive response; salivation prepares the dog to consume the food. It is interesting to note that Pavlov originally used the term ‘conditional’ in designating the key elements of his experiments, but it was incorrectly translated as ‘conditioned’ instead.

By now you may be wondering why we use different terms to designate the unconditioned response and the conditioned response, since they

may appear to be the same reaction. The answer is that the UCR and CR are very similar, but may actually not be identical. This is a good example of scientific precision: Pavlov realised that the two responses might not be identical, so he used different terms. With further observation, he learned that the UCR and CR were, indeed, different. There was less total saliva produced in the CR than in the UCR, and the levels of certain digestive enzymes were lower. Differences between the UCR and CR in other types of classical conditioning experiments have also been observed.

### **3.3 Stimulus Generalisation and Stimulus Discrimination**

A dog taught to salivate to the sound of a tone of a specific pitch will also salivate to tones of somewhat different pitches. The response is carried over to stimuli that are not quite the same as the original conditioning stimulus, a widely demonstrated phenomenon called stimulus generalization (Rubeling, 1993). Stimulus generalization means that a response originally conditioned to one specific stimulus also occurs when similar stimuli are presented. What is the importance of generalization? The importance of generalization is that it greatly broadens our ability to react to a wide range of related stimuli in the environment. It is to be noted that a host of other stimuli may be associated with the primary goal, for example, presence of mother, fetching food, and so on.

While stimulus generalisation can be helpful, overgeneralisation can be a problem. A dog conditioned to respond to a specific tone might begin to salivate to the ringing of any doorbell or telephone and a child might experience anxiety in every office he enters. Such problems are avoided by learning to discriminate among similar stimuli.

Stimulus discrimination means learning to respond to a specific stimulus and not respond to other stimuli that are similar to the original one. The similarities between two stimuli are the key to generalisation; the differences between stimuli are the key to discrimination.

### **3.4 Implication and Critique**

From the explanations you have studied in the preceding sections, we can deduce first -, second -, and third – order conditioning beyond which we cannot go. The social implication of this is that you may not work directly for the food but you can work to obtain money with which food can be bought.

It is important for you to remember that classical conditioning cannot account for all learning. To understand how a number of behaviours are

learned, we will have to examine the Gestalt theory of learning. This we shall do after a discussion of the next section of this study unit.

### 3.5 Cognitive Elements in Classical Conditioning

Pavlov and most early psychologists theorised that classical conditioning is an essentially mechanical process in which simple associations are automatically formed under certain conditions. More recent developments suggest that cognition is involved. The cognitive view holds that the stimuli in classical conditioning have **meaning** for the learner. To predict responses to these meaningful stimuli, we must know how the learner will interpret the stimuli and thus what is going on in his mind – what he is thinking about. Thoughts are cognitions, so this makes conditioning a cognitive process.

Kamin (1969) long ago demonstrated a phenomenon called **blocking** – interfering with the association between a CS and a UCS – by conducting a three-stage experiment with rats:

1. A CS (noise) precedes a UCS (shock) and conditioning occurs.
2. The same tone CS and also a light CS precede the UCS on a series of conditioning trials, after which the tone and light presented together, but with no shock, elicit the expected fear response.
3. The light is presented alone to see if it elicits the fear response.

Now try your thought on this quiz:

#### SELF – ASSESSMENT EXERCISE 3

What outcome would you expect when the light is presented alone?

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Let us continue our discussion.

The traditional prediction would be that the light would elicit fear, since it had, after all, been paired with shock. What Kamin found, however, was that the light alone produced either no fear response or a very weak one. Why? Because the association of the second CS with shock was **blocked** by the first association. The tone alone provides the rat with all the information it needs to predict the shock. The light is therefore a

redundant stimulus; it doesn't improve the rat's ability to predict the UCS.

It is important for you to note that this finding has great significance for our understanding of the classical conditioning process. It means that the rat does not just mechanically form associations. Rather, it uses stimulus (CS) information to form expectancies and predict the shock (UCS). In effect, these are cognitive processes that apparently occur during classical conditioning, even in the lowly rat.

Forming rules governing a likely sequence of events is also a cognitive process, and it is prominent in another classical conditioning model. **Rule generation** suggests that what the animal is doing during conditioning is forming a set of rules about the likely sequence of events. When two unexpected events, such as a light and shock, occur close together, the rat begins to generate the rule that shock follows light, and further pairings strengthen that rule (Holyoak et. al. 1989). Again, we see that conditioning may involve elements of cognition (such as applying rules) to a much greater extent than Pavlov imagined.

### **3.6 The Distinction between Classical Conditioning and Operant Conditioning**

In operant conditioning the availability of the reinforcing event is contingent on the response, whereas in classical conditioning it is not.

In operant conditioning the response is not elicited by a specifiable stimulus at the outset, whereas in classical conditioning the response is elicited by a specifiable stimulus (the unconditioned stimulus) at the outset (Chauhan, 1988).

It is important for you to note that both kinds of conditioning may occur simultaneously and even depend on one another. For example, in the classical conditioning of a salivary response the dog also learns to orient to the place where food will be, and this response is reinforced by eating the food.

## **4.0 CONCLUSION**

In this study unit, you have learnt Pavlov's theory of learning, i.e. classical conditioning and why the theory was termed classical. You should also have learned the strength and weakness of Pavlov's theory as well as the different aspects of the conditioning process which were specified by different terms such as unconditioned stimulus (UCS), unconditioned response (CS), and conditioned response (CR). You will

have also learnt the distinction between classical conditioning and operant conditioning.

## 5.0 SUMMARY

- i. What you have learnt in this study unit concerns Pavlov's classical conditioning theory of learning.
- ii. You have also learnt why the theory was termed classical.
- iii. In addition, you have learnt the distinction between classical conditioning and operant conditioning theories of learning.
- iv. The study unit has served to indicate what you will learn in other study units later in the course.
- v. The study units that follow shall build upon the theory and its social implications.

## 6.0 TUTOR – MARKED ASSIGNMENT

- 1) In your own words, list two differences between classical conditioning and operant theories of learning.

i) .....

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ii) .....

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## **UNIT 2      GESTALT THEORY OF LEARNING**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Kohler's Experiment
  - 3.2 Critical Assessment of Gestalt's Theory of Learning
  - 3.3 Implications for Practice
  - 3.4 Gestalt Therapy
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Readings

### **1.0 INTRODUCTION**

In study unit 1 of Module II, we discussed Pavlov's classical conditioning theory of learning. You can also explain Pavlov's altered experiment. You are now well positioned to identify the differences between classical conditioning and operant conditioning theories of learning. You should also be able to state the social implication of Pavlov's theory of learning as well as its weakness. You are about to study another stimulating theory of learning. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated hereunder.

### **2.0 OBJECTIVES**

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

- 5) Discuss the Gestalt theory of learning.
- 6) List main features of insightful learning.
- 7) Identify the weaknesses of Gestalt theory of learning.
- 8) Explain the implications of the theory for teaching – learning situations.

### **3.0 MAIN CONTENT**

#### **3.1 Kohler's Experiment**

You no doubt have insights. For example, you are faced with a complex new concept, perhaps in a mathematic course, and decide that you will never fully understand it. You put the course material away and come back to the problem hours later. After 10 minutes of renewed study, you

suddenly say ‘Aha!’ as the concept becomes clear. This is insightful learning.

Helen Keller (1957:28) provides a classic example of insightful learning: ‘Suddenly I felt a misty consciousness as of something forgotten....’

One of the most famous examples of human insight was that of chemist Frederick Kekule in 1865. Kekule had been trying to devise an overall theory of the structure of organic molecules. One afternoon, he was dozing before his fire and had a dream in which ‘atoms gambolled’ before his eyes, forming ‘long rows, sometimes more closely fitted together; all turning and twisting in snakelike motion’. As the dream continued, Kekule noted that ‘one of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightening, I awoke’ (quoted in Rothenberg, 1979:395 – 396). In the vision of the snake biting its own tail, Kekule saw that important organic compounds consist of closed rings of atoms. He had made a discovery fundamental to the understanding of organic chemistry.

The word ‘gestalt’ means a configuration, shape, or form. The Gestaltists – Wertheimer, Koffka, Kohler, Lamin, Combs and Snygg – reject learning as the formation of a bond between stimulus and response. They believe that learning occurs by insight: there is a sudden reorganisation of the person’s field and he understands. These psychologists argue that since all events in nature occur within some field, it is the totality of the field, its properties and structure, that explains all events happening within the field. It is important for you to note that of all the experiments conducted by the Gestaltists, Kohler’s seems most instructive and he is a basic reference in Gestaltists psychology. Let us therefore consider a relevant question: What was his theory about? You are anxious to know this. You would now. Let us continue our discussion.

Kohler’s approach considers man’s inner processes as a ‘whole’ instead of seeing them as tiny pieces like those of jigsaw puzzle. In addition, Kohler and his fellow Gestaltists assume that our perception of the whole world is of meaningful whole and that (this) is different from, and more than, an accumulation of sensations, images or ideas. The Gestaltists rejected the simple stimulus – response (S – R) connections as the explanation of behaviour. The concept of organisation between stimulus – response was introduced by the Gestaltists. It is important for you to note that this means we learn, not by associating bits of expressions but by forming new Gestaltists – by seeing new patterns and by organising them into a meaningful whole in the total situation (Alhassan, 2000).



