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A Functional Approach to Educational Psychology

Comford Iveren Atser PhD & Martina Goshwe PhD

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A Functional Approach to EDUCATIONAL PSYCHOLOGY

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Martina Goshwe (Phd)

Academic Press Ltd
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We are very grateful to God Almighty for giving us this golden opportunity to put this book together. His grace and wisdom is beyond human understanding.

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Comfort Toeren Atser (PhD)
Martina Goshwe (PhD)

Preface

Functional Approach to Educational Psychology is an organized text for prospective teachers at all levels of education from kindergarten to the tertiary levels. Coming from an introductory simple perspective, the book expands to more complex aspects of psychology in education to give a clear, comprehensive coverage for the new and progressing students in the field of education. It offers the basis for foundational teacher preparation presenting psychology as it relates to teaching with emphasis on practical applications.

Organized and articulated in fifteen chapters, the book has been written to provide a functional approach to a course on educational psychology. It is built from several years experience on teaching these concepts from origin of studies in educational psychology, methods of psychological enquiry and importance to teacher trainees. The course of human development was traced from both biological and psychological perspectives. Other chapters dwell on cognitive and language development, motivation and emotion. Also clearly dealt with is the concept of perception, with graphical presentation and practical applications in learning situations. The study of attitude covered the concept, theories of attitude formation and change as well as the need for teachers to stress only the positive attitudes while being good models for the children they teach. A wide dimension of the concept of learning as discussed in the text; learning styles, learning outcomes, learning theories and how they explain the learning process and their applications as well as the laws of learning.

Memory is discussed as a crucial aspect of human learning process immediately followed by remembering and forgetting discussed exhaustively highlighting theories that explain the duo. Intelligence as a basic cognitive ability is what helps people solve problems and succeed in any environment regardless of their cultural backgrounds. The multifaceted nature of intelligence and theories were discussed. Creativity was viewed extensively as a crucial concept in the educative process using
some models to explain the creative process. The role of the
teacher in fostering creativity was also well articulated. The
human personality was reviewed by way of the different
perspectives that psychologists have devised in studying it. It
was discussed along with social development while self-
concept, seen as is the image that is a mix of different aspects
that culminate into building ones self-esteem and the ideal self.
The development of self-concept was discussed along with its
relationship with behaviour and classroom learning.
Guidance and counselling is viewed here as an integral
component of the educational system which basic elements
are needed to assist the students to make adjustment to life in
the course of their educational career and later life. It is a
sensible inclusion that introduces the guidance curriculum to
prospective teachers who by virtue of training have potentials
for counselling practice.

It is a book for practicing teachers, educators as well as a
wide dimension of students and even parents.

Comfort Juureen Atser (PhD)
Martina Gosliwe (PhD)
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MEANING, NATURE AND SCOPE OF EDUCATIONAL PSYCHOLOGY

Meaning of Psychology
Definitions abound on the concept of psychology ranging from historical to more modern conceptions of soul, mind, consciousness and behaviour. By way of etymological considerations the word, ‘Psychology’ is derived from two Greek words, ‘Psyche’ and ‘Logos’. Psyche means ‘soul’ while ‘Logos’ means ‘science’. Thus psychology was first defined as the ‘science of soul’. The early Psychologists were concerned with the study of the nature, origin and destiny of the human soul which was later abandoned due to the metaphysical quality of the soul and since this made observations in some situations near impossible, there was need for other conceptions of the construct. When in the 18th Century it was conceived as the science of the mind it still left some ambiguities as regards what constitutes the nature and functions of the mind so studied. Some other psychologists viewed psychology as the ‘the science of consciousness’ albeit there are three levels of consciousness – conscious, subconscious and the unconscious but it seemed unclear which of these levels the focus in psychology is.

Through the centuries, defining psychology continued to be elusive from the “Science of Soul” to the “Science of Mind” then “Science of Consciousness” and eventually as the “Science of Behaviour”. By and large, modern psychologists found a more embracing and acceptable meaning of the concept of psychology when William McDougall (1905), Pillsbury (1911)
and Watson (1912) all defined psychology as “the science of behavior”. By behavior here they meant overt activities which could be observed. As a consensus therefore, behavior was construed as overt activities which could be observed and measured scientifically.

Psychology is a wide field of study with so many other branches like educational psychology, developmental psychology, clinical psychology, abnormal psychology and social psychology. Educational psychology is the branch of psychology at the centre of educational practice. While general psychology deals with the behaviour of the individual in a general way, educational psychology is concerned with the behaviour of the learner in an educational setting.

Meaning and Origin of Educational Psychology

Most literally, Educational Psychology is the combination of educational studies and psychology. It is the branch of psychology that specializes in understanding teaching and learning in educational settings, drawing its knowledge from theory and research in psychology. In other words, Educational psychology is that branch of psychology in which the findings of research done in psychology are applied in the field of education. It is the scientific study of human behaviour in educational settings and so it deals with the behaviour of human beings in educational situations. Educational psychology is that branch of psychology in which the findings of research done in psychology are applied in the field of education. It is the scientific study of human behaviour in educational settings and so it deals with the behaviour of human beings in educational situations. Educational psychology is that branch of psychology in which the findings of research done in psychology are applied in the field of education. It is the scientific study of human behaviour in educational settings and so it deals with the behaviour of human beings in educational situations. Educational psychology is that branch of psychology in which the findings of research done in psychology are applied in the field of education. It is the scientific study of human behaviour in educational settings and so it deals with the behaviour of human beings in educational situations.

Succinctly put by Peel (1978), Educational Psychology is the science of Education which helps the teacher to understand the development of his pupils, the range and limits of their capacities, the processes by which they learn and their social relationships. Educational Psychology is thus concerned with understanding the processes of teaching and learning which take place within formal environments and developing ways of improving those methods. It covers important topics like learning theories; teaching methods; motivation; cognitive, emotional, and moral development; and parent-child relationships etc. Educational Psychology is a combination or overlapping of two separate fields of study; psychology and education. It is a distinct discipline that has its own theories, research methods, problems and techniques. Educational psychology has a focus on understanding the processes of teaching and learning that take place in formal environments. Educational psychologists are thus concerned with the study of what people think and do as they teach and learn a particular curriculum in a particular environment where education and training are intended to take place. They help in developing instructional methods and materials used to train people in both educational and counselling settings as well as in work settings.

According to Grinder (1989), the origin of Educational Psychology is traced to some great philosophers like Plato who believed that all knowledge is innate at birth but can be perfected by experiential learning during growth. While Aristotle, Plato’s student, observed and believed that comprehension and recall was aided by contiguity, succession, similarity and contrast (association). John Locke in the late 1600’s building on the works of Plato and Aristotle came to the conclusion that the human mind was like a blank or tablet (known as a tabula rasa), on which each successive simple impressions would give rise to complex ideas through association and reflection. Locke actually established the concept of “empiricism” as a criterion for testing the validity of knowledge, in both the natural and social sciences. One of the pioneers of educational psychology was William James (1842–1910) who reportedly gave series of talks to teachers after
launching the first psychology textbook titled "Principles of Psychology" in 1890. According to James, laboratory psychology experiments often can't tell us how to effectively teach children hence the importance of observations in teaching and learning in classrooms. One of his recommendations was to start lessons at a point just beyond the child's level of knowledge and understanding, in order to stretch the child's mind.

One other pioneer in the field of educational psychology is John Dewey (1859-1952), who became a driving force in the practical application of psychology and is credited as the second major figure in shaping the field of educational psychology. Dewey reportedly established the first major educational psychology laboratory in the United States, at the University of Chicago in 1894 and viewed the child as an active learner rather than one who learn passively in a rote manner. Dewey believed that children learn best by doing. According to him, education should focus on the whole child and emphasize the child's adaptation to the environment so that he can learn how to think and adapt to a world outside school. He especially thought that children should learn how to be reflective problem solvers. As an influential psychologist, Dewey also held the belief that all children deserve to have a competent education - girls and boys, as well as children from different socioeconomic and ethnic groups.

Nature of Educational Psychology

Basically educational psychology has a scientific nature which makes it fall in line with other sciences and in sum can be seen as follows:

Educational Psychology as a science

It is concerned with observation of facts and establishment of verifiable general laws because science employs systematic and objective methods for data collection while dealing with the objectives of understanding, explaining, predicting and control of facts relating to human behaviour.

Meaning, Nature and Scope of Educational Psychology

Educational Psychology as a natural science

Has to do with conducting investigations, gathering data and reaching conclusions in much the same manner as is done in the natural sciences like physics or biology.

Educational psychology as a social science

Like in sociology, anthropology, economics or political science, educational psychology studies human beings and their sociability.

Educational psychology as a positive science

Whereas Normative science like Logic or Ethics deals with facts as they ought to be, Positive Science deals with facts as they are or as they operate. In similar vein Educational psychology studies the child's behaviour as it is, not, as it ought to be, and as such is rightly seen as a positive science.

Educational psychology as an applied science

Involves the application of psychological principles in the field of education. Albeit parallel to any other applied psychology, educational psychology applies the principles and techniques of psychology as well as other areas like developmental psychology, clinical psychology, abnormal psychology and social psychology, to study the behaviour and experiences of the pupils/learners.

The foregoing indicates that educational psychology is an applied, positive, social, specific and practical science, but while the other general sciences deal with behaviour of individuals in various other related spheres, educational psychology studies the behaviour of the individual in educational sphere only.

Scope of Educational Psychology

Educational psychology has an ever-growing scope due to ever increasing research in the field of education and other related fields of study. The following areas indicate the scope of educational psychology:
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**The Learner**
The subject-matter of educational psychology is knitted around the learner. Therefore, the need of knowing the learner and the techniques involved include — the innate abilities and capacities of the individuals, individual differences and their measurements, the overt, covert, conscious as well as unconscious behaviour of the learner characteristic of the individual's growth and development.

**The Learning Experiences**
Educational Psychology recognizes the need for and helps in deciding what learning experiences are desirable, at what stage and development of the learner.

**Learning process**
In addition to deciding what learning experiences are to be provided, Educational Psychology is concerned with the laws, principles and theories of learning as they relate to the concepts of remembering and forgetting, perceiving, concept formation, thinking and reasoning, problem solving, transfer of learning etc.

**Learning Situation or Environment**
This deals with the environmental factors and learning situations which come between the learner and the teacher. It also includes aspects of classroom climate and group dynamics, techniques and aids that facilitate learning and evaluation, as well as practices necessary for the smooth functioning of the teaching-learning process.

**The Teacher**
The teacher is a potent force in any scheme of teaching and learning process. The teacher factor emphasizes the need for teachers to play their roles properly in the process of education. This throws light on the teachers' essential personality traits, interests, and aptitudes that could inspire him to become a successful teacher.

Other key areas covered in the study of educational psychology include:

**Study of Stages of Child Development**
The nature of growth and development and general characteristics of physical, mental, emotional and social development at the various stages of infancy, late childhood and adolescence.