**SELF – ASSESSMENT EXERCISE 1**

Given our discussion, explain briefly what you have learnt in this study unit.

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Well done. Let us continue our discussion.

Essentially, Kohler placed a hungry chimpanzee in a cage. Outside the bars of the cage and just beyond its reach was a banana. The chimpanzee (later called Sultan) made a few futile attempts to reach through the bars and get the banana. Then the chimpanzee noticed a stick lying on the floor of the cage. Picking up the stick, the animal smoothly and without further hesitation reached out and took in the banana. A relevant question arises: **How would you explain the problem – solving behaviour of Sultan?** Let us continue our discussion.

Kohler's explanation was not Sultan had engaged in **insightful learning**, which is characterised by sudden resolution or action after a period of study during which there is no action or apparent understanding.

How can insight learning be explained theoretically? A partial answer is that it appears to involve two stages. The first is a process of problem solving, a kind of mental trial and error, in which solutions are tried out and rejected without any actual behaviour being displayed. The second stage is storing the final solution in memory, where it is available for retrieval later.

Are cognitive processes the best explanation for conditioning and learning? Some psychologists clearly believe they are, but others are not convinced. They argue that the proposed cognitive processes cannot be directly observed and must be inferred. When cognitive psychologists do not fully understand how a conditioned association takes place, their critics argue, they propose constructs like expectancy, prediction, and cognitive maps to fill the gaps in understanding. The danger is that such constructs may be difficult to test empirically. This

theoretical battle represents a scientifically healthy difference of opinion and promises to continue for many years to come.

Mukhejee (1978) reveals that Kohler explained this problem – solving behaviour by saying that ‘insight’ came to the chimpanzee when the problem was solved. Kohler argues that all problem solving depends on insightful learning. Mukherjee (op. cit: 57) in analysing the chimpanzee’s problem – solving behaviour states that:

- a. There were several meaningful trials all of them being goal – oriented (directed);
- b. There were several turning away from the goal;
- c. There was a pause after sighting the stick lying in a different position from the chimpanzee and the banana; and
- d. Then there was solution of the problem with the stick which was used as an extension of arm.

The writer further states that such learning can be transferred to new situations whereas there are many regressions in trial and error learning.

## **SELF – ASSESSMENT EXERCISE 2**

Demonstrate you understand our discussion by listing any three (3) meaningful trials you made in the last 3 weeks towards the achievement of an objective or objectives.

- i) .....
- .....
- ii) .....
- .....
- iii) .....
- .....

That’s nice of you. Let us continue our discussion.

Kimble & Garnezy (1968) observes rather significantly that the chimpanzee had previously learnt to use implements (such as sticks) to draw to itself desirable objects. By implication, therefore, the insightful solutions to problems may be the result of long experience with the materials involved in any particular problem (situation). Sperling (1979) writes that the chimpanzee seems to have combined a memory image of drawing a banana into the cage with a synthetic image made up of a memory image of extending a rod out of the cage. Now consider this quiz: what are the features of insightful learning? Think about the

answer to that question for 60 seconds. Now, let us continue our discussion.

Oladele (1989) sees the following as the main features of insightful learning:

- i) Learning through insight depends upon the arrangement of the problem situation. Insight will come easily if the essentials for solution are arranged so that relationships can be perceived.
- ii) Complex situations can only be tackled through insight – a higher form of learning than trial and error.
- iii) Insight, like other learning, depends upon the capacity of the learner. Older children, for example, can learn things more easily than younger children.

### **3.2 Critical Assessment of Gestalt's Theory of Learning**

While it may be said that insightful theory of learning concerns itself with higher and problem – solving skills, it does not explain forms of learning, for example, concept of learning. In addition, it is silent about the notion of transfer of learning and about why insights come to some individuals more quickly than others. Psychological evidence shows that more intelligent persons seem to handle insightful learning more readily than less intelligent individuals.

### **3.3 Implications for Practice**

The Gestaltists emphasise the importance of perception of relations, organisation, and wholes in learning. The teacher should present his subject matter as a whole in teaching – learning situations. The theory accords importance to molar behaviour approach as experiences cannot be broken into S – R connections.

A major contribution of Gestalt psychology to the field of education is the interdisciplinary approach whereby a given educational problem or issue is examined from an interdisciplinary standpoint. Gestalt psychology has also thrown more light on the problem of social learning in the classroom by emphasising the importance of group behaviour.

It is important for you to remember that goals/purposes are described as having an important place in learning. As such, teachers must set individual goals which are attainable, and which could activate the learner. The school authorities – principals and teachers – should work as an organised whole towards improving the teaching – learning process.

Finally, classroom teachers should make concerted efforts to know their pupils from their own point of views and commence teaching from where the pupils' perceptions are rather than where their (teachers) own perceptions happen to be.

### **3.4 Gestalt Therapy**

Gestalt therapy was developed by Frederick Perls (1967, 1969), who was trained in both psychoanalysis and Gestalt psychology. The latter emphasises that we act not on the basis of external reality but rather in accord with our **perceptions** of that reality. We actively organise the stimuli that make up the world into meaningful patterns or wholes (gestalts) that are based on our expectations and needs. These gestalts and perceptions more generally, are typically inaccurate even in normal people because we see the world as society teaches us to see it (Recker, 1993).

When perceptions become abnormally inaccurate, they can lead to psychopathology. Accordingly, the emphasis in Gestalt therapy is on creating a whole person by increasing perceptual accuracy and unifying mind and body. The importance of immediate, individual experience is stressed, and the therapist works hard to keep the client focused on current experience (Polster & Polster, 1993).

### **4.0 CONCLUSION**

In this study unit, you have learnt the Gestalt theory of learning as presented by Kohler in his experiment with Sultan, the Chimpanzee. You should also have learned the strength and weakness of Kohler's insightful theory of learning; and implications of the theory to the teaching – learning process in particular and situations in general.

### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns Kohler's insightful theory of learning.
- ii. You have also learnt the strength and weakness of the insightful theory of learning.
- iii. In addition, you have learnt the implications of the insightful theory of learning for educational practice.

### **6.0 TUTOR MARKED ASSIGNMENT**

Briefly explain three (3) main features of insightful theory of learning.

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## **UNIT 3      SOME FACTORS AFFECTING LEARNING**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Variables Influencing Learning
  - 3.2 Motivation
  - 3.3 Theories of Motivation
  - 3.4 The Theory of Instincts
  - 3.5 Homestasis Theory of Physiological Needs
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 2, we discussed Gestalt theory of learning. You can also list the main features of insightful learning. You are now enabled to identify the weakness of Gestalt theory of learning. You should also be able to explain the implications of the theory for the teaching – learning situations. You are about to study a very interesting and relevant aspect of the psychology of learning. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated below.

### **2.0 OBJECTIVES**

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

- 1. Identify the factors influencing learning;
- 2. Explain the term Motivation;
- 3. List and describe theories of Motivation.

### **3.0 MAIN CONTENT**

#### **3.1 Variables Influencing Learning**

Learning as a process is influenced not only by the teacher, the techniques used, the classroom setting, and the formal or informal material to be taught, interest in the subject matter, readiness to learn, retentiveness, values and attitudes, relationship with the teacher, feelings about self, relationships with peers, and background experiences.

Also of importance are the environmental pressures of learning, the time allotted for learning, family support for learning, and the atmosphere of

the school and classroom. It is important for you to note that children's learning experiences differ as a result of such variables as sex and social economic background. Clearly then, it is superficial to explain learning differences between children by one primary factor, such as 'intelligence'.

Symonds (1955) states that the most potent reward for classroom learning is the teacher's acceptance of what the pupil does and the way he does it. In actuality, much classroom learning seems to be explicable in operant conditioning terms. Classroom teachers reinforce the kind of behaviour they prefer to see in students by comments of approval, marks, smiles, and such similar gestures. But you should remember that teachers cannot respond to every pupil on every appropriate occasion, and students learn to be their own reinforcers basically through discovery, for example, that their answers to problems are correct.

In addition, you should note that given a normal classroom situation, a student is not reinforced for every response he/she makes. Rewards appear only occasionally, yet we know from experience that students put forth a great deal of work. Remember that this is consistent with Skinner's concept of intermittent reinforcement earlier explained. Now let us ask a relevant question: How may we motivate pupils to learn? What is motivation? The next section of this study unit shall give you the opportunity to answer such and other questions. Let us continue our discussion.

### **3.2 Motivation**

Travers (1986: 204) posits that it is doubtful if any topic is more important to teachers than that of motivation. Most classroom problems such as those of discipline, learning, and failure could be resolved if teachers knew more about the issue of motivation and acted upon their knowledge. What then is motivation; this vital factor in human learning and behaviour? Motivation is the energising and maintenance of goal-directed human behaviour (Alhassan, 1983). Motives are the needs and desires the goal-directed behaviour attempts to satisfy. Why do you eat when you feel hungry? Why do you seek sexual satisfaction? Why are you reading this study unit? The brief answer to all these questions is motivation.

There are certain instances when one is more predisposed to act in a certain way rather than in another way. Often times, this is attributed to what is called motivation. Generally, motivation is referred to as the phenomena involved in the operation of drives, incentives and motives. Atkinson (1964) defines motivation as the arousal of tendency to act to produce one or more effects. Maslow (1943) has advanced the theory of

hierarchy of needs and as he puts it, motivation is constant, never-ending, fluctuating, and complex and that it is an almost universal characteristic of particularly every organismic state of affairs.

Since people behave in different ways even in the same situation, there is no satisfactory explanation as to why people behave the way they do. Many behaviours are motivated, that is, they are goal-directed, for example, seeking food, wealth, prestige, academic achievements, and so on. Now try your hand on this quiz:

### **SELF – ASSESSMENT EXERCISE 1**

1. List any six (6) goal-directed behaviours you manifested in the last seven (7) days.

- i. ....
- ii. ....
- iii. ....
- iv. ....
- v. ....
- vi. ....

That's nice of you. Let us continue our discussion.

The behaviours identified above are products of thoughtful actions and careful planning. Hence, the organism does not move in a haphazard way. His behaviour is directed towards a specific goal which he sets for himself. Furthermore, there are other types which are neither impulsive nor goal-directed, but they are perfected by our habits. It is generally recognised that since there are different types of behaviour, there should be different ways of explaining them. Motivation involves all types of behaviour and it is therefore difficult to find one theory that would give sufficient explanation to all types. Just as we have theories of learning, there are theories of motivation. From your level of participation in our discussion, it is obvious you are finding the study unit stimulating. Let us continue our discussion.

### **3.3 Theories of Motivation**

Theorists addressing motivational issues have faced three broad questions:

- 1) What are the major motive systems and how do they motivate behaviour?



- 2) How do these systems relate to each other?
- 3) What are the underlying psychological, environmental, and physiological causes of motivated behaviour and how do they interact?

Attempts to answer the above questions have resulted in a number of theories such as:

- a) The theory of instinct;
- b) Homeostasis theory of physiological needs;
- c) Drive theory;
- d) Theory of intrinsic motivation;
- e) Theory of Achievement motivation;
- f) Theory of motivated behaviour; and
- g) Hierarchy of needs theory.

In this study unit, we shall discuss (a) and (b) above while others shall be discussed in the study units that follow:

## SELF – ASSESSMENT EXERCISE 2

Having understood the meaning of motivation, which of the above listed theories would you list as capable of explaining why you enroll in the National Open University of Nigeria (NOUN) academic programme?

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All right. Let us continue our discussion.

### 3.4 The Theory of Instinct

Some behaviours are driven by **instincts** – innate, biological motives that are expressed in a consistent way (Hadley, 1992; Tinbergen, 1989). Nest building in birds is an innate behaviour pattern triggered by a combination of internal and external events. Instinct is considered to be a purposive, inherited, goal-seeking tendency (Alhassan, 2000).

Some theorists placed great emphasis upon one or two instincts, for example, Freud on the sex instinct, while others advanced lists of instincts. This theory implies that for every type of human behaviour manifestation, there was an underlying instinct and an accompanying

emotion. Mc Dougall (1932) listed various instincts and their corresponding emotions. Let us give examples:

<b>Instincts</b>	<b>Emotions</b>	<b>Instincts</b>	<b>Emotions</b>
Fight	Fear	Self-assertion	Positive self-feeling
Food seeking	Gusto	Self-abasement	Negative self-feeling
Curiosity	Wonder		
Pugnacity	Anger	Reproduction	Lust
Affiliation	Affection	Gregariousness	Companionship
Acquisition	Feeling of ownership	Repulsion	Disgust
Laughter	Amusement		
Appeal	Distress		

The analysis of instincts will reveal that instincts are natural urges or innate tendencies. They are therefore unlearned, independent of schooling and individual experiences. They are universal in the entire species, and usually aim at the safety and well-being and preservation of species. You should note that instincts are not ready at birth; they have their time for maturity and stimulation. Following Mc Dougall's lead, other psychologists added to the list of instincts, and some 14,000 instincts were invoked by various authors to explain the motivational bases for human behaviour (Atkinson, 1964).

It is important for you to note that the theories soon fell into disrepute because they could not explain the variability in human behaviour, which was clearly influenced by learning (Tolman, 1932). The so-called human instincts simply do not fit our definition of the term 'instinct'. Note also that instinct theory more generally survives today in the form of **ethnology**, the study of the species – specific behaviours of animals (including humans) in their natural settings. The primary emphasis of ethnology is on the origins of behaviours in lower animals.

Ethnologists are interested in behaviour that is **species specific** – meowing in **cats**, barking in dogs – and behaviour that occurs in **fixed action patterns** – behavioural sequences that occur in exactly the same way each time because they are hand-wired into the nervous system. Fixed action patterns are triggered by a **releaser** – specific stimulus that **elicits** the behaviour. Flight without a practice in some birds is an example.

Some ethnologists also point to fixed **actions** in human behaviour, such as the smile of very early infancy that occurs without learning. We shall discuss another theory of motivation in the next section of this study unit.

### 3.5 Homeostasis Theory of Physiological Needs

At this point in our discussion, there is a necessity to distinguish between needs and drives before attempting to expound on this theory. If a rat (in an experiment) that has been deprived of food for several hours is placed inside a box with several alleys leading to food, it will be active. A well-fed rat placed in the same maze may move about a little, but it will cover less ground than the hungry rat. After eating, the hungry rat will no longer be restless and if returned to its cage, it is likely to curl up and go to sleep. When the rat is hungry again, its activity cycle will begin again.

In the example discussed above, we refer to the food-deprived state as a state of need. The organism needs food, and when the rat has not eaten for a while, chemical changes in its blood indicate its need. The need for food is physiological but a state of physiological need has psychological consequences. We call the psychological consequences of a need a drive. Thus, the food need in the rat leads the rat through processes we call hunger drive that is the drives to look for food.

While need and drive are parallel, they are not the same. Drive does not necessarily get stronger as need gets stronger. A starved organism may be so weakened by its goal need that drive is weakened. Men who have fasted for a long time report that their hunger pangs (a subjective representation of hunger drive) come and go, but of course, their need for food persists.

The theory of homeostasis was propounded by Cannon (1932). What is homeostasis? Homeostasis is a state of equilibrium or stability that the body strives to sustain. Under the control of centers in the brain, homeostatic mechanisms maintain a variety of physiological balances. They ensure a constant internal body temperature of 98.6° even in very hot and very cold environments (Weisinger et. al, 1993). They also maintain proper blood concentrations of oxygen, carbon dioxide, salt, sugar, and other substances (Boldyner, 1993; Stellar, 1993). Let us cite examples to make our discussion clearer.

We quench our thirst with a drink that makes us feel satisfied or contented. Our experience of various needs satisfied from childhood acquaints us with the learning of various primary goals, for example food, sex, water, and environmental pressures. It is important for you to

note that this theory explains how needs generate primary drives (hunger, thirst, and so on ) but does not explain how and why human beings are continually driven to seek more money, better job, and higher standards of living, and so on.

#### **4.0 CONCLUSION**

In this study unit, you have learnt the variables influencing learning. You should also have learned the meaning of the term motivation and the theories of motivation. In addition, you should have learned the theory of instincts as well as the homeostasis theory of physiological needs.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns variables influencing learning.
- ii. You have also learnt the meaning of the term motivation and theories of motivation.
- iii. In addition, you have learnt the theory of instincts.
- iv. Finally, you have learnt the homeostasis theory of physiological needs.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

1. List ten (10) variables (factors) that may influence learning.
2. (a) Briefly explain what you understand by the term instincts.  
(b) State why the theory of instinct fell into disrepute.

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## **UNIT 4      ADDITIONAL THEORIES OF MOTIVATION**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Drive Theory
  - 3.2    Theory of Intrinsic Motivation
  - 3.3    Theory of Achievement Motivation
  - 3.4    Bruner's Model of Motivated Behaviour
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Reading

### **1.0    INTRODUCTION**

In study unit 3, we discussed some of the factors affecting learning. You can also explain the term motivation. You should also be able to list and describe theories of motivation, with particular emphasis on instincts and homeostasis theory of physiological needs. You are about to study other theories of motivation so as to enhance your level of understanding of human behaviour. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated below.

### **2.0    OBJECTIVES**

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

- 1)    Explain the drive theory of motivation.
- 2)    Describe the theory of intrinsic motivation.
- 3)    Distinguish between achievement motivation and motivated behaviour.

### **3.0    MAIN CONTENT**

#### **3.1    Drive Theory**

One of the most widely used concepts in theories of motivation is drive. What is the meaning of drive? Do you have any idea? Let us continue. A **drive** is a condition of arousal or tension that motivates behaviour aimed at reducing that tension. Drive theories typically hypothesize that a set of physiological survival drives motivate behaviour. These include

hunger, thirst, sleep, pain, and sex. Additional drives can be learned on the basis of these physiological drives.

Although the drive concept was introduced by Robert Woodworth (1918), it was Clark Hull (1943) who first used the term in a major theory of motivation and learning. In his drive reduction theory, he gave explanations on how the primary drives are transformed into secondary drives and how the primary goals eventually lead to the secondary goals. According to this theory, behaviour probability of response is determined by the product of two factors:

- 1) drive strength – motivational factors depending on the internal states and external incentives, for example, period of food deprivation; and
- 2) habit strength – habit built up through practice, learned mechanism, strength of the bond connecting the stimulus and response, for example, the number of times the response is reinforced, in the case of a hungry child, it is crying response which is being reinforced by food or milk.