**Study of Heredity and Environment**
This is the impact of heredity and environment on the student; the nature/nurture controversy.

**Study of the Learning Process**
Nature and process of learning, laws and methods of learning as well as factors of learning like interest, attention, motivation, memory, habits and transfer of learning.

**Study of the Psychological Basis of Behaviour**
Like instincts, emotions, sentiments, suggestion, sympathy, imitation and play etc.

**Study of Motivation**
The nature, principles and techniques of motivation in educational field.

**Study of Individual Differences**
To suggest ways and means to provide education to all types of pupils while catering for all their individual differences.

**Study of Intelligence and Personality**
This has to do with the nature, development and assessment of personality and intelligence.

**Study of Measurement and Evaluation**
Involves tests for measuring intelligence, personality, aptitudes, interests and achievements etc.
Study of Exceptionality and backwardness among Children
This includes studies in the gifted/disability curriculum and their adjustment problems with home, family and school.

Study of Guidance and Counselling
Studies the nature and process of guidance and counseling.

Methods of Psychological Enquiry
Psychology like any other sciences is concerned with theories and data. Most research works done in educational disciplines are guided by psychological methods of enquiry and this behooves the teacher trainee to be well versed in these methods. The common methods educational psychologists used in making enquiries or studies include experimental methods, correlation studies, observations, case studies and interviews. Some of these methods provide in-depth look at a small sample of individuals while some permit comparison of larger sample of subjects, others involve controlled laboratory experiments and others involve naturalistic observations.

Experimental Method
The experimental method of enquiry is about the most utilized method of studying in educational psychology. It involves the manipulation of independent variables of interest while all other variables or independent variables are controlled or held constant. Usually the experimental method of enquiry involves treatment (such as provision of relevant career information) applied to one group called the experimental group and not the other called the control group. It is assumed that, with all other variables controlled, the one and only variable that is being manipulated is the cause of any subsequent change in the dependent variable. Thus results of experimental studies attempt to establish causal relationships among variables studied. Variables are described as any aspect of the experiment that can vary or change; they are factors that have different values. Example of variables used in psychological studies include age of subjects, gender, task difficulty, time taken for

Survey Method
Survey is a type of psychological enquiry that is used to collect information about attitudes, behavior, aspirations and perceptions. It is a useful source for gathering information on public opinions, consumer preferences, and awareness on educational practices, political, economic and social issues. Surveys make use of questionnaires and interviews. The survey method of psychological enquiry helps to generate very personal or sensitive information under anonymous conditions and it can be used to study large populations through samples.
Correlational Studies

Correlation surveys are studies that attempt to establish relationships between variables, whether such relationships are positive or negative, and inverse or reverse orders. They help in determining the strength and direction of relations among variables of interest. Correlational designs do not permit inferences about causality like experimental studies because the variables of interest cannot be manipulated. They are therefore very useful for issues that can only be studied by assessing correlations or associations between variables. The data arising from correlation surveys can be analyzed and summarized using the co-efficient of correlation designated by a small letter 'r'. The correlation co-efficient is an arithmetic estimate of the degree to which two variables are related and this range from +1.0 to -1.0.

Results from correlational studies help us predict one kind of information by knowing another especially if the correlation between the variables of interest is clearly positive or negative rather than just zero. For example if the results of a correlation study shows a positive relationship between JAMBUME (Joint Admissions and Matriculation Board University Matriculation Examination) score and CGPA (Cumulative Grade Point Average) of undergraduates then performance in the JAMBUME can be used to predict how well an individual may progress through the undergraduate program of study albeit it does not explain causality.

Observations

Observation means watching and describing behavior as it occurs (Umehm, 1999). Naturalistic observation involves making observations of naturally occurring behavior to provide rich and full information from people who are unaware that they are being observed. In this type of observation the observer is not visible as he makes a non-participant or unobtrusive observation. However, the observer may decide to relate or interact with the subjects as he observes in which case he becomes a participant observer. Apart from the risk of making interpretive reports instead of objective descriptions from observations, it is time consuming and may require adequate training on the use of right codes and result summary.

Case Studies

A case Study is an in-depth description of subject/event or very small group of subjects. It is done thoroughly in order to understand the relevant attributes of the subjects. Case studies can be carried out to test a current theory, to refine a theory, to permit the development of new theoretical ideas, and to reveal the exceptional characteristics of certain individuals. Sources of case studies include interviews, observations, therapy sessions, diaries, documentaries etc, some can be based on longitudinal studies taking place over a long period of time. Examples may be like studying the efficacy of one teaching method for the same set of students (learners) from primary one to senior secondary three.

The major strength of case studies is the intensity with which they reveal complex and unique information about the subjects. Nonetheless case studies generally have very low reliability, and this makes it hard to generalize from a single-case study.

Interviews

There are several types of interviews ranging from the unstructured to the totally structured. Unstructured interviews are responsive to the personality, interests, and motivations of the interviewee, but the data obtained tend to be unreliable. In contrast, structured interviews permit comparisons among interviewees, and they tend to be fairly reliable, but what the interviewee says can be constrained and artificial. All types of interviews can produce problems due to social desirability bias, and interviewees can only provide information of which they are consciously aware.

Contributions of various Schools of Psychology to Education

From historical perspectives certain Schools of Thoughts have
Contribution to Education

i. The whole situation will help the individual to get insight.

ii. Children should not be made to learn alphabets, which constitute a word. They must be taught words and even sentences first. This makes learning easy.

iii. According to Gestalt psychology, we have the tendency to go from the whole to the parts. If the school learning also proceeds like this, things become easy.

iv. Gestalt psychology has a great relevance to socialization in the field of education. We emphasize for example, group activity in the school, in which work is assigned to the whole group. Each student, of course, works separately. The work of each is, however, only a part of the whole assignment. Similarly, whenever there is a discussion, group discussion is the best.

v. The whole situation will help the learner to learn quick and efficient.

vi. It gives emphasis to molar approach in understanding behaviour.

vii. It gives importance to group behaviour and social learning in education.

Psychoanalysis

Psychoanalysis was founded during the late 1800's and early 1900's by the Austrian doctor Sigmund Freud and other psychoanalysts, who hold that from early childhood people repress (force out of conscious awareness) any desires or needs that are unacceptable to themselves or to society. The repressed feelings can cause personality disturbances, self-destructive behaviour, or even physical symptoms. Freud was the first person who includes the unconscious mind in a formal psychological theory. Freud believed that all behaviours - whether normal or abnormal - is influenced by psychological motives, often unconscious one. Freud's "Theory of Unconscious Mind" thus has a great value to understand the behaviour especially abnormal behaviour.

Importance of Educational Psychology in Teacher Education

The main focus of the educational psychology course is to help Student Teachers develop their understanding of human behaviour and mental processes within an educational context. The course focuses on acquainting teacher trainees with concepts such as learning, memory, intelligence, and motivation, in order to align their teaching with the psychological needs of students. More specifically, a course in educational psychology is important in the following ways:

i. It helps in formulating training programmes, teaching methods and aids for improving the knowledge and skills of teacher trainees.

ii. Educational psychology helps in acquainting learners with the mechanism of heredity and environment (nature-nurture controversy).

iii. It also deals with the problem-solving process for teacher trainees to develop problem-solving skills amongst learners.

iv. It helps teachers to find causes of prejudices, the habit of sticking to old practices and ways of doing things, the doubts and lack of confidence and factors affecting motivation.

v. It also helps them to know the emotions and feelings of learners.

Chapter Review and Summary of key points

This chapter dwelt on the introductory knowledge of the course on educational psychology which is one of the major branches of psychology like clinical, developmental, industrial, social and experimental psychology. The history of educational psychology was traced from great philosophers like Plato and Dewey. The scientific nature of educational psychology gives it a pride of place among other sciences but while the other general sciences deal with behaviour of individuals in different related spheres, educational psychology studies the behaviour of the individual in educational spheres only. The scope of
A FUNCTIONAL APPROACH TO EDUCATIONAL PSYCHOLOGY

Educational psychology covers the learner, the learning situation and experiences and the teacher as well as a wide dimension of branches. The methods of enquiry used by educational psychologists include experimental studies, surveys, case studies, observations, interviews and correlations. The importance of educational psychology in teacher education programs include among others helping teachers to find causes of prejudices, the habit of sticking to old practices and ways.

Review Questions
1. What is the meaning of educational psychology?
2. What makes educational psychology distinct from other sciences?
3. Identify any five branches of educational psychology
4. Discuss any 3 methods of enquiry used by educational psychologists
5. Justify the inclusion of the course on educational psychology at every level of the teachers’ training program

HUMAN DEVELOPMENT

Introduction
Development can be described as the growth of humans throughout their life span, i.e. from conception to death. The scientific study of human development seeks to understand and explain how and why people change throughout life. This includes all aspects of human growth, i.e. physical, cognitive, emotional, intellectual, social, perceptual and personality development (Cherry, 2016). Development is the process by which organisms grow and change systematically over the entire life period i.e., from conception till death. Developmental changes are not only growth or additions to human organisms, they also involve decay. A child loses the milk teeth in the process of development and an old person may show decay in several areas of functioning. Development involves systematic changes in a direction in all aspects from size and proportion of the body to the ways of thinking, living and feeling. Thus, development is the total process of change in which all aspects of a person are interrelated and integrated.

Development, Growth and Maturation
Development necessarily involves growth. But, growth is simply quantitative addition or change. As we become older, the body size, height, weight, proportion of parts of our body and the appearance of different limbs and parts change in measurable ways. Development involves growth and other qualitative changes. Developmental changes also include changes due to maturation. Maturation on the other hand is the change which is biological in nature and which is due to
our genetic endowment. The genes that we inherit contain blue prints for changes in an orderly and predetermined sequence following a sort of biological clock. Changes like falling of milk teeth, greying of hair, a child's onset of walking, bodily changes during adolescence and even change as in the way we think and understand are affected by our maturational readiness. Our biological system follows a predetermined time table preparing us for developmental changes. Maturational changes in our body or behaviour are primarily due to the aging process rather than learning or other factors such as illness or injury. It is maturation and our experience in the environment that jointly bring about changes in our development.

Continuity and Discontinuity in Development
You may have noticed how a child develops from one day to the next; the process of development seems slow as one may not notice any visible change in a child in a day. Over a longer period however, all human beings change in a regular and continuous manner. In fact, development is both a continuous and discontinuous process. Changes occur gradually in a cumulative manner. Every little change is related in some way to the earlier changes. The first word spoken by a child is related to her earlier babblings and production of sounds of the language that she hears. So a child's first sentence is a continuation of all other earlier developments in respect of language and, at the same time, this is related to subsequent development of complex communication skills and other aspects of mental development later in life. The first step to walk is also connected to earlier physical and motor development of the child. Developmental sequence is interrelated and connected to the earlier changes as well as the changes which are to occur in future; the child does not just start walking in one day.