Then by means of simple stimulus substitution and stimulus generalisation, a host of other stimuli is associated with the primary goal, for example, presence of mother, fetching food, and so on. If the child experiences frustration in trying to realise these primary goals, ‘conditioned fear’ or ‘anxiety’ in the child is generated. Anxiety is thus a secondary drive. As learning goes on, the organism wants to be free from stress situations caused by anxiety. He therefore, generates secondary drives of acquisition or acquisitiveness, competitiveness, and so on to realise secondary goals of job, education, wealth, home, and so on. It is important for you to note that the drive theory has been more acceptable to psychologists since the conditions that produce drive and the definition of the particular drive state are more susceptible to accurate measurement.

It is also important for you to note that individuals learn to progress towards secondary goals, but the drive theory does not explain a number of other details in human motivation. For instance, why does one individual manifest more motivation than another when both are aspiring for the same goal, say education? How can motivation be increased by controlling the stimulus situation confronting them? Why are certain activities self-motivating?

**SELF – ASSESSED EXERCISE 1**

1. (a) From your understanding of our discussion, briefly explain what a drive is

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- (b) Why do you think anxiety is a secondary drive?

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Well done. Let us continue our discussion.

**3.2 Theory of Intrinsic Motivation**

As we have seen, traditional behaviourists have explained behaviour in terms of certain biological inherent drives such as hunger, thirst, sex and material behaviour and a number of other physiological drives are produced as tissue-needs of the organism. These are the basis of more complex motives developed out of physiological needs through the process of learning. For example, it is claimed that the need for approval, first begins to develop when the infant associates his mother's smiling, approving face with feeding.

The merits of these traditional drive reduction theories have been debated on by later psychologists. Drive theories emphasise that the organism seeks to reduce some kind of stimulation as created by sex, hunger, thirst and pain, and so on. However, there are situations when people seek stimulation. Man and animal are both curious in novel situations in their environment. Hence, Hunt (1965) has developed a theory of intrinsic motivation.

As a background to this theory, you need to understand the TOTE model of behaviour. This model of behaviour was greatly influenced by the



language used in the computer. One group of psychologists (Miller, Galanter & Pribram, 1960) has claimed that all behaviours should be analysed into such sequence as test-operate-test-exist, or TOTE sequence. For example, consider the simple task of hammering a nail. At first, the individual's behaviour must be determined by the condition of one particular nail. If the nail projects above the surface of the wood, it must receive another blow, and if it still projects, still another blow.

In computer languages, the boy is in a loop, controlled by the flushness of the nail. As soon as the nail has been driven flush, however, the control must be transferred to another nail and a new loop. While within a loop the boy must TOTE on to another loop. This model demonstrates how the incongruity of a situation is resolved into its congruity once the situation is successfully tackled. The mechanism for achieving equilibrium, therefore, is assumed to follow the TOTE model.

Having understood the TOTE model, the question that arises for us to answer is: How much incongruity of a problem or stimulus is needed to set the individual to strive to arrive at his congruity?

### **1. Information Standard**

This means that a child will only strive to attain his comfort standard – a situation of balance (or satisfaction) derived from the successful operation undertaken by the child – if he has sufficient knowledge or information to deal with. This sufficient information of the child's obviously refers to his previous relevant information.

### **2. Action Standard**

This means that the child has relevant experience of doing or undertaking the operation to arrive at his congruity.

A most relevant question for us to consider now is: What does the theory of intrinsic motivation implies? This theory therefore implies that intrinsic motivation of a child or an individual is dependent on three factors:

- i) incongruity of the task or problem;
- ii) the information standard relating to the problem; and
- iii) the action standard of the child also relating to the problem.

**SELF – ASSESSMENT EXERCISE 2**

1. Another issue that is important in teaching and education is: Can we increase intrinsic motivation in the classroom?

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Let us continue our discussion.

Hunt (1965) says: Yes, we can increase intrinsic motivation in the classroom. Awareness of the three factors involved in intrinsic motivation should make the teacher give adequate care in preparation of lessons especially with reference to its difficulty level determined by the information standard and action standard of the children. The teacher could see to it that the lesson presents enough challenge or the right amount of difficulty so that children will strive, and so that they will not avoid doing it because it is too difficult.

**Extrinsic motivation** comes from external environment and typically takes the form of rewards, such as grades on tests, money, and social praise. Such external rewards are useful because they can act to modify behaviour, strengthen existing behaviour, increase self-esteem, and provide helpful information about performance. Getting a B on a test, for example, can reward you for your hardwork (it's better than C) and also cause you to study harder in order to get an A on the next exam.

Any consideration of extrinsic motivation must consider **incentive theory**: What is an incentive? An incentive is any external object or event that motivates behaviour. Sometimes incentives reduce drives, but often they do not. A child may work hard to get a new toy, a student to get an A in a test, an actor to get an oscar, or a worker to get a promotion. In each case, there is an incentive but no apparent drive.

Incentive theory accounts for individual differences in behaviour by assessing the **value** the incentive has for a specific individual. A student with a 4.0 average may work much harder to get an A than one with 3.0 average in part because he wants to maintain his perfect Grade Point Average (GPA). He values the A, the incentive, the incentive, more. Value can be influenced by both biological factors and prior experience. For biological reasons, you will place much greater value on a sandwich when you last at 3 days ago than when you ate 3 hours ago. However,

based on past experience, you might prefer a serving of burger, chips and beans if given a choice.

It is important for you to note the difference between drive and incentive theories: Drive theory bases motivation primarily on internal states, such as hunger; incentive theory emphasises **external** stimuli. For that reason, drive approaches are often referred to as **push** theories and incentive approaches as **pull** theories. Drive theory relies more on biological factors as sources of motivating while incentive theory is more environmental.

### 3.4 Theory of Achievement Motivation

Consider the cases of two young business executives, Tata and Sapa. Tata arrives at work promptly at 8.00 a.m. and seldom leaves before 4.00 p.m., always taking a loaded briefcase home with him. He works at least one day each weekend, always arrives at meetings on time, and often completes assigned work early. Sapa works the minimum hours from 9 to 4 and takes long lunches. He is often late for meetings and frequently requests extensions to complete assignments. David Mc Clelland might suggest that the principal difference between these two people is in their levels of achievement motivation or need for achievement. A uniquely human drive, **achievement motivation** is a striving to overcome challenges, improve oneself, attain excellence, and accomplish more than others.

Mc Clelland and his associates hypothesise that achievement motivation is an important determinant of goal attainment. So important did Mc Clelland believe achievement motivation to be that he developed an entire theory of this motive based in part on the earlier work of Henry Murray (1938). Mc Clelland's theory views achievement motivation as a learned motive. There is considerable support for his hypothesis that people differ greatly in need for achievement and that these differences are reflected in a variety of behaviours (Elliot, 1994; Rebata, 1993). Moreover, the levels of achievement motivation that characterise a society have considerable impact on its technological and economic growth and on the overall success of that society as a culture (Mc Clelland, 1961). One member of the original Mc Clelland group, John Atkinson, went on to develop a more detailed theory of achievement motivation.

In support of Hunt's theory, Atkinson (1978) came up with his model of achievement motivation. He identifies two factors that determine the will of the individual to achieve, that is factors that intrinsically motivate the individual to engage in an activity. These are:

- a. probability of success (PS); and
- b. incentive to success (IS).

To make our discussion clearer, let us cite an example: if we are faced with a problematic task or situation we ask ourselves; what is the probability that I will succeed in the task? Theoretically, PS and IS are inversely related, that is, if the probability of success is low then the task involved must carry with it a high incentive and vice versa. For instance, in any society, a profession demanding a lot of expertise of a very high degree is usually well paid, that is they carry with them a very high incentive, and therefore the motivation to succeed in this profession is very high.

Atkinson suggests that there are some people who are success oriented, and there are some who have high degrees of anxiety about failure. Results from experiments he conducted reveal that success-oriented people tend to set personal goals of intermediate difficulty or middle level difficulty (they have a fifty – fifty chance of success). Anxiety – ridden people tend to set personal goals that are either too high or too low. If these anxiety – ridden people will fail on the hard task, no one can blame them, and they are sure to succeed on the easy task. It is obvious therefore that there is a strong need in the individual to avoid failure especially if they experience repeated frustrations because of failure. This must be taken into account in arranging learning experiences. Atkinson, like Hunt, suggests that the individual is motivated to achieve when the task is presented at half-way level of difficulty, that is, there is enough degree of probability that they will succeed and that there is a corresponding degree of incentive attached to it.

In the classroom, when the lesson is too easy, the children will get bored and restless, and when the lesson is too difficult, they will feel frustrated and disinterested. The optimal level of difficulty, therefore, should be half way between the extremes of ease and difficulty for all the children to exhibit their maximum tendency to achieve success in their learning undertakings.

### SELF – ASSESSED EXERCISE 3

1. Given our discussion, list three (3) things for which you have a strong need to achieve:
  - i) .....
  - ii) .....
  - iii) .....

Well done. Let us continue our discussion.

### 3.4 Bruner's Model of Motivated Behaviour

Relevant to the theory of intrinsic motivation is Bruner's (1966) model explaining motivated behaviour. He identifies three types of intrinsic motivation that may make a child willing to learn:

- i) **Curiosity:** Bruner believes that we come into the world equipped with a curiosity drive. He feels that curiosity drive is of biological relevance, that is, curiosity is necessary to the survival of the species. Bruner suggests that young children are two often curious, that they are unable to stick with anyone activity. Their curiosity leads them to turn from one activity to another in rapid succession, and it must therefore be channeled into a more powerful intellectual pursuit.
- ii) **Drive to achieve competence:** Children become interested in what they are good at, and it is virtually impossible to motivate them to engage in activities in which they have no degree of competence.
- iii) **Reciprocity:** Involves a need to work with others cooperatively, and Bruner believes that society itself developed as a result of this basic motivation.