Continuity in development does not mean that we change in a linear process. Changes do not just continue to occur in a straight line. There are aspects of development which are also abrupt. Hold a month old baby upright with her feet touching the floor. Notice the baby move the feet paddling as she is trying to walk. These muscular movements which closely resemble walking may disappear within two months and reappear when the child actually starts walking at around 9 months of age. There are also sudden changes in the way we think, in our emotions and in many other aspects of our development.

Principles of Human Development
Even though each child is unique, the basic principles of growth and development are universal and orderly. Through careful observation and interaction with children, some researchers were able to identify the principles of child development. Below are the principles of human development outlined by (Jenith, 2015, and Hooper & Umansky, 2013).

1. Development is a product of interaction. Hereditary forces inherent in the genetic constitution of the individual and environmental forces influence the development of the organism (Jenith, 2015). The following principles of human development are by Hooper, and Umansky, (2013).
2. Development tends to proceed from the head downward. This is called the cephalocaudal principle. According to this principle, the child first gains control of the head, then arms, then the legs. Infants gain control of head and face movements within the first two months after birth. In the next few months, they are able to lift themselves up using their arms. By 6 to 12 months of age, infants start to gain leg control and may be able to crawl, stand, or walk.
3. Development also proceeds from the center of the body outward according to the proximodistal principle. Accordingly, the spinal cord develops before other parts of the body. The child's arms develop before the hands and the hands and feet develop before the fingers and toes. Fingers and toes are the last to develop.
Development also depends on maturation. Maturation refers to the sequence of biological changes in children. These orderly changes give children new abilities. Much of the maturation depends on changes in the brain and the nervous system. These changes assist children to improve their thinking abilities and motor skills. A rich learning environment can help children develop to their potential. Children must mature to a certain point before they can gain some skills. Similarly, physical skills develop from general to specific movements. For example, a young infant waves its arms and legs at random, but with time, the infant will possibly be able to grab a piece of paper with his or her whole hand.

Jenith (2015) outlined the following principles of development.

1. Locomotion: Locomotion develops in an orderly manner in all infants around the world. These sequences are creeping, crawling, and walking; the time may vary in the development of these stages for some children, but every infant passes through these stages.

2. Development is a continuous process. Development is a continuous process which begins from the time of conception in the womb of the mother and continues till death. But it should be kept in consideration that it is always smooth and gradual.

3. Different aspects of development are interrelated. Different aspects of development are interrelated and interdependent. Child’s early social behavior is interrelated with his physical development. If the child is physically handicapped, his social behaviors will be affected.

4. Development is individualized process. All individuals develop in their own way. Each child has his or her own rate of physical, mental, emotional and social development. For example, if we observe six-years old children, we find great differences in their height, weight, social, emotional, and learning readiness.

9. Development is cumulative. Development is a cumulative process. The child’s first word, first step are the result of cumulative progress for the child. Each change is the culmination of his prior growth and experience.

10. Rate of development differs in male and female child. There is a difference in the growth rate of boys and girls. Girls mature earlier in comparison to boys. Girls are taller and heavier than boys during pre-adolescence but by the end of adolescence, boys surpass them.

11. Each phase of development has hazards. There is ample evidence that each period in the life span has associated with it certain developmental hazards, whether physical, psychological or environmental in origin.

Human development is governed by certain principles. Knowledge of the principles of growth and development helps us to understand children better. A person who knows these principles will be able to assess children’s development objectively. It also helps us to prepare children ahead of time for the changes that are going to take place in their life. In other words proper child guidance is possible only with the knowledge of principles of growth and development. These principles are discussed below.

i. There are individual differences in development as each child has his own characteristic rate of development; we cannot expect the same behaviour from all children of the same age. E.g. Some children may grow up to 6 feet tall, while others might stop at 5 feet or in between.

ii. Different areas develop at different rates. As children grow each area of development proceeds at its own rate and reach maturity in its own time period. E.g. the heart, liver and digestive organs grow slowly in childhood, but rapidly during the early years of adolescence.

iii. Development is continuous. Development is a continuous process from the time of conception to
A FUNCTIONAL APPROACH TO EDUCATIONAL PSYCHOLOGY

death. It may slow down or speed up at certain times, but it never stops completely at any time, e.g. Physical development is rapid during infancy and adolescent period but slows down during childhood period.

Development is sequential - Development follows an orderly sequence, which in general is the same for most children. Each stage of development leads to the next. There are two basic sequences. First development proceeds from head to toe (Cephalo-caudal) e.g. a child first controls his head, then his trunk (turns) and later his legs (stands). This order of development never changes. Secondly, development proceeds from centre of the body towards outside (proximo-distal). e.g. Child catches a ball first with both his arms, then with palms and later with his fingers.

Development proceeds from general to specific responses - The early responses of the infant are very general in nature as age increases they become more specific. e.g. In early stages of language development, the child uses the word 'toy' before he learns to call each toy by name.

Development is influenced by both heredity and environment - Heredity plays an important part in a child's development. This is evident in many characteristics such as colour of eyes, facial features etc. are passed through the genes from the parent to their children. Environmental factors such as nutrition, motivation, good role model etc. play an important role in the development of child. A child who is not given opportunities to interact with others, generally turns out to be shy and introvert.

Development is predictable - Because the rate of development for each child is fairly constant, we can predict the rate of development to some extent. e.g. Children of tall parents are generally tall.

Many forms of so-called 'problem behaviour' are normal behaviour of the age in which they occur. Each developmental age has certain undesirable forms of behaviour which are normally found at that age and are outgrown as the child passes on to the next stage of development. e.g. Bed wetting during the first year of life is normal but it can become a problem behaviour during early childhood.

Development involves changes - Major changes include change in size, changes in proportion, disappearance of old features and acquisition of new features. Change in size: Each year as child grows his/her height and weight changes. Change in proportion: As the child grows in size changes in proportion also occur. For e.g. at birth head occupies one fourth of the body length. This proportion changes and in adulthood the head occupies one eighth of the body length. Disappearance of old features: Old features disappear or get modified as the child grows. Disappearance of baby hair and baby teeth are a few examples. Acquisition of new features: Among the physical features getting permanent teeth, appearance of primary and secondary sex characteristics are all new features acquired in the process of growth.

Human development constitutes the development of different areas such as physical, motor, language and speech, emotional, social and cognitive developments. By the time the child reaches adulthood, the development of major areas will be completed.

Physical development
Physical development means changes in height and weight and associated changes in size and shape of the body. Physical development influences child's behaviour directly by determining what they can do and indirectly by influencing their attitudes towards self and others. Motor development: Motor development means the development of control over
bodily movements through the co-ordinated activity of the nerve centres, the nerves and the muscles. Motor development is partially responsible for overcoming the helplessness of newborn infants. Language and speech development: The thoughts and feelings can be communicated in any form of language (gestures, emotional expressions, speech or written language) but it is most commonly and most effectively done by speech. Speech is a motor-mental skill. Speech development is the ability to use meaningful words to others and to understand the meaning of words used by others.

Emotional development
Emotions are complex psychological and biological responses to internal and external stimuli. Emotional development can be defined as the ability to express, control, understand and accept one's emotions. All emotions play an important role in children's lives through the influence they have on children's personal and social adjustments.

Social development
Social development means the acquisition of the ability to behave in accordance with social expectations. The change of children into social, non-social or antisocial person depends mainly on learning, not on heredity. Cognitive or intellectual development.

Cognitive development
Is the sum total of sensation, perception and cognition. Sensation means sensing something through sense organs. Perception gives additional meaning to sensing. Cognition is the process of thinking and knowing. The intellectual or cognitive development helps a person to memorize, imagine, communicate, perceive and to solve problems.

Factors Affecting Growth and Development
The factors which affect growth and development can broadly be divided into heredity and environment:

Heredity
Heredity is a biological process through which the transmission of physical and social characteristics takes place from parents to offspring. It greatly influences the different aspects of growth and development, i.e., height, weight and structure of the body, colour of hair and eye, intelligence and aptitude. In short, it is the sum total of all the traits present in an individual at the time of birth. The genes in the chromosomes of the mature sperm cell and the mature ovum carry potential for physical and mental traits. The carrier of genetic determination is chromosome.

Environment
Refers to all the factors except heredity, affecting an organism starting from the moment of conception. Individual's environment consists of the sum total of the stimulations (physical and psychological) which he receives from his conception onwards. The different types of environment are physical, social and psychological environment. Physical environment consists of all outer factors such as food, clothing, shelter, weather and climate. Social environment is constituted by the society-individuals and institutions, social laws, customs by which human behaviour is regulated. Psychological environment is rooted in the individual's reaction with an object. One's love, affection and fellow feeling attitude will strengthen human bonds. Influence of Heredity and Environment on Human Development Every aspect of development is influenced by both heredity and environment. Environment affects a child's personality in many ways. A child absorbs a lot from his parents, home, surroundings, school, friends and the neighborhood. Many traits which are important to personal adjustments may be changed by variations in environment. Heredity provides the raw materials from which a person is made. How he is molded, and what he becomes depend chiefly on environment. Heredity and environment appear to be co-acting influence, and both are essential for development. The colour of a child's hair and eyes,
his physique and strength are inherited, but these are also influenced by climate, diet and disease. Every human being is born with certain muscular and skeletal structures—it is shaped and molded by learning and experiences. Many activities, like writing, throwing a ball, spelling a word etc. are influenced by heredity and environment. Genetic factors have been found more important than environmental factors in some aspects of human development like in determining the age at which first menstruation occurs. Other factors that may affect human development include:

Sex
Sex acts as an important factor of growth and development. There is difference in growth and development of males and females. Whereas boys are generally taller and courageous than girls, the girls may show more rapid physical growth during adolescence.

Nutrition
Nutrition plays an important role in physical as well as mental development. Insufficient diet during the growing period causes the appearance of various deficiency diseases and growth retardation. This condition cannot be rectified with quality diet in later period of life. Thus growth and development of a child mainly depend on his food habit and nutrition.

Glands of internal secretion
Our body functions are regulated by the hormones secreted by various glands. Certain glands of internal secretion play an important role in the development of children. Thyroxin produced by the thyroid gland is essential for the physical and mental development. Deficiency during the growing years results in stunted growth (cretinism). A balance of male hormones control development of masculinity and that of female hormones control it toward femininity. At puberty, sex hormones promote the development of genital organs.

Birth order or position in the family
The position of the child within the family may influence his development more through environmental than through natural factors. The second, third or fourth child within a family generally develops more quickly than the first born, because of the fact that the younger children learn from imitating their elder brothers and sisters.

Maturation and learning
Development is a result of maturational processes and learning encounters. Maturation is the natural unfolding of traits present at the time of birth while learning comes from experiences. Learning helps the child in his physical, mental, emotional, intellectual, and language development. Knowledge and skills, habits, and attitudes of a person help to deal with people.

Physical defects
Physical defects like visual, auditory defects and orthopaedic disabilities affect the normal development of children. The developmental status of a child suffering from a physical defect is usually below that of the normal child. For example blind children are slower in walking, feeding or dressing themselves than children with normal vision.

Emotional factors
Children from broken homes and orphans do not grow and develop to an optimum level. Emotional disturbances, insecurity, sibling rivalry, jealousy, loss of parents, inadequate schooling etc. have a negative effect on growth and development. Some of these factors come under environmental factors and heredity.

With respect to hereditary factors, the most crucial category which adversely affects growth and development is the hereditary disorders. Hereditary disorders are those diseases which are passed on from parents to their offspring through genes. Suffice to identify and expatiate briefly on the features
of such diseases which include haemophilia, sickle cell anaemia, muscular dystrophy, Down’s Syndrome, gout, myopia, diabetes and PKU.

**Haemophilia**
Haemophilia is a condition in which blood does not clot normally. This results in severe bleeding from minor wounds. Medical claims have it that it is always associated with a defective gene. This disease only affects boys, rarely occurs in women a female can be a carrier but can transmit it to the male children.

**Muscular Dystrophy**
Muscular dystrophy (MD) has to do with a group of more than 30 inherited diseases. They all cause muscle weakness and muscle loss. Some forms of muscular dystrophy appear in infancy or childhood. Others may not appear until middle age or later. The different types can vary in whom they affect, which muscles they affect, and what the symptoms are. The different forms of muscular dystrophy grow worse as the person’s muscles get weaker. Most people with muscular dystrophy eventually lose the ability to walk which poses a great challenge for growth and development generally.

**Down’s Syndrome or Trisomy**
An inherited disorder resulting from an extra chromosomal material on pair number twenty one, which causes mental retardation and distinct physical features. Physical features are almond shape of the eye, flattened facial features, poor muscle tone, broad hands, with unusual crease of the palm.

**Phenyl-Ketonuria (PKU)**
Phenyl-ketonuria is a metabolic disorder, in which phenylalanine, an amino acid in milk and high protein foods such as meat cannot be metabolized normally by the liver. As a result, phenylalanine and other metabolic products accumulate in the blood, the nervous system becomes deprived of enough nutrients and severe mental retardation occurs.

**Gout**
Gout is caused by a build-up of uric acid in the blood. Uric acid is a waste product that forms in the body every day and excreted mainly through kidneys. It forms when the body breaks down chemicals in the cells known as purines. If too much uric acid is produced or too little is excreted while urinating, the uric acid builds up and may cause the formation of tiny crystals in and around joints. They accumulate in the joints or surrounding tissue and cause pain, inflammation and swelling. Purines can be found naturally in the body, as well as in food, such as fish, caffeine, organ meats, beef, fried foods, soda, rich sauces, shell fish and fruit juice.

**Sickle Cell Anaemia**
Sickle Cell Anaemia is a genetically inherited disorder in which red blood cells become sickle shaped rather than doughnut shape. Sickle shaped cells cannot transport oxygen to various parts. They live only for a short duration than normal blood cells (RBC) more over bone marrow cannot replace them. When the sickle shaped cells block small blood vessels it leads to anaemia, jaundice, low resistance to infection and susceptibility to severe pain, and damage to various body organs.

**Diabetes**
Diabetes is a metabolic disorder in which the person has high blood glucose (blood sugar) either because insulin production is inadequate or because the body’s cells do not respond properly to insulin or both. The normal blood sugar level is 80-120 mg/dl.

**Myopia or Short-Sightedness**
Myopia is a very common eye condition that causes distant object to appear blurred, while close objects are seen clearly. It is a refractive error of the eye, a condition where the light that comes in does not directly focus on the retina but in front of it.
Stages and Developmental Tasks

When you examine the sequence of changes over the entire life span you may find broad patterns in different phases of life. For example, a baby shows patterns of behavior which are different from a young adult who, in turn, is different from an old person. Although changes are very slow and unnoticeable from one day to the next, Development proceeds through different phases which exhibit typical patterns. Across the life-span, we develop in stages and these stages are broad patterns of development characterized by some dominant features. In each stage of development a person shows typical capabilities, patterns of behavior and characteristic modes of functioning. These, in turn, make the person ready to face typical challenges and events in life. Developments in early childhood prepare the child for formal education, and the individual for marriage and family roles. Life events, such as school-going, marriage, job and social expectations of an individual vary from one stage to another. In order to face these challenges, for different life events and to meet the social demands or expectations, a person must accomplish the required skills or reach the expected level of development. As a result, each stage of development involves different developmental tasks. The way one looks at the stages of development and the developmental tasks may vary from one society to another depending on how one conceptualizes human development and goals of life. Some of the important features of stages are as follows.

1. Each stage of life is based on the developments up to the previous stage and is also a preparation for the next phase of life. Thus, each stage shows consolidation of previous developmental changes and a preparation for development during the future stages of life.

2. Within a person, the rate of development of different aspects of his/her functioning varies from one stage to another. For example, growth of brain cells and physical motor skills are much faster during infancy compared to adulthood.

Pre-natal Stage

The developments from conception till the birth of a baby constitute the prenatal stage. The approximate period of prenatal development is taken to be 9 calendar months or 10 lunar months (i.e., 280 days), although babies are not born exactly after 280 days of conception. Biologically it takes about 266 days from conception for a fetus to become ready for the birth process. Actual birth of normal full term baby may take place any time after that. Prenatal stage is further divided into three phases. The first phase - the germinal period - is the period from conception until implantation. Conception occurs when a sperm penetrates the wall of a ripened ovum forming a zygote. In about 8-14 days, the zygote gets firmly attached to the wall of the mother's uterus. This is called implantation which brings the germinal period to an end. The second phase of prenatal development is the period of the embryo which lasts from the beginning of the third week to the end of the eighth week. During this time all major organs are formed and the heart begins to beat. The third phase is the period of the foetus which lasts from the third prenatal month until the baby is born. The major organ systems begin to function and the growth of the organism is quite rapid.

Infancy

The period from birth to two years constitutes the infancy stage of life. During the prenatal period the foetus faces the task of preparing itself for the birth process and to overcome the odds against normal development. Thus, the new born baby has the capacity for all life sustaining activities such as breathing, sucking and swallowing, and discharging bodily waste. The neonate (birth to one month) also displays several reflexes as
well as skills which help the process of development. The newborn infant responds to pressure or touch on the cheek by turning the head towards the touch and opening the mouth. This automatic and involuntary response or reflex, known as rooting reflex, helps the baby feed from the mother’s breasts or a nipple by orienting her to the breast or bottle. Feeding is further facilitated by sucking reflex by which the neonate sucks on objects placed into the mouth. The rooting reflex disappears over the first few weeks of life and is replaced by voluntary head turning. The sucking reflex is also gradually modified over the first few months of life as sucking comes under voluntary control. Among many other reflexes, full term neonates display swimming reflex of active movements of the arms and legs and involuntary holding of breath when immersed in water. The swimming reflex keeps the infant floating in water for some time. Although this reflex disappears in the first 4-6 months, some swimming instructors have used this reflex to teach infants preliminary swimming long before they can walk. Much before birth, the foetus responds to sounds and within few hours after birth, the neonate can discriminate between different sounds of language (e.g. /ba/ and /ga/ sounds) and between mother’s voice and other human voice. This shows that human infants are remarkably well prepared to receive spoken language and learn the same. During infancy, the physical and motor development is quite rapid. Primarily due to maturation, children show regularity in development of locomotion and motor skills. They are able to raise their head by about 2 months, sit with support by 4 months, walk with support by 9 months and walk on their own by 10-12 months. The rate of growth is very rapid during the first two years. A normal two-year-old infant grows to a height which is almost half of the adult height and the birth weight increase nearly four times by that age. The body proportion also changes dramatically from birth till adulthood. The head of a newborn baby is nearly one fourth its body length, almost as long as the legs. But, at adulthood, the length of the head is about 12% of adult height whereas legs account for 50% of total height.

The Loco-motor Development during infancy

This development proceeds in a cephalo-caudal direction. This means that motor activities involving upper extremities, (that is the head and neck regions) develop earlier than those involving legs and lower extremities. Another pattern of motor development is called proximo-distal pattern according to which development is faster in the region closer to the centre of the body i.e. the trunk and shoulders compared to the outward extremities like hands and feet. Thus, a baby develops control over arms much earlier before developing control over finger movements. The overall development of motor skills and its sequence can be viewed as result of genetically programmed sequence of maturation. But, practice also plays a crucial role in the development of motor skills. During infancy, initially the child tries to gain control over simple movements and then to coordinate visual and motor movements for more complex and coordinated movement. However, a two-year-old is somewhat crude in terms of his/her loco-motor skills typified by the fact that they are:

i. able to form permanent image of objects in their mind
ii. able to remember their experiences, movements and information about objects and people
iii. able to differentiate between familiar people and strangers
iv. able to express various emotions such as happiness, anger and fear
v. able to communicate with gestures and verbal expressions using single words and two-word utterances.

Early Childhood

Broadly the early childhood period covers the period from 2 to 6 years of age. This is the time during which the child who has started walking is able to widen the sphere of his/her activities beyond the caregivers and the family. Through interaction with the wider society and the environment the child learns the rules of appropriate social behaviour and
develops mental abilities which prepare him/her for formal
education and schooling. In the preceding stage, most children
between 1-2 years also called toddlers appear to be quite
cumbersome in their movements and physical motor activities. But
as children mature their locomotion skills become refined and
graceful. The body balance during walking and running
improves noticeably. A 3-year-old can run in a straight line
and can jump smoothly without falling down while a 4-year­
old can skip, jump on one foot and catch a large ball thrown
from a distance. By the age of six, the child has physical
capability for coordinated actions which require maintaining
body balance. Small muscles coordination required for fine
motor activities such as putting in shirt buttons or copying a
simple figure improve quite dramatically during the early
childhood years.

Capacity for sustained attention also continues to improve
during the early childhood through the middle childhood and
early adolescent years. A 3-year-old child may persist on a
task such as colouring, playing with toys or watching TV for
no more than 15-20 minutes at a stretch, whereas by the 6th
year the same child can work on some interesting tasks for
even longer than an hour. This may be due in part to
maturational changes in the central nervous system. An area
of the brain called reticular formation (which is responsible
for regulation of attention) continues to develop until puberty.
Children also become more selective in their attention. They
are able to concentrate and focus on relevant aspects of the
total stimulation ignoring irrelevant or distracting stimuli. As
children become more attentive, their perceptual skills or ability
to identify finer aspects of objects also improves.

Middle Childhood
As children reach the age of schooling, growth becomes more
gradual and rate of physical change becomes slower until
puberty at about 11-13 years when there is again a rapid
‘growth spurt’. However, during the middle childhood years,
eye-hand and small muscle coordination continues to develop.