### 4.0 CONCLUSION

In this study unit, you have learnt the drive theory of motivation. You should also have learned the theories of intrinsic motivation and achievement motivation. In addition, you should have learned Bruner's model of motivated behaviour.

## 5.0 SUMMARY

- i. What you have learnt in this study unit concerns the drive theory of motivation.
- ii. You have also learnt the theory of intrinsic motivation and the theory of achievement motivation.
- iii. In addition, you have learnt Bruner's model of motivated behaviour.

## 6.0 TUTOR MARKED ASSIGNMENT

1. Briefly explain Atkinson's PS & IS in relation to the classroom.

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## **UNIT 5      MOTIVES,      NEEDS      AND      THEIR SATISFACTION**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Sustaining Interest in learning
  - 3.2 Maslow's Hierarchy of Needs
  - 3.3 Flexibility of the Hierarchy
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 4, we discussed the drive theory of motivation. You can also explain the theory of intrinsic motivation as well as the theory of achievement motivation. In addition, you should also be able to describe Bruner's model of motivated behaviour. You are about to embark on the study of a unit that is relevant and very applicable to the teaching – learning process. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated below.

### **2.0 OBJECTIVES**

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

- 1. Explain how interest in learning can be sustained.
- 2. Describe Maslow's Hierarchy of Needs.
- 3. State how flexible the hierarchy of needs is.

### **3.0 MAIN CONTENT**

#### **3.1 Sustaining Interest in Learning**

Considering the various theories discussed, we shall now make useful suggestions for teaching concerning motivation in the classroom:

- 1. Do everything possible to satisfy the deficiency needs – physiological, belongingness, esteem, and so on.
  - (a) Allow for the physical condition of your pupils and the classroom, for example, be aware that your students may be occasionally hungry or thirsty. This may sound



- obvious, but it is frequently forgotten. Make a habit of checking ventilation of the room.
- (b) Show your students that you take an interest in them and that they belong in your classrooms; and
  - (c) Arrange learning experiences so that all students can gain at least some degree of esteem. You should play down comparisons: encourage self-competition; permit students to work towards individual goals; give individual assistance to slow – learners.
2. Direct learning experiences toward feelings of success in an effort to encourage a realistic level of aspiration, an orientation toward achievement, and a positive self-concept. Students who experience early failure in any learning will either lose interest or actively avoid further learning experiences (Alhassan, 2000).

### SELF – ASSESSMENT EXERCISE 1

1. Given our discussion so far, list any three (3) actions manifested by your secondary school teacher that you consider not motivating during the teaching – learning process.
- i) .....
  - .....
  - ii) .....
  - .....
  - iii) .....
  - .....

Well done. Let us continue our discussion.

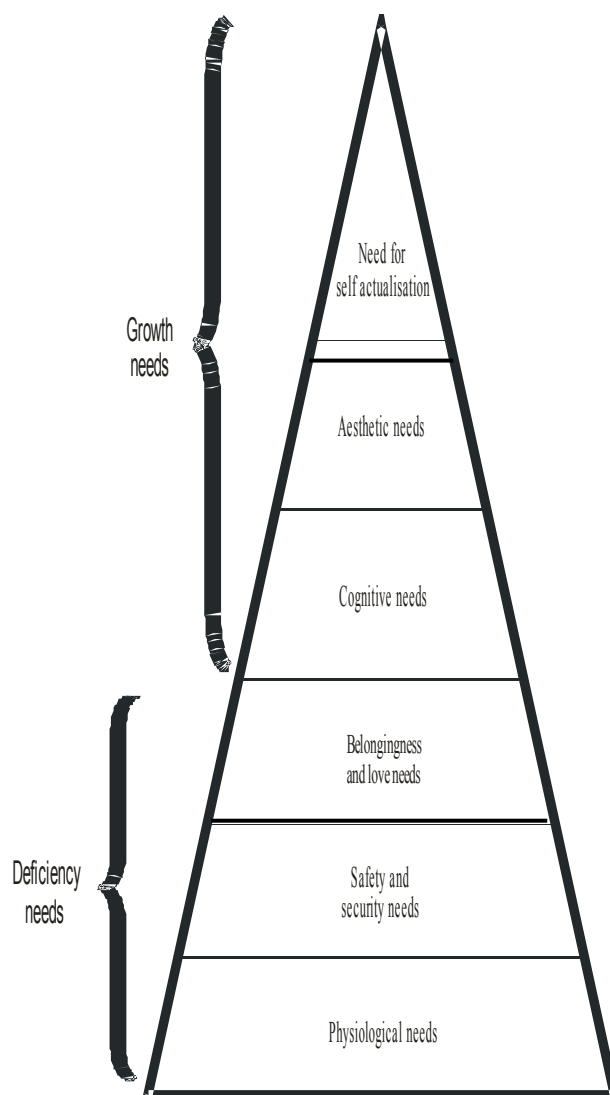
### 3.2 Maslow's Hierarchy of Needs

The instinct, drive, intrinsic motivation, achievement motivation and model of motivated behaviour theories all assume that humans are motivated in the same ways as lower animals. Abraham Maslow's theorised that some motivational forces are distinctly human. In promoting this idea, Malsow became one of the founding fathers of the Humanistic school of psychology, which emphasises that humans are unique in the animal kingdom.

The humanistic view suggests that human beings are unique in the animal kingdom; they are not merely the organisms standing on the highest rung of the evolutionary ladder. Humans are uniquely capable of having a self-concept, a perception of their own characteristics. In addition, every individual is different, and this individuality is a central determinant of human behaviour.

Behaviour is controlled not so much by the external environment as by the subjective environment created by the individual's biased perceptions of what is going on around her. Each individual experiences the world a bit differently, and it is this subjective, individualised world that influences behaviour. Biology has a role, in that each person is endowed with biological motivations that greatly affect behaviour.

**Figure I: Maslow's Hierarchy of Needs.** Human needs are arranged in a hierarchy. Basic needs must be satisfied before higher needs are fulfilled (Maslow, 1970).



Maslow hypothesised that human behaviour is motivated by a number of competing needs that can be arranged in a hierarchy. It is important for you to note that this **need hierarchy** is a systematic listing of needs in priority order, such that needs further up the hierarchy can be met only after more basic needs have been satisfied. The more basic needs are **deficiency needs** – needs that must be satisfied for survival. The needs at the very top are **growth needs** – needs that enhance the person's psychological functioning (see Figure I). Let us now explain in more detail the six basic needs:

### 1) **Physiological needs**

At the lowest level of the hierarchy are physiological needs such as hunger, sex, maternal behaviour, and various sensory pleasures (that is of the senses, for example taste). These needs are of remarkable importance essentially because they are the most prepotent of all man's needs and, if unsatisfied, dominate all activity.

### 2) **Safety needs**

These are almost as dominating as the physiological needs. These are illustrated by a child's reaction to noise and light, and generally reflect man's need for a safe, orderly predictable world. It includes the need for shelter, clothing, and freedom from fear of personal danger, many parents in Nigeria satisfy the safety need for children. A substantial percentage of parents do not. This generates a severe obligation for other agencies of society particularly the school. Today in Nigeria, both child and adult safety needs are often threatened by societal violence, avoidable communal violence, and state-of-the-art armed robbery incidence.

### 3) **Belongingness and love needs**

Travers (1986:206) writes that if the physiological and safety needs are met, the need for love, affection, and belongingness emerges. The individual begins to look to others for satisfaction, both to give and to receive. The educational implications of this need seem obvious: children must feel wanted and experience a sense of affection toward and from the teacher. Remember that children need and want discipline as much as they require love and affection.

### 4) **Esteem needs**

These are the needs of being worthwhile and capable of making a contribution to society. Real self-respect is based upon achievement, and the esteem needs founded upon actual achievement, manifest

themselves in a feeling of self-confidence and a corresponding desire for recognition by others. Self-esteem is the need to maintain a perception of oneself as a generally competent, strong, independent person. The need for other esteem is the desire to have a good reputation and to obtain recognition and status. Failure to satisfy the esteem needs is likely to lead to feelings of incompetence, helplessness, and inferiority. It is important for you to note that the lesson for educators seems obvious: Teachers must insure that the task are such that pupils/students can satisfactorily complete them, thus insuring goal achievement and a growing confidence in self and recognition by peers.

### 5) **Aesthetic needs**

When all the deficiency needs are regularly satisfied, the **growth needs**, including the cognitive needs for understanding and knowledge, and the aesthetic needs for order and beauty, become dominant motivators. The aesthetic needs are the needs in which one finally comes to a deep understanding of the world and the purpose of life and feel a part of the cosmos. Satisfaction of these needs moves the individual to a higher state of psychological functioning and makes him a more effective person.

### 6) **Self-actualisation needs**

The very highest need – the capstone of Maslow's hierarchy – is the need for self-actualisation. It is each individual's need to advise all higher capacities, fulfill his/her potentials, and become the best in which one enjoys the experience of creativity and the joy of personal success.

The self-actualising person referred to by Maslow as the fully human person, is constantly striving to achieve higher and higher levels of personal growth. He/she is non-defensive, open to experience, spontaneous, problem-oriented, and largely autonomous from the environment (Mittelman, 1995). Maslow (1970) believed that a person's position on the hierarchy is likely to rise with age, but estimated that less than 1 percent of the population ever achieve self-actualisation. Travers (1986) similarly states that probably few, if any, people ever experience self-actualisation but it is undoubtedly this need that drives man to his greatest accomplishments, both personally and socially.

## SELF – ASSESSEMENT EXERCISE 2

- 1) Take a close, critical look at the Nigerian society. Do we have self-actualised people (living or late) in Nigeria?

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Let us continue our discussion.

### 3.3 Flexibility of the Hierarchy

It is important for you to note that there is nothing inflexible about the hierarchy. For instance, for some people, one need may assume much greater significance than another (the esteem need may be less important than the love need). For most people, partial need satisfaction is apparent. This is to say that we are never completely satisfied in our needs, such that as the individual determines that he has achieved sufficient satisfaction in one need, then another need emerges.

We need to achieve a better understanding of how these needs can be fulfilled in adolescents. Humanistic psychology, which assumes that people are basically good so long as their basic needs are met, has a better chance of doing so. Teachers and parents as well as others who would be helpful to teenagers should become more aware of the teachings of humanistic psychology.

Humanistic educators such as Sidney Simon (values clarification), Carl Rogers, Abraham Maslow, and Lawrence Kohlberg (states of moral development) presented teachers with a variety of techniques to clarify the values and develop the moral base of their students. You should note also that humanistic educators insisted that greater attention should be placed on developing the affective domain or emotions and feelings of a child, not just the cognitive domain, or intellect. Thus, the emotions, the intellect, and the psychomotor – all need attention.

## 4.0 CONCLUSION

In this study unit, you have learnt how interest in learning could be sustained. You should also have learned the hierarchy of needs as propounded by Maslow. In addition, you should have learned the flexibility of the hierarchy of needs.

## 5.0 SUMMARY

- i. What you have learnt in this study unit concerns how interest in learning could be sustained.
- ii. You have also learnt the theory of Maslow's Hierarchy of needs and their educational implications.
- iii. In addition, you have learnt flexibility of the hierarchy of needs.

## 6.0 TUTOR MARKED ASSIGNMENT

1. Given our discussion, would you say Maslow's hierarchy of needs is rigid? Support your answer with a brief explanation.

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Now it is time to congratulate yourself for participating all through in our discussion. Be rest assured that you would find the remaining study units in this course very stimulating.

**MODULE 3**

Unit 1	Critique of Maslow's hierarchy of needs
Unit 2	Observational learning
Unit 3	Human behaviour

**UNIT 1 CRITIQUE OF MASLOW'S HIERARCHY OF NEEDS**

1.0	Introduction
2.0	Objectives
3.0	Main Content
3.1	Critique of Hierarchy of Needs
3.2	Cognitive Theory
3.3	Perception Motivates Behaviour
3.4	Evolutionary Theory
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Reading

**1.0 INTRODUCTION**

In study unit 5 of Module II, we discussed how interest in learning could be sustained. You can also explain Maslow's hierarchy of needs. In addition, you should also be able to state the flexible nature of the hierarchy of needs. You are about to commence the study of a unit that you would find refreshing. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated below.

**2.0 OBJECTIVES**

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

- 1) Explain the strength and weakness of Maslow's theory of hierarchy of needs.
- 2) Describe cognitive theory of motivation.
- 3) Discuss how perception motivates behaviour.

**3.0 MAIN CONTENT**

### 3.1 Critique of Hierarchy of Needs

A point you must note is that Maslow's theory has been very influential both in practical applications and in generating research (Ebersole & De-vore, 1995). In the world of business, it has provided a way of understanding what motivates employees and has been used as a tool to reduce turnover, increase productivity, and improve job satisfaction (Aamodt et. al. 1993). Maslow's need theory suggests that management should work to gradually move each employee up the motivational hierarchy toward self-actualisation – the full realisation of an individual's potential.

In addition, applications in education, nursing, consumer economics, management training, and elder care are also common (Daniels, 1992; Seeley, 1992; Umoren, 1992).

It is important for you to note that research support, on the other hand, has been hard to come by. Complex constructs like self-actualisation are difficult to define and measure, and what supportive research there is has been widely criticised (Heylighen, 1992).

Equally as important is the repeated failure to confirm the priority ordering of the need hierarchy (Wicken et al, 1993). When subjects are asked to rank the needs in order of importance for them, the rankings typically do not conform to Maslow's hierarchy (Mills, 1985). Enduring satisfaction of physiological and security needs does not necessarily mean the person will go on to seek belongingness and love. In other cases, those needs may be pursued even in the face of chronic hunger.

Now try this quiz:

#### SELF – ASSESSMENT EXERCISE 1

1. Given our discussion so far and your own personal experience list out the hierarchy of needs according to your priority:

- i. ....
- ii. ....
- iii. ....
- iv. ....
- v. ....
- vi. ....

That's okay. Let us continue our discussion.



Moreover, the age hypothesis has not been confirmed: Position on the need hierarchy does not consistently increase with age (Goebel & Brown, 1981). All the same, it is important for you to remember that Maslow's theory has been influential and is widely applied in practical settings but has not been supported by research.

Piaget's theory holds that intelligence is part of the biological adaptation of the human being to the world. Through the process of assimilation and accommodation, learners acquire and modify their cognitive structures. These cognitive structures organise learner's experiences and make them meaningful.

Piaget viewed humans as biological organisms who must develop means of fitting into their environment in order to survive. Intelligence is a particular instance of biological adaptation and achievement which allows the individual to interact effectively with the environment (Glover et. al 1982).

The cognitive theory sees an organism as inherently active, and acting on its environment rather than merely reacting to it. The organism is ultimately involved in the construction and definition of its environment.

### **3.2 Cognitive Theory**

Cognitive theories of motivation emphasise the role of thought processes in initiating, maintaining, and guiding behaviour. We use active, conscious, decision-making processes to determine both our goals and the means by which we achieve them. In short, thought motivates action (Fodo, 1994). Let us cite an example. When the scale says you are 10 kilograms overweight, you think about the consequences and decide to go on a diet.

The above are the cognitive processes, and your weight loss is thus motivated by your cognitions. It is important for you to note that in this theory, perception is a motivator and there is an important difference between extrinsic and intrinsic motivators.

The next section of this study unit discusses how perception motivates behaviour.

### **3.3 Perception Motivates Behaviour**

In cognitive theories, certain kinds of thought processes can be motivational. Theorist Bernard Weiner (1980) focuses on the role of **perception**, or cognitive interpretation, in behaviour. Action is motivated by the person's perception of causality – of what is causing

outcomes to occur. Weiner hypothesises three major dimensions of perceived causality, which he calls locus, stability and controllability.

The **locus** of perceived causality may be either inside or outside the person. When you perceive an internal locus, you see yourself as causing success or failure. If you failed a test, for example, you might conclude that you didn't study hard. When you perceive an external locus, you attribute the success or failure to forces outside yourself. You might blame your test failure on the instructor's poor instructional approach/style.

## SELF ASSESSMENT EXERCISE 2

1. In your years of schooling, have you ever failed to test/exam? If so, what would you say was responsible for that situation?

.....  
 .....  
 .....

If not, what would you say was responsible for that situation?

.....  
 .....  
 .....  
 .....

That's interesting. Let us continue our discussion.

The second dimension, **stability**, refers to your perception of the consistency of the phenomenon in question. If you always do poorly on exams of this type, you might perceive such failure as a stable characteristic in your life. But if such failure is unusual, you are likely to see it as an unstable characteristic.

**Controllability** is your perception of the extent to which you can influence the outcome of the situation. You may feel that you can do better on your next exam by studying harder (controllable outcome) or that nothing you can do will improve your performance (uncontrollable outcome).

But how do these cognitive dimensions affect motivation? You shall soon know this.

These three cognitive dimensions affect motivation in a number of ways. Locus affects your self-esteem, which may be increased or decreased. Your perception of stability determines the extent to recur in the future. And your concept of controllability can affect your perceptions of other people.

If you feel that others are in control of a situation, you will like them more if the outcome is positive than if it is negative. Some studies have confirmed the utility of Weiner's theory in understanding motivation and associated achievement (Prussia et. al. 1993).

It is to be noted that Weiner's cognitive theory of motivation is related to a broader social psychological theory called attribution theory, which deals with the perception of causal relationships in social situations.

Attribution theory came into being in 1958, when Fritz Heider hypothesised that the perception of both social and non-social events involves an ongoing quest for meaningful explanations of the causes of these events. He distinguished between dispositional and situational attributions and suggested that although some attributions are largely based on logical analyses of events, others may reflect the person's psychological needs, expectations, and motivations.

### **3.4 Evolutionary Theory**

From the evolutionary perspectives, motives are seen as mechanisms that have evolved to ensure the survival and reproduction of the species. As with other evolved features, the motivational systems of current humans are those that best permitted our ancestors to adapt to their environments.

The adaptive value of such physiological motives as hunger, thirst, pain, and sex is easy to see. All are required for the survival of either the individual or the species, and survival is basic to Darwinian theory. Psychological feelings of hunger and thirst arise from bodily mechanisms triggered by the deprivation of substances basic to life itself. They cause behaviour that acts to replenish these essential survival resources, whether it be hunting in the forest or driving to Mr. Biggs.