Physical activities become more vigorous as children can now
run faster and jump higher while being more responsive to
stimuli. This makes them more proficient at action games. With
the improvements in small muscle coordination, 6-7 year-old
children can copy complex figures (such as a diamond), colour
patterns and figures and assemble tools and model toys. At
this stage children also become more skilful in using tools and
at games requiring skilful eye-hand coordination such as
throwing, catching and hitting targets.

Mental capacity of children also shows significant
improvement during the middle childhood years. Their
thinking becomes more logical and systematic particularly in
respect of concrete objects, events and experiences but not in
abstract situations yet because they may not follow through
with logical principles yet. Middle childhood years are also
the time for quest for knowledge and mastery.

Memory and conceptual knowledge may also improve to
facilitate logical thinking beyond the immediate situation.
Children can also engage in aesthetic activities such as music,
art and dance and develop hobbies of their own. School age
children have learned most of the social standards regarding
sex-roles and accept their gender as an unchangeable aspect of
themselves and their personality.

Children’s cognitive process continues to change during the
early childhood period. Children become increasingly
proficient in symbolic thought or in using symbols such as
words and images to represent a variety of objects, situations
and events. By the age of entry to schools, children do have a
reasonably good understanding of their environment and
people. Children at this stage have good capacity for learning
languages and when they are exposed to multiple languages,
such as when they hear one language at home and another
outside they grow up as bilingual or multilingual children
(depending on the number of languages they can use). These
children are cognitively more proficient and have a better
understanding of language compared to monolingual children
(who use only one language). The early childhood is a crucial
period of development because it is a period of rapid socialisation, during which children learn a great deal about the norms, conventions and practices in their families and society. Through interaction with parents, grandparents, siblings, family members, other adults and their peers, children acquire the social and cultural norms or learn the culture to which they belong.

**Adolescence**

Adolescence is a period of transition from childhood to adulthood and a period of great significance in human development. It is the period from the onset of puberty till attainment of adulthood. Puberty marks the beginning of sexual maturity and reproductive capacity of an individual. The adolescent period is characterised by rapid biological and physical changes which are associated with many psychological challenges. Biologically, puberty is associated with release of sex hormones by the pituitary gland—estrogens or the female sex hormones and androgens or male sex hormones. These hormones and other biological factors are responsible for a growth spurt or rapid physiological changes as well as beginning of primary and secondary sexual characteristics. The primary sex characteristics, such as ovulation and menstruation among the girls and production of semen among the boys, are directly related to reproduction and primary sex organs. The secondary sexual characteristics are associated changes visible on the body such as development of breast among the girls, beard among the boys and growth of underarm and pubic hair among the boys as well as girls.

Physically adolescents show a sudden and rapid growth or a growth spurt. During a period of about nine years (from 10 to 19) boys gain over 36 cms in height and 25 kgs in weight where girls may gain over 24 cms in height and 21 kgs in weight. By the end of adolescence growth spurt, 98% of adult growth is achieved.

**Early Adulthood**

The period from the end of adolescence from 19 (approximately between 19 and 35) years of age is generally viewed as the early adulthood period. This is the period when social roles and relationships are materialised. The young adult becomes a fully functioning social being assuming the role of a married family person and developing intimate social and sexual relationships. Although most of the physical growth is over by the end of the teen age, some aspects of developments do occur during the early adulthood. These are mostly related to the process of slow decline with the aging process. For example, lenses of the eyes begin to lose flexibility and tissues supporting the teeth weaken. Reaction time, strength of the body muscles and capacity of the sense organs reach their peak during the twenties and decline by the mid-thirties. On the whole, physical change is less dramatic and slow during this stage of life.

**Middle Adulthood**

The period of life from about thirty five years of age to sixty is viewed as the mid-life during which people become aware of some decline in their physiological functions. Muscular strength and performance of major organ systems such as digestive and circulatory systems deteriorate. Middle adulthood is characterized by some dramatic changes in the functioning of reproductive system and sexual activity. Also termed as the climacteric period the middle adulthood is the period when women experience menopause or cessation of menstrual cycle specifically between the late forties and the early fifties. For males, climacteric period involves reduction in sex hormones and reduced functioning of the prostrate gland all of which may result in reduced sexual drive.

There are also some cognitive changes during the adulthood. Short-term memory does not decline with age, but recall of information from long-term memory may decline. Changes in intelligence are minimal, but they are compensated for by increase in wisdom and creativity. Midlife adults become more proficient in solving real life problems due to accumulation of experience.
Old Age
The period of life from the sixties till death is the period of old age. However, with increasing life expectancy and longer work period there is a delayed onset of the actual feeling of old age. Besides retirement from active work life, the old people have to cope with many other challenges such as their own declining physical fitness, ill health, death of near ones in the family including possible loss of spouse and loneliness. As people grow old, body metabolism changes and there are wear-and-tear of the body parts and cells. There are also genetically determined changes in the biological clock in the body that limit the length of our lives.

As individuals approach the closing phase of life, there is also an appraisal of the extent to which their lives have become meaningful and worthwhile. According to Erickson, those who evaluate their life positively attain a sense of integrity and do not usually have much anxiety over death. Otherwise, old people may experience a sense of despair over not having been able to contribute much to the society and the limited time that is left for them to do something. Erickson characterizes this crisis as one of integrity and despair. There are wide individual variations in the way old people prepare to face death and other challenges of old age.

Chapter Review and Summary of Key Points
We have seen that:
• Development involves systematic changes throughout the entire life period.
• Developmental changes are interrelated.
• Development proceeds in a definite direction.
• Human development throughout life is broadly a continuous process with some discontinuities and abrupt changes.
• Human development is an organized and orderly sequence.
• Growth is quantitative change.
• Development involves growth and qualitative change.
• Maturity is a genetically programmed sequence of change.

Review Questions
1. List the factors affecting growth and development
2. Write a short note on
   a. Haemophilia
   b. Sickle cell anaemia
   c. Phenyl ketonuria
   d. Muscular dystrophy
3. What do you mean by heredity and environment?
4. Distinguish between maturity, growth and development.
5. Discuss the stages and tasks of human development.
LANGUAGE DEVELOPMENT

Introduction
Language is an interpersonal means of communication involving the thoughts of more than one person at a time; the essence of language is to express meanings to others. Language is one of the most significant cognitive achievements of the human race. It is also a symbolic code used in communication.

Language Defined
Language is a means of communicating thoughts and feelings using a system of socially shared but arbitrary symbols such as: sounds, signs, or written symbols arranged according to rules or grammar. It is the process by which children come to understand and communicate language during early childhood (Gilles, 1999). Language development involves speech formation and increasing dexterity at the use of human language for communication, orally, non-verbally and in writing. The manner of development may not be significantly from one language to another.

Language Development in Children
Gilles (1999) stated that the development of language skills in children is a process that starts at birth and continues for several years mostly during the first five years of a child's life. In these early years, the brain is rapidly developing as it takes in and attempts to make sense of many sights and sounds. These sounds, which include listening to the speech and language patterns of caregivers and others are important in the development of the child's language skills. Language and communication skills are critical to a child's development. Good communication makes them better able to engage in socialization and to learn from their environment and from formal classroom instruction.

The first five years are most critical but language development continues throughout early childhood and into adolescence. During the first five years, stimulation of language development is important as the brain is both developing new nerve cells. Language development therefore reflects the growth and maturation of the brain. The stages of language development are universal among humans. However, the age and the pace at which a child reaches each stage of language development vary greatly among children.

Elements of Language
Language is something we continue to learn throughout our lives. It is also crucial to many aspects of learning and socialization. Three different aspects of language have been identified by Ramey and Ramey (1999), these are:
1. Receptive language development
2. Expressive language development
3. Pragmatic language development
4. Receptive language development.

This is what infants understand from the language of others, i.e. the ability to comprehend language, this usually develops faster than expressive language. Encyclopedia of Children Health (2016) discusses the stages of receptive language development in Children.

Infancy
Language development begins before birth. Towards the end of pregnancy, a fetus begins to hear sounds and speech coming from outside the mother's body. Infants are acutely attuned to the human voice and prefer it to other sounds. In particular they prefer the higher pitch characteristic of female voices. From birth to three months of age, most infants acquire the
Following:

a. Seems to recognize their mother's voice
b. Quiet down or smile when spoken to
c. Turns toward familiar voices and sounds
d. Makes sounds indicating pleasure cry differently to express different needs
e. Grunts, chuckle, whimper, and gurgle
f. Begins to coo (repeating the same sounds frequently) in response to voices
g. Makes vowel-like sounds such as "ooh" and "ah"

From three and six months, most infants can do the following:

- Turn their head toward a speaker,
- Watch a speaker's mouth movements,
- Respond to changes in a tone of voice,
- Make loud sounds including screeches,
- Vocalize excitement, pleasure, and displeasure,
- Cry differently out of pain or hunger,
- Laugh, scream, and sigh
- Sputter loudly and blow bubbles,
- Shape their mouths to change sounds,
- Vocalize different sounds for different needs,
- Communicate desires with gestures, babble for attention.
- Mimic sounds, inflections, and gestures.
- Make many new sounds, including "p," "b," and "m," that may sound almost speech-like
- The sounds and babblings of this stage of language development are identical in babies across the world irrespective of language affiliation.
- Between six and nine months, children begin to do the following:
- Listen intently to speech and other sounds
- Take an active interest in conversation even if it is not directed at them
- Recognize some common words like "dada," "mama," "bye-bye"

**Toddlerhood**

During the second year of life, language development proceeds at very different rates in different children. By 12 months, most children use "mama/dada" correctly. They add new words each month and temporarily lose words. Between 12 and 15 months children begin to do the following:

- Recognize names
- Understand and follow one-step directions
- Laugh appropriately
- Use four to six intelligible words, usually those starting with "b," "c," "d," and "g," (although less than 20
percent of their language is comprehensible to others as they gesture and say "no"

Ask for help with gestures and sounds

At 15 to 18 months of age children do the following:
- Understand "up," "down," "hot," "off"
- Use 10 to 20 intelligible words, mostly nouns
- Use complete words
- Put two short words together to form sentences
- Chatter and imitate, use some echolalia (repetitions of words and phrases)
- Have 20 to 25 percent of their speech understood by outsiders

At 18 to 24 months of age toddlers come to understand that there are words for everything. At this age children usually have 20 to 50 intelligible words and can do the following:
- Follow two-step directions
- Point to parts of the body
- Attempt multi-syllable words
- Speak three-word sentences
- Ask two-word questions
- Enjoy challenge words such as "helicopter"
- Hum and sing
- Express pain verbally
- Have 50 to 70 percent of their speech understood by outsiders

Between two and three years of age relatively normal children acquire:
- A 400-word vocabulary including names
- A word for almost everything
- The use of pronouns
- Three to five-word sentences
- The ability to describe what they just saw or experienced truthfully

The use of the past tense and plurals
Names for body parts, colors, toys, people, and objects
The ability to repeat rhymes, songs, and stories
The ability to answer "what" questions

Children constantly produce sentences that they have not heard before, creating rather than imitating. This creativity is based on the general principles and rules of language that they have mastered. By the time a child is three years of age, most of a child’s speech can be understood.

Pre-school
Three to four-years-old usually can do the following:
- understand most of what they hear
- converse in simple, less complex ways
- have 900 to 1,000-word vocabularies, with verbs starting to predominate
- would usually talk without repeating syllables or words
- use pronouns correctly
- use three to six-word sentences
- ask questions
- relate personal experiences and activities
- tell stories (Occasional stuttering and stammering)

Between four and five years of age, children of this age can do the following:
- verbalize extensively
- communicate easily with other children and adults
- articulate most English sounds correctly
- know between 1,500 to 2,500 words
- can use detailed six to eight-word sentences
- can repeat four-syllable words
- can use at least four prepositions
tell stories that stay on topic
- can answer questions about stories
School age
At age five most children can do the following:
- follow three consecutive commands
- talk constantly
- ask innumerable questions
- use descriptive words and compound and complex sentences
- know all the vowels and consonants
- use generally correct grammar

Six years old usually can correct their own grammar and mispronunciations. Most children double their vocabularies between six and eight years of age and begin reading at about age seven.

Expressive Language
This is how babies learn how to speak and communicate to others. Bowen (1998) discusses the characteristics of expressive language exhibited by children at different stages of development.

At 0-3 months
Newborn babies make sounds that let others know that they are experiencing pleasure or pain. Your baby smiles at you when you come into view. He or she repeats the same sound a lot and "coos and goos" when content. The baby uses different types of cry for different situations. For example, one cry says "I'm hungry" and another says "I have a pain" and another, am too wet or hot for comfort.

From 4-6 months
Gurgling sounds or "vocal play" occur while you are playing with the baby. Babbling really gets going in this age range, and the baby will sometimes sound as though he or she is "talking". This "speech-like" babbling includes many sounds including the bilabial (two lip) sounds "p", "b", "w" and "m", babies can use sounds, gestures or can make very "urgent" noises to spur the mother into action.

From 7-12 months
The sound of the baby's babbling changes. This is because it now includes more consonants, as well as long and short vowels. He or she uses speech or other sounds (i.e., other than crying) in order to get the mother's attention and hold on to it. At this stage, the baby's first words (probably not spoken very clearly) have appeared! ("MaMa", "Dadi", "Bye Bye", "No") and so on.

Between 1-2 years
Now the baby is accumulating more words as each month passes. He or she will even ask 2-word questions like "Where ball?" "What's that?" "What that?". Words are becoming clearer as more initial consonants are used.

From 2-3 years
At this stage the vocabulary of the child is exploding! He or she seems to have a word for almost everything. Utterances are usually one, two or three words long and family members can usually understand them. Here, the child may ask for, or draw your attention to something by naming it ("Elephant") or one of its attributes ("Big!") or by commenting ("Wow!").

From 3-4 years
Sentences are becoming longer as the child can combine four or more words. He or she talks about things that have happened away from home, and is interested in talking about pre-school, friends, outings and interesting experiences. Speech is usually fluent and clear and "other people" can understand what your child is saying most of the time.

By 4-5 years
At this stage, the child speaks clearly and fluently. He or she can construct long and detailed sentences, and can tell a long imaginative story using "adult-like" grammar. Most sounds are pronounced correctly, though he or she may be lisping as a four year old, or, at five, still have difficulty with "f", "v"
and "th". The child can communicate easily with familiar adults and other children. He may tell fantastic, dramatic, creative stories and engage strangers in conversation when they are out together with parents or caregivers.

Pragmatic language
Ramey and Ramey (1999) stated that Pragmatic language is the subtle facets of language i.e facial expressions, body movements, tone, volume, ideas about when to speak and for how long. These additions are the amplifiers and fine-tuners of communication. They help infants and all of us to better express what we mean, and to understand what others are telling us. Infants vary greatly in their linguistic styles and how they learn to receive, use, and even invent language.

Stages of Grammar Development in Children
Children do not learn how to speak properly overnight, but the process of grammar development is slow and continuous. No two children are the same, there is a general grammar sequence that children follow. As they move through the stages of grammar development, they become more and more proficient at speaking in proper English. Below are the stages of grammar development in children by Schreiner:

Stage 1
Children generally begin speaking in recognizable words between 9 months and 1 year old. At this stage, they speak single words, and the words that children learn within this age span are predominantly nouns.

Stage 2
Between age 1 and 2 years, children develop the ability to speak in two-word sentences. These sentences are often not grammatically correct, sometimes consisting of two nouns, and other times a noun and a verb. Example, ("Want biscuit," "Want water."). This are common examples of age 1 and 2 years sentences.
rules or grammar. The development of language skills in children is a process that starts at birth and continues for several years, mostly during the first five years of a child's life. In these early years, the brain is rapidly developing as it takes in and attempts to make sense of many sights and sounds. Three different elements or aspects of language are identified, these are: Receptive language development, Expressive language development and Pragmatic language development. Also discussed are the stages of grammar development in children respectively.

Review questions
1a. Define language and language development in children
b. Explain the three elements of language
2. Discuss the seven stages of grammar development in children

MOTIVATION AND EMOTION

Introduction
Cherry (2013), described Motivation as the force that initiates, guides, and maintains goal-oriented behaviors. It is what causes us to take action, whether to grab a snack to reduce hunger or enroll in College to earn a degree. Motivation involves goals and requires activity. Goals provide the drive for and the direction of action. While action entails effort, persistence is in order to sustain activity for a long period of time. Motivation leads to increase effort, initiation, persistence, cognitive processing and improved performance.

Types of Motivation
Kirk (2015) identified two basic types of motivation - intrinsic and extrinsic as:

Intrinsic motivation
Intrinsic motivation arises from within, it is a desire to learn a topic due to its inherent interests, for self-fulfillment, enjoyment and to achieve a mastery of the subject. Intrinsic motivators have interest in the subject and its relevance to life and the world, a sense of accomplishment in mastering it, and a sense of calling to it. Students who are intrinsically motivated might say things like the following: "Literature interests me." "Learning maths enables me to think clearly." and "I feel good when I succeed in class." Intrinsic motivation can be long-lasting and self-sustaining.

Extrinsic Motivation
This is the motivation to perform and succeed for the sake of
accomplishing a specific result or outcome. Students who are very grade-oriented are extrinsically motivated, whereas students who seem to truly embrace their work and take a genuine interest in it are intrinsically motivated. Extrinsic motivators include parental expectations, expectations of other trusted role models, earning grades. Students who are extrinsically motivated might say things like the following: "If I fail chemistry, I will lose my scholarship." "Our teacher will give us biscuits if we do well on today's quiz."

Theories of Motivation
Researchers have developed a number of different theories to explain motivation.

Incentive Theory of Motivation
The incentive theory suggests that people are motivated to do things because of external rewards. For example, you might be motivated to go to work each day for the monetary reward of being paid. Behavioral learning concepts such as association and reinforcement play an important role in this theory of motivation (Boundless Psychology 2015).

Drive Theory of Motivation
According to the drive theory of motivation, people are motivated to take certain actions in order to reduce the internal tension that is caused by unmet needs. For example, you might be motivated to drink a glass of water in order to reduce the internal state of thirst. This theory is useful in explaining behaviors that have a strong biological component, such as hunger or thirst. The problem with the drive theory of motivation is that these behaviors are not always motivated purely by physiological needs. For example, people often eat even when they are not really hungry.

Hierarchy of Needs by Abraham Maslow
What motivates behavior? According to humanist psychologist Maslow (1943), our actions are motivated in order to achieve certain needs. This hierarchy suggests that people are motivated to fulfill basic needs before moving on to other more advanced needs. As a humanist, Maslow believed that people have an inborn desire to be self-actualized, to be all they can be. In order to achieve this ultimate goal, however, a number of more basic needs must be met first such as the need for food, safety, love, and self-esteem. This hierarchy is most often displayed as a pyramid.

Maslow's Hierarchy of Needs

Explanation of Levels of the Hierarchy of Needs by Abraham Maslow

Physiological Needs
These include the most basic needs that are vital to survival, such as the need for water, air, food, and sleep. Maslow believed that these needs are the most basic and instinctive needs in the hierarchy because all needs become secondary until these physiological needs are met. We need food and water to survive. We also need to breathe and maintain a stable body temperature. In addition, we need adequate shelter and
clothing. Maslow also suggested that sexual reproduction was a basic physiological need.

Security Needs
These include the needs for safety and security; they are important for survival, but they are not as demanding as the physiological needs. Now that the basic survival needs have been fulfilled, people begin to feel that they need a safe place to live, financial security, physical safety, and staying healthy.

Social Needs
These include needs for belonging, love, and affection. Maslow described these needs as less basic than physiological and security needs. Relationships such as friendships, romantic attachments, and families help fulfill this need for companionship and acceptance, as well as involvement in social, community, or religious groups.

Esteem Needs
After the first three needs have been satisfied, esteem needs becomes increasingly important, these include; personal worth, social recognition and accomplishment. People often engage in activities such as going to school, playing a sport, enjoying a hobby, or participating in professional activities in order to fulfill this need. Satisfying this need and gaining acceptance and esteem helps people become more confident. Failing to gain recognition for accomplishments, however, can lead to feelings of failure and frustration.

Self-actualizing Needs
Self-actualizing people are self-aware, concerned with personal growth, less concerned with the opinions of others, and interest fulfilling their potential.

Implication of Maslow's Theory in the Classroom
i. Teachers should protect their Students/Pupils whenever they run to them.
ii. Teachers should give Students the opportunity to realize their potentials.
iii. Group learning can help students to socialize.

Promoting motivation in the classroom
Bain, Delong and Winter in Pyle (2007) outline how motivation can be promoted in the classroom:
- Give frequent, early, positive feedback that make students' believe that they can do well.
- Ensure opportunities for students' success by assigning tasks that are neither too easy nor too difficult.
- Help students find personal meaning and value in the material.
- Create an atmosphere that is open and positive.
- Help students feel that they are valued members of a learning community.
- Make it real. In order to foster intrinsic motivation, try to create learning activities that are based on topics that are relevant to your students' lives, i.e. local examples.
- Use peer models. Students can learn by watching a peer succeed at a task, i.e. someone who the student identifies with, not necessarily any other student.
- Establish a sense of belonging. Research shows that students who feel they 'belong' have a higher degree of intrinsic motivation and academic confidence.
- Adopt a supportive style. Supportive teacher behaviors include listening, giving hints and encouragement, being responsive to student questions and showing empathy.
- Strategize withstruggling students. Teach struggling students how to learn by outlining specific strategies for completing an assignment, note-taking or reviewing for an exam.
- Become a role model for students. Deliver your presentations with energy and interest.
- Get to know your students. You will be able to better tailor your instruction to the students' concern by
displaying a strong interest in their learning.