Pain is also essential because it protects the body. The feeling, or even the possibility, of pain is again triggered by specific, evolved mechanisms and causes action to remove the source of pain. You

reflexively withdraw your hand from the hot stove and actively avoid the bee that might sting you. Without the pain drive, the body would be much more vulnerable to injury and death. The sex drive deals with the survival of the species through reproduction.

More complex social motive systems also represent adaptations that solved specific environmental problems over the course of evolutionary history (Thornhill, 1992). Let us consider the example of the affiliation motive – the need to seek out and interact with other people. The evolutionary perspective hypothesises that this nearly universal human motive arose because our ancestors found the company and help of others to be essential to survival. Mutual protection from predators, aid in times of illness, and help in obtaining food may all have been basic to the development of the affiliation motive.

#### **4.0 CONCLUSION**

In this study unit, you have learnt the strength and weakness of hierarchy of needs. You should also have learned the cognitive theory of motivation. In addition, you should have learned how perception motivates behaviour.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns the strength and weakness of the hierarchy of needs.
- ii. You have also learnt cognitive theory of motivation.
- iii. In addition, you have learnt how perception motivates behaviour.

#### **6.0 TUTOR MARKED ASSIGNMENT**

Briefly explain three (3) strengths and two (2) weaknesses of Maslow's hierarchy of needs.

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## **UNIT 2      OBSERVATIONAL LEARNING**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Bandura's Observational Learning
  - 3.2 Four Basic Processes
  - 3.3 The Role of Reinforcement
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 1 of Module III, we explained the strength and weakness of Maslow's theory of hierarchy of needs. You can also describe the cognitive theory of motivation. In addition, you should also be able to discuss how perception motivates behaviour. You are about to study a unit that is stimulating and relevant. Let us examine what other content you should learn in this study unit as specified in the study unit objectives as stated below.

### **2.0 OBJECTIVES**

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

1. Explain Bandura's theory of observational learning.
2. Identify the four basic processes.
3. Describe the role of reinforcement.

### **3.0 MAIN CONTENT**

#### **3.1 Bandura's Observational Learning**

Have you ever fired a pistol? If not, if you were called upon to do so, you probably would know how to hold it, aim it, and pull the trigger. That's because you have often seen guns being fired in movies and on television. In the same way, you acquire a large repertoire of social and other behavioural abilities by seeing your parents and others perform these behaviours as you grow up. You are engaging in a cognitive learning process that theorist Albert Bandura (1965:1992) calls observational learning. Note that observation takes place when the ability to perform a behaviour is acquired or modified by observing others. Those performing the behaviour and being observed are called **models**.

In a classic study of observational learning, Bandura (1965) showed young boys and girls a short film depicting an adult model behaving aggressively toward a Bobo doll, an inflated toy that bounces back whenever it is knocked down.

**Social Learning** The Bobo Doll experiment, showing the model beating up the doll in the film the children watched and then the children imitating the model's behaviour (Bandura, 1965)

After the film, the children were taken to a room containing a number of toys, including a Bobo doll. Results showed that the children tended to reproduce the model's aggressive behaviour toward the doll rather than engage in other types of behaviour.

It is important for you to note that a control group of children who did not see the Bobo doll film did not display the modeled behaviour toward the toy. The behaviour of the children in the experimental group could not readily be accounted for by operant conditioning principles, since they had not been reinforced for playing with the Bobo doll. The modeled behaviour had been learned by observation alone. Let us ask a relevant and timely question: What would happen if the children saw the model actually being rewarded for her aggressive behaviour? A second Bandura study answers that question: Modeling aggression increases aggressive behaviour, and rewarding the model increases it even more. (After Bandura, Ross & Ross, 1963). Alhassan (2000) also states that after viewing actual television shows depicting realistic violence, children are more willing to hurt another child than after watching non-aggressive shows.

Individuals often acquire new forms of aggression through exposure to the actions of other persons. Specifically, individuals frequently seem to learn new ways of harming others through exposure to the actions of parents, friends, actors in movies or characters in TV shows. Informal evidence for the occurrence of such effects among adults is available from several different sources. For example, it is often the case that movies which depict or describe unusual violent crimes are followed by a wave of similar events around the nation, particularly in urban centres and large towns. In such instances, viewers seem to acquire new forms of attacking others, and also learn that it is possible to 'get away' with such actions.

Evidence for the occurrence of destructive modeling has been obtained in many other experiments in which adult subjects exposed to live (Baron, 1974a) or filmed aggressive models (Geen and Stonner, 1973) have been observed to demonstrate higher levels of aggression than

subjects not exposed to such models. If adults can be influenced in this manner by exposure to the aggressive actions of others, it might be expected that children, with their weaker sense of morality and lack of sophistication, would be affected to an even greater degree.

More recent research has gone even further, suggesting that after viewing actual television shows depicting realistic violence, children are more willing to hurt another child than after watching non-aggressive shows (Liekert & Schewartzberg, 1987). We can conclude that the high level of violence prevailing in many popular television shows has adverse effects upon the persons who view them, though not all experimental findings support this conclusion (Manning & Taylor, 1985). But the weight of existing evidence does seem to suggest that exposure to televised violence may weaken children's restraint against attacking or harming others.

Studies suggest that even lower animals learn by observation. Children that have observed chicken models pecking a key to obtain grain learn the response themselves more quickly than chickens that did not observe the model (Johnson, 1986). In the sections that follow in this study unit, we shall discuss the basic processes involved in observational learning, the role of reinforcement, and applications of Bandura's approach to the understanding of social behaviour. But before that, try your hand on this quiz:

### SELF-ASSESSMENT EXERCISE 1

12. From your understanding of our discussion, what type of movies and television programmes would you recommend for children and adolescents in your community or neighbourhood? Briefly explain your response.

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That's nice of you. Let us continue our discussion.



### 3.2 Four Basic Processes

Bandura (1965) explains instances of observational learning as involving four basic processes:

- i) Attention. You must attend to the model in order to learn by observation.
- ii) Retention. If you are to later use what you have learned, you must store it in memory.
- iii) Reproduction. You must be capable of reproducing the learned response. For instance, watching Bruce Lee or Chucks Norris expertly executing a series of Karate moves doesn't mean that you can reproduce them accurately.
- iv) Motivation. You will reproduce observationally acquired behaviours only if you are motivated to do so. You need to have some expectation that making the response will be rewarding. Dada picked up and fired the gun because his friend offered to give him ₦1,000.00.

### 3.3 The Role of Reinforcement

It is important for you to note that observational learning can take place without reinforcement. In fact, Bandura emphasises that reinforcement seen as so essential in classical and operant conditioning theories is totally unnecessary in an observational learning. How then does learning occurs?

Learning occurs by simply observing a model. The model performs the behaviour, you observe it and 'copy' it into your behavioural repertoire. You may display it immediately, as in the Bobo doll study, or not until many years later, as when someone invites you to fire a gun at a target range.

Although not necessarily for learning, reinforcement does have at least two functions in Bandura's approach:

- 1) First, it plays a role when the person actually **performs** the behaviour. Bandura suggests that an observed behaviour may be incorporated into an individual's repertoire but never actually be exhibited until reinforcement is available for that behaviour. Unfortunately, watching people or cartoon characters fire guns and beat each other up, activities that many children see everyday in violent TV programmes, may also lead to observational learning and perhaps later to violent behaviour when reinforcement is available.

- 2) The second role of reinforcement is to enhance the learning process. If, for example, the adult model is rewarded for a particular response, the child is more likely to learn that response rapidly than if the model is not rewarded or is actually punished.

#### **4.0 CONCLUSION**

In this study unit, you have learnt Bandura's theory of observational learning. You should also have learned the four basic processes. In addition, you should have learned the role of reinforcement.

#### **5.0 SUMMARY**

- i. What you have learnt in this study unit concerns Bandura's observational learning.
- ii. You have also learnt the four basic processes of observational learning.
- iii. In addition, you have learnt the role of reinforcement in observational learning.

#### **6.0 TUTOR MARKED ASSIGNMENT**

1. List and explain the basic processes involved in observational learning.

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## **UNIT 3      HUMAN BEHAVIOUR**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 The Motivation of Behaviour
  - 3.2 Human Social Behaviour
  - 3.3 The Neurophysiology of Learning
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In study unit 2 of Module III, we explained Bandura's theory of observational learning. You can also identify the four basic processes of observational learning. In addition, you should also be able to describe the role of reinforcement in observational learning. You are about to study a very interesting unit. Let us examine what other content you should learn in this study unit as specified in the unit objectives as stated below.

### **2.0 OBJECTIVES**

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

- 1. Define self-concept;
- 2. Explain human social behaviour.
- 3. Describe the neurophysiology of learning.

### **3.0 MAIN CONTENT**

#### **3.1 The Motivation of Behaviour**

Carl Rogers was a pioneer in personality psychology. Rogers (1980) believes that just one motivational system, called actualisation tendency, provides the impetus for all behaviour. Actualisation is an inborn tendency of the total organism to realise all its potentials, to grow and improve, and to maintain and enhance itself. As the person interacts with the environment, each experience is evaluated to determine whether it satisfies the actualizing tendency. It is important for you to note that experiences that promote actualisation are positively valued and will be sought out in the future, while experiences that inhibit actualisation are negatively valued and will be avoided. Note also that

whether positive or negative, the experience will be accurately perceived and the individual will be fully aware of its occurrence.