Use examples freely. Many students want to be shown why a concept or technique is useful before they want to study it further.

Set realistic performance goals and help students achieve them by encouraging them to set their own reasonable goals.

Place appropriate emphasis on testing and grading. Tests should be a means of showing what students have mastered, not what they have not.

Be free with praise and constructive in criticism. Negative comments should pertain to particular performances, not the performer.

Give students as much control over their own education. Let them choose project topics that interest them. Assess them in a variety of ways (tests, projects, presentations).

Emotion
The Wikipedia (2015) define Emotion as a state of feeling that results in physical and psychological changes that influence our behavior. It can also be defined as a “positive or negative experience that is associated with a particular pattern of physiological activity.” Emotion is also linked to behavioral tendency. Extroverted people are more likely to be social and express their emotions, while introverted people are more likely to be more socially withdrawn and conceal their emotions. Emotion is often the driving force behind motivation, positive or negative. The classroom is an emotional place, academic activities and attainments often arouse intense emotions. Relevant achievement emotions include positive emotions such as enjoyment of learning, hope, and pride, as well as negative emotions such as anger, anxiety, shame, or boredom in class. Due to the interactive nature of classroom settings, social emotions such as admiration, contempt, or envy can also play a major role in these settings.

Classroom Applications
Here are some general applications of emotions to the classroom by Sylvester (1994):

1. Emotions simply exist; we don’t learn them, therefore, teachers should seek to develop forms of self-control among students.
2. When there is tension in the class, allow students to express themselves.
3. Activities that emphasize social interaction that engage the entire body tend to provide the most emotional support, such as: games, discussions, field trips, interactive projects, cooperative learning, physical education and so on.
4. Well-structured instruction and clear explanations likely contribute to adaptive student emotions by raising their competencies and feelings of control.
5. Teachers’ interest in students can facilitate students’ adoption of positive emotions.
6. Feedback and consequences of test and exams achievement will reduce tension and anxiety among students.
7. Success experiences likely strengthen positive emotions, whereas repeated failure can undermine subjective control and, therefore, instigate negative emotions.
8. Providing success experiences, defining mistakes as opportunities for learning rather than as personal failure.
9. A positive mood can enhance students’ motivation to approach learning tasks, whereas a negative mood can trigger mood-congruent avoidance motivation.

Chapter Review and Summary of key points
Motivation is a force that initiates and maintains goal-oriented behaviors. It is what causes an individual to take action. However, an individual can either be intrinsically motivated or extrinsically motivated. Psychologist Abraham Maslow is of the opinion that an individual can only be motivated to
move to the next level of life if only his lower level needs are met. Teachers should therefore maintain motivation in the classroom so as to enhance learning. Emotion is a state of feeling that could result in physical and psychological changes that influence one’s behavior. Emotion is often the driving force behind motivation, positive or negative. The classroom is an emotional place, academic activities and attainments often arouse intense emotions. Since Emotions simply exist; therefore, teachers should seek to develop forms of self-control among students.

Review Questions
1. Define Motivation and explain the two types of Motivation
2. Explain Abraham Maslow’s hierarchy of needs
3. How can a Teacher encourage motivation in the classroom
4. The classroom is an emotional place, Discuss.
5. How can emotion be applied in the classroom?

PERCEPTION

Introduction
Perception originates from the Latin word, percipere or percipio which means the organization, identification, and interpretation of sensory information in order to represent and understand the environment. It is the process in which sensory experiences are organized and made meaningful from a wide array of stimuli that bombard our senses. Lefton (1979) puts forward a more embracing definition accepted in perception wherein he defines psychology as the process by which we attach meaning to stimuli by interpreting our sensory input through complex processing mechanisms. Westen (1996) sees perception as the process by which the brain selects, organizes and interprets sensations/stimuli. All perception involves signals in the nervous system, which in turn result from physical or chemical stimulation of the sense organs. For example, vision involves light striking the retina of the eye, smell is mediated by odor molecules, and hearing involves pressure waves.

Perceptual mechanisms
There are a number of perceptual systems derived from the sensory systems and these are:
1. The visual system- structure-eye
2. Auditory system- structure ear
3. Taste system- structure tongue
4. Touch system- structure skin
5. Smell system- structure nose
6. Motor systems- structure muscles, nerves, bones
Of all these the visual system gets the most attention due to the fact that there is more data concerning vision and vision takes precedence over the others. The perceptual systems of the brain enable individuals to see the world around them as stable, even though the sensory information is typically incomplete and rapidly varying. Human and animal brains are structured in a modular way, with different areas processing different kinds of sensory information. These different modules are interconnected and influence each other. For instance, taste is strongly influenced by smell.

Organization of Perception
When we perceive stimuli we strive to organize them into meaningful patterns by selecting what we need, ordering it and integrating it in meaningful ways. This is based on the principle put forward by Gestalt psychologists who hold that "the whole of anything is better or more than the sum of its parts." The Gestalt psychologists thus developed and emphasize basic principles by which people organize their environment; they hold that some perceptual principles are even innate. These principles are organized into six categories.

The Principle of figure and ground
States that, in perception a primary target is selected as the figure against a background, here the figure appears to be better defined than the more diffused ground. The figure below can be perceived more prominently as a per of bottles even though the more diverse ground can also be conjured as a chalice or wine glass.

Figure 1: In the diagram above two patterns can be seen depending on how one perceives the stimulus to which is the figure and which is the background.

The principle of similarity
States that, perception lends itself to seeing stimuli that physically resemble each other as part of the same object, and stimuli that are different as part of a different object. In the diagram below we can perceive three columns, one of triangles, one of circles and one of squares.

Figure 2: Grouping according to similarity (Umeano, 1999)

The principle of proximity
States that, all else being equal, perception tends to group stimuli that are close together as part of the same object, and stimuli that are far apart as two separate objects. Items that are near each other tend to be grouped as a unit. Thus in the illustration below, we can see three rows of triangles rather than six columns.

Figure 3: Perceiving according to distance between objects adopted from Umeano (1999)
The principle of closure
Refers to the mind's tendency to see complete figures or a form even if a picture is incomplete, partially hidden by other objects, or if part of the information needed to make a complete picture in our minds is missing. Even if a stimulus is incomplete our minds tend to bring it to a complete percept by 'filling in' the missing elements as shown below.

The principle of good continuation
Makes sense of stimuli that overlap: when there is an intersection between two or more objects, people tend to perceive each as a single uninterrupted object.

The principle of good form
Refers to the tendency to group together forms of similar shape, pattern, color, etc. Later research has identified additional grouping principles.

Perceptual Constancies and Perceptual Illusions
Perceptual constancy is the ability of our perceptual system to recognize that an object remains the same or constant in size and shape regardless of the distance or the orientation from which it is perceived. It helps us to perceive accurately. The kinds of object constancy include: Shape, Size, Colour and Location constancy.

Perceptual illusion
Refers to a false perception of reality such that normal perceptual processes produce perceptual misinterpretations. It occurs when depth cues and normal perceptual processes seem to break down.

Factors that affect perception
Factors that affect perception have been categorized into three main groups of stimulus configuration, attention related and personality factors.

Stimulus configuration factors include:
i. Grouping of the stimuli - in the classroom grouping of stimuli aids perceptual processes, e.g. when teaching the periodic table in chemistry, metals are grouped together while the non-metals are also grouped together.

ii. Similarity of the stimuli - e.g. sets of similar problems in mathematics put together.

iii. Symmetry of the stimuli - grouping objects that have similar shapes and sizes e.g. teaching geometry in mathematics.

iv. Proximity of the stimuli
v. Good continuation of the stimuli
vi. Figure vs ground phenomenon
vii. Simplicity of the stimuli

Attention and perception
Include Novelty, repetition, intensity, size, contrasting and mobility of the stimuli.

Personality factors
Include learning styles, motivation, interest and values, learner cues, culture and learning experience.

Implication of Perception in the teacher's work
The ideas in perception can make teaching and learning more rewarding. Like the idea of the principle of grouping in perceptual matters can be applied equally to mental activity in the classroom. The field of learning should therefore have structure. To aid the perceptual process in the classroom therefore the teacher should among other things:

a. Emphasize the importance of structure and the salient points in each lesson.
b. Start from familiar perceptual experiences to the unfamiliar.
c. Consider the developmental level of the child.
d. Avoid common sources of force perceptions or perceptual illusions.
e. Leave room for learners to complete by filling up gaps in the learning process.
f. Encourage learners to cultivate the three key attributes of organization, interpretation and attention in the course of learning.

Chapter Review and Summary of key points
This chapter dwelt on the concept of perception, a derivative of the Latin word ‘perceperere’ or ‘percipio’ used to mean the organization, identification, and interpretation of sensory information in order to represent and understand the environment. Seen as the process in which sensory experiences are organized and made meaningful from a wide array of stimuli that bombard our senses, perception is a relevant concept in the learning process through perceptual mechanisms. Perceptual organization is made under figure and ground and a host of others. Perceptual constancies and illusions were also discussed. The educational implications of perception include: emphasizing the importance of structure and the salient points in each lesson; starting from familiar perceptual experiences to the unfamiliar while considering the developmental level of the child and encouraging the key attributes of perception namely: organization, interpretation and attention in the course of learning.

Review Questions
1. What is perception?
2. Name any four perpetual mechanisms
3. Perception can be organized in different ways, discuss any five of these with graphical examples
4. Distinguish between perceptual constancy and perceptual illusion
5. What is the implication of perception in the teaching learning process?
Meaning and Nature of Attitude

Attitude is a key or central concept in social psychology that is well researched but is still marked with a lot of confusion. This may be due to the plethora of diverse conceptions. Simply put, attitudes refer to a relatively stable overt behavior which affects one’s status. Attitude can also be defined simply as our response to people, places, things, or events in life. Fundamentally, the word attitude comes from the Latin word, “aptus” meaning fitted or fit, and the Latin ending “tude,” a feminine suffix for abstract nouns formed from adjectives (English Oxford Dictionary). Derived from “aptus” therefore, attitude denotes fitness or adaptedness, hence the physical connotation, but like the word aptitude, attitude suggests a mental preparation for action as well (Shrigley et al., 1988). A great deal of definitions abound on the concept of attitude. Jung (1921) looked at attitude as a readiness of the psyche to act or react in a certain way.