A portion of the actualisation tendency is diverted for the specific purpose of maintaining and enhancing the self, a motive system called self-actualisation. You should remember our discussion in Study Unit 5 of Module II on Maslow's hierarchy of needs. You should therefore be able to understand that self-actualisation causes the individual to strive for self-enhancement and to maintain the consistency of the self-concept. Self-actualisation is basically a social phenomenon. It is an attempt to maintain a consistent self-concept that fulfills the conditions of worth – the values established by society.

A most important trend in modern psychology is the recognition of the 'self' in an individual's personality development. The self is a complex bundle of ideas, attitudes, opinions, and values that the individual has to himself/herself. He/she becomes aware of what and who he is. Consequently, it is obvious that the formative years are crucial in the construction of a positive or negative self-image. Behaviour is purposeful and caused and people act as they do because of the way that things seem to them.

Many psychologists have engaged in study and writing about the self. Of these, the most influential have been Comb & Syngg (1969). They are referred to as perceptual or phenomenological psychologists. They insist that behaviour can only be understood from the viewpoint of the person who is behaving. It is important for you to note that individuals do not behave according to observable facts; rather, they behave according to the facts as they interpret them. Such behaviour is perfectly logical for the person because he knows no other. He reacts to reality as he interprets it, regardless of objective facts as interpreted by others (Alhassan, 2000). Behaviour is controlled by an individual's perception of himself and the world around him. A person's reaction may appear irrational to another, but to that person it is absolutely reasonable because, for him/her, it has a purpose. These personal interpretations are called perceptions and a person's behaviour is a function of his/her perceptions. He/she reacts to his perceptual field that is, experiences at any moment.

Under the influence of self-actualisation, experience is evaluated to determine whether it will enhance the self. Experiences that are consistent with the existing self-concept and thus self-enhancing are accurately perceived, whereas those not consistent with the self are distorted. Let us cite an example to make our discussion much clearer to you. If you see yourself as a student, getting an A in an exam will be consistent, and the information will be perceived accurately. But if you

get a D in an exam, you may tend to distort the experience: ‘The instructional facilitator must have been too strict in grading’ or ‘I really wasn’t feeling very well the night before the exam’.

When experience is distorted, the consistency of the self-concept is maintained, but a state of incongruence or discrepancy between the self-concept and the actual experience has been created. If you blame your low exam grade on your instructional facilitator, you will still be able to maintain you’re a student self-concept, but it will be somewhat inaccurate, since you did indeed receive A. D. Rogers believe that we all distort experience to maintain self-consistency and to self-actualise. The result is that we all have somewhat inaccurate self-concepts. Moreover, when experiences are distorted, the actualisation of the total organism – a far more important consideration for Rogers – may be impaired.

Let us consider the example of a teenager whose friends – or those he would like to be his friends – take up smoking. Now attempt this quiz:

### **SELF – ASSESSMENT EXERCISE 1**

What is the teenager’s self-concept?

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.....

.....

.....

Let us continue our discussion.

His self-concept is that he is a friendly, socially acceptable person. To refuse to take up smoking would be inconsistent with this self-concept and might jeopardise his group membership. In effect, the need to self-actualise might cause him to succumb to the social pressure to smoke. Since smoking would obviously have an adverse effect on the physical health of the total organism, we can conclude that self-actualisation has, in this case, been harmful.

## **3.2 Human Social Behaviour**

Bandura (1992) argues that observational learning is the basis for the development of most human social behaviours. A little boy who starts

‘shaving’ with a plastic razor learns to do so by observing his father. We also learn negative and dangerous behaviours through modeling. Let us cite an example to make the discussion clearer to you: A model’s fear of snakes is quickly learned by an observer (Mineka & Cook, 1993). In addition, child abuse is seen primarily in people who apparently learned this behaviour by observing their own parents (Ammermann & Patz, 1996).

Individuals often acquire new forms of aggression through exposure to the actions of other persons. Specifically, individuals frequently seem to learn new ways of harming others through exposure to the actions of parents, friends, actors in movies or characters in TV shows. Informal evidence for the occurrence of such effects among adults is available from several different sources. For example, it is often the case that movies which depict or describe unusual violent crimes are followed by a wave of similar events around the nation, particularly in urban centres and large towns. In such instances, viewers seem to acquire new forms of attacking others, and also learn that it is possible to ‘get away’ with such actions.

Evidence for the occurrence of destructive modeling has been obtained in many other experiments in which adult subjects exposed to live (Baron, 1974a) or filmed aggressive models (Geen and Stonner, 1973) have been observed to demonstrate higher levels of aggression than subjects not exposed to such models. If adults can be influenced in this manner by exposure to the aggressive actions of others, it might be expected that children, with their weaker sense of morality and lack of sophistication, would be affected to an even greater degree.

Also, there is evidence to support the common notion that children learn to become drinkers and sometimes alcoholics in part by observing their parents (Lang, 1993). Now try your hand on this quiz:

## **SELF – ASSESSMENT EXERCISE 2**

1. Observational learning is important in human learning: List three (3) examples of learning through observation.
  - i. ....
  - ii. ....
  - iii. ....

That’s a good effort. Let us continue our discussion.

### 3.3 The Neurophysiology of Learning

When you read a study unit or take a table tennis lesson, the learning process causes changes in your brain. Knowing what these changes are and how they take place is basic to a full understanding of what learning involves. In this section of the study unit, we shall examine the evolutionary basis for learning.

Neural mechanisms have evolved over time and across species from the simple nervous systems of such organisms as the jelly fish to the complex human brain. It is important for you to note that this neural evolution has been accompanied by the evolution of mechanisms that help each organism to survive and reproduce in its natural environment. Clearly, one of those mechanisms is learning, and evolution has favoured learning as an important survival tool.

From the perspective of evolutionary psychology, the learning mechanisms of a given species are best understood as being related to the natural environment in which the species has evolved. It is to be remembered that natural selection means that the species-specific behaviour patterns seen in animals are those that have historically allowed them to best survive and reproduce in their natural environments. It is important for you to note that what must therefore evolve is both a set of innate behavioural tendencies **and** a set of innate mechanisms for modifying those tendencies. Let us cite an example: A person might inherit a genetic tendency to be more extroverted than introverted. He also inherits mechanisms that permit this tendency to be modified by his experiences in his natural environment. If his parents and others reinforce primarily extroverted behaviour, he may become more extroverted; if more introverted behaviours are reinforced, he may become somewhat less extroverted.

#### SELF ASSESSMENT EXERCISE 3

1. Are you an extrovert or introvert?

.....

2. Why do you describe yourself as such?

.....

.....

.....

.....



Let us continue our discussion.

Simpler behaviours in lower animals – avoiding danger, foraging for food, selecting a mate – evolve in the same way. Some songbirds, for instance, inherit neural mechanisms that allow them to make sounds, but they learn to modify their songs by hearing their parents sing. Both a genetic tendency toward a certain behaviour pattern and mechanisms through which environmental experience can modify that pattern are thus inherited. The collective mechanisms for changing behaviours in response to the environment form the biological basis for **learning**.

Another good example of the evolution of both hereditary predispositions toward patterns of behaviour and hereditary flexibility mechanisms is the development of food preferences. Why is it that we prefer certain foods over others? The answer is that we inherit tendencies to prefer foods that satisfy nutritional needs, but these tendencies are modified toward preferences for specific foods through learning and experience. For example, protein can be obtained from either fish or red meat, but you may learn to prefer one over the other.

The genetic factor works to ensure that the body will periodically replenish a variety of vitamins, minerals, and other substances to survive and maintain normal functioning. If you are deprived of a certain nutrient – say vitamin C – you will select foods containing that nutrient. When the vitamin C needs is met, your preference will change to foods containing other substances for which there is now a greater need (Chamberlain, 1997).

We shall now consider the neurochemistry of learning: A variety of **neurochemicals** known to exist in the brain and nervous system have also been implicated in learning (Wogar, 1993). What are these biochemicals? These biochemicals include neurotransmitters, such as acetylcholine (Diaz, 1994) as well as DNA, RNA, and various proteins and glycoproteins. From the standpoint of the neurophysiology of learning, learning can be seen as a set of evolved mechanisms that permit organisms to adapt to their environments and thus survive. As has been stated elsewhere (Alhassan, 2000) environment is the heritage of mankind, including lower organisms.

#### **4.0 CONCLUSION**

In this study unit, you have learnt human social behaviour. You should have learnt the neurophysiology of learning. In addition, you should have learnt genetics and learning. Finally, you should have learnt the neurochemistry of learning.

## 5.0 SUMMARY

- i. What you have learnt in this study unit concerns human social behaviour.
- ii. You have also learnt the neurophysiology of learning.
- iii. In addition, you have learnt genetics and learning.
- iv. Finally, you have learnt the neurochemistry of learning.

## 6.0 TUTOR MARKED ASSIGNMENT

Supply the missing words in the following questions:

1. .... is the basis for the development of most human .....
2. Evolution has favoured ..... as an ..... and .....  
.....
3. Briefly explain the neurochemistry of learning.

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- It is now time to warmly congratulate yourself for meaningful participation in our discussions all through the study units. And good luck in your semester examination!