In social psychology, attitude is the belief, perception and judgment that reflects the classification and evaluation of persons, objects, situations, with a like or dislike label. Attitudes are inferred; they are not objectively observable, though they are manifested in conscious experiences, verbal reports, overt behavior and physiological indicators. A rarer distinction is to equate attitude with unconscious and irrational tendencies and opinions with conscious and rational activities. Others still view attitudes as meaningful and central and consider opinions as more peripheral and inconsequential. It is noteworthy that some of these definitions make critical distinctions between attitudes and a number of related terms such as values, interests, sentiments, attitudes, beliefs and opinions. These have been arranged in the degree of specificity with values being the broader tendencies and beliefs and opinions being the narrowest tendencies. According to this terminology, the difference between attitude and the related terms is one of degree rather than of kind.

According to Hockenbury and Hockenbury (2003) attitude is a learned tendency to evaluate some objects, persons or issues in a particular way. Such evaluations may be positive, negative or ambivalent. An attitude is basically the disposition we have for relating to our world, or to specific things in it. The difference between the way things are and how they are conceived to be is exactly like the difference between the terrain that is represented by a map and the map itself. We human beings do not, contrary to popular opinion, perceive the world directly. What we normally understand as our “perceptions” of the world, are really accomplished through the imposition of a vast set of neurological assumptions upon the actual sensory data that our organs receive from the world. An attitude is “a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols” (Hogg & Vaughan 2005). Attitude is a three component construct which is known as the ABC (Eagly and Chaiken, 1998). Where:

A-is the affective, or emotional component that will influence our behavior, whether we feel good or bad or ambivalent.

B-is the typical behavioral tendency of a person while

C-is the cognitive evaluation or belief of a person, based on what that person learnt from experience or observations.

The quality of one’s attitudes is judged from the observable, evaluative responses that are made. While one might consult one’s inner experiences as evidence of one’s own attitudes, only public behavior can receive objective study. For this reason investigators rely heavily on behavioral indexes of attitudes—e.g., on what people say, on how they respond to questionnaires, or on such physiological signs as changes in heart rate. Other investigators hold that one’s attitude toward any category will correlate with how well that category serves one’s own values. For example, a person may be asked to rank specific values such as health, safety, independence, or justice. The person is then asked to estimate the degree to which a particular class (such as politicians, medical doctors, or police) tends to facilitate or impede each value. The sum of the products of these two ratings provides a measure of the
individual's attitude toward the group. Thus, if justice is held in high regard, but the person categorizes politicians as interfering with justice, then the person's attitude toward that class of people is taken to be negative.

Attitudes are sometimes regarded as underlying predispositions, while opinions are seen as their overt manifestations. A rarer distinction equates attitudes with unconscious and irrational tendencies but equates opinions with conscious and rational activities. Others view attitudes as meaningful and central but consider opinions as more peripheral and inconsequential. A still more popular distinction likens attitudes to matters of taste (e.g., preferences for a certain cuisine or type of music) and opinions to questions of fact (e.g., whether fuel subsidy should be removed). Some authorities make a critical distinction between attitudes and a number of other related terms. These can be arranged in a hierarchy based on their degree of specificity or exclusiveness thus “Values” are said to represent very broad tendencies of this type, “interests” being slightly less inclusive, and “sentiments” narrower still “attitudes” are viewed as still more narrow predispositions, with “beliefs” and “opinions” being progressively the most specific members of this hierarchy.

Attitude can thus be defined as a disposition or tendency to respond positively or negatively towards a certain thing (idea, object, person, situation). They encompass, or are closely related to, our opinions and beliefs and are based upon our experiences. Since attitudes often relate in some way to interaction with others, they represent an important link between cognitive and social psychology. As far as instruction (teaching and learning) is concerned, a great deal of learning involves acquiring or changing attitudes. Attitudes are expected to change as a function of experience or learning experience.

Components of Attitude
Attitude is composed of three components, which include cognitive component, affective/emotional component, and behavioural component.

Cognitive
Basically, the cognitive component is based on the information or knowledge one has about the subject, object, person etc. It involves the knowledge or information about a person or object, etc., and his belief about it. For instance, in case of a student who is scared of mathematics or any mathematics related subject, the cognitive component might be the fact that mathematics is difficult or an unpleasant subject.

Affective
Refers to feeling aspect, i.e. how one feels about it, like or hate based on the feelings of the individual. As in the example above, the affective component would be the feeling that he/she is scared of mathematics as a subject seeing it as an uninteresting bore.

Behavioural
This component reflects how the attitude affects the way we act or behave. It is the action tendency, i.e. how one behaves to depict the attitude. The behavioral component in the mathematics example above would be that the student would completely avoid attending mathematics lessons or gets scared as the lesson for mathematics approaches. An attitude is therefore essentially like an evaluative statement that is either positive or negative depending on the degree of like or dislike for the matter in question as in the case of the mathematics above.

Types of Attitudes
There are three main types of attitudes which include:
a. Positive: A favorable attitude- liking people, objects, situation, etc.
b. Negative: An unfavorable attitude- does not like people/ objects, etc.
c. Neutral: Neither favorable nor unfavorable, a mid course between like and hate.
Types of Positive Attitude
Positive attitudes are those that tilt towards greater good rather than bad in people, situations, events, objects, programs etc. If someone has good feelings about something e.g. towards his/her work, then it is positive attitude. They are predisposition that results in desirable outcomes for individuals as well as the schools and other organizations. Individuals with such attitudes expect the best and not the worst whenever and as such will rather consider a mistake as an opportunity rather than a hurdle. They may be expressed by statements like 'it is so good to be here, it's quite a nice day or opportunity, I am sincerely happy for you, I can't help but like this person. Example of positive attitudes include:- confidence, cheerfulness, optimism, happiness, sense of responsibility, flexibility, determination, reliability, tolerance, adaptability, humility, diligence, kindness, care etc. In general, a positive attitude is most likely to have a good effect on one's behavior.

Types of Negative Attitude
Negative attitudes are those that seem to ignore whatever good to pay attention to the bad in people, situations, events, circumstances, objects etc. It is the tendency of a person that results in an undesirable outcome for individuals and organizations. Negative attitudes are typical of individuals who are likely to complain about changes, rather than adapting to the changing environment and they most often blame their problems/failures on others. They may be expressed by statements like 'I just hate this person', school, subject, 'this is frustrating, I know I can't do it etc. Examples of negative attitudes include:- Anger, Hatred, Pessimism, Frustration, Doubt, Resentment, Jealousy, Inferiority, superiority, envy, bitterness, avarice, etc.

Types of Neutral Attitude
Neutral attitude is the type that is represented by indifference and detachment. Individuals with a neutral attitude don't give enough importance to situations or events they give a dam and show poor interest. They may ignore any eminent problem, leaving it for someone else to solve. They may not even feel the need for change. They are 'neither cold nor hot'. A good example of neutral attitudes include: complacency, indifference, detachment, feeling of disconnection, unemotional outlook, poor judgment, indecision.

The Functions Of Attitudes
Attitudes can serve functions for the individual. Daniel Katz (1960) outlines four functional areas:

Knowledge
Attitudes provide meaning (knowledge) for life. The knowledge function refers to our need for a world which is consistent and relatively stable. This allows us to predict what is likely to happen, and so gives us a sense of control. Attitudes can help us organize and structure our experience. Knowing a person's attitude helps us predict their behavior. For example, knowing that a person is religious we can predict they will go to Church.

Self / Ego-expressive
The attitudes help us to communicate who we are and may make us feel good because we have asserted our identity. Self-expression of attitudes can be non-verbal too: think bumper sticker, cap, or T-shirt slogan. Therefore, our attitudes are part of our identity, and help us to be aware through expression of our feelings, beliefs and values. Attitudes formed to protect the ego or self image from threats thus help to fulfill the ego defensive function. Actually many outward expressions of such attitudes reflect the opposite of what the person perceives him to be. Such ego defensive attitude helps us to protect out self image and often we are unaware of them.

Adaptive or Adjustive
If a person holds and/or expresses socially acceptable attitudes, other people will reward them with approval and social
acceptance. For example, when people flatter their bosses or instructors (and believe it) or keep silent if they think an attitude is unpopular. Again, expression can be nonverbal. Attitudes then, have to do with being a part of a social group and the adaptive functions helps us fit in with a social group. People seek out others who share their attitudes, and develop similar attitudes to those they like. The adjustment function directs people toward pleasurable or rewarding objects and away from unpleasant, undesirable ones. It serves the utilitarian concept of maximizing reward and minimizing punishment.

The value-expressive Function refers to holding attitudes that protect our self-esteem or that justify actions that make us feel guilty. For example, one way children might defend themselves against the feelings of humiliation they have experienced in Physical education lessons is to adopt a strongly negative attitude to all sport. Whereas ego defensive attitudes are formed to protect a person's self-image, value expressive attitudes enable the expression of the person's centrally held values. Thus, a conservative person might develop an unfavorable attitude toward bright clothing and instead be attracted toward dark, pin striped suits.

People whose pride has suffered following a defeat in sport or academics might similarly adopt a defensive attitude: “I'm not bothered, I'm sick of hockey anyway” or “failure in mathematics is the norm for most not only me”. This function may likely have psychiatric overtones. Positive attitudes towards ourselves, for example, have a protective function (i.e. an ego-defensive role) in helping us preserve our self-image.

The basic idea behind the functional approach is that attitudes help a person to mediate between their own inner needs (expression, defense) and the outside world (adaptive and knowledge).

Formation of Attitude
Formation of attitude is a systematic process that involves the interplay of one’s environments which may induce both positive and negative influences on the individual. Such influences may create impressions on the individual and gradually may help them develop strong feelings over time giving rise to the formation of attitudes about the persons, objects and issues involved. Formation of attitudes may also arise from human motives like a burning desire to excel in school, the desire to hold a political office, the zeal and quest for material wealth. There are a number of different factors that can influence how and why attitudes form. Chiefly among these are experience, social factors and learning.

Experience
Attitudes form directly as a result of experience. They may emerge due to direct personal experience, or they may result from observation.

Social Factors
Social roles and social norms can have a strong influence on attitudes. Social roles relate to how people are expected to behave in a particular role or context. Social norms involve society’s rules for what behaviors are considered appropriate.

Learning
Attitudes can be learned in a variety of ways. People learn attitudes by observing the people around them. For example, children spend a great deal of time observing the attitudes of their parents and usually begin to demonstrate similar outlooks (Kendra, 2015).

Attitude Balance
The phenomenon of attitude balance suggests that it is healthy to be both satisfied and dissatisfied, to accept the present and yet want more. It can thus be understood that two opposites can exist in harmony and transmute into each other. Excess of any energy is harmful as it disrupts this balance. Admittedly it is not always easy to balance our attitude, but when we can
keep two forces in balance, then we will have the perfect attitude with which to approach life. Balance Theory assumes that all people will create the same amount of imbalance. Balance Theory recognizes that people sometimes notice inconsistent cognitions and that this inconsistency can lead to attitude change. We don’t compare every thought we have to every other thought, so at times we can have inconsistent cognitions and not realize it. However, when we are aware of inconsistency, that imbalance can lead to attitude change. One very important limitation is that this theory makes no prediction about how imbalance will be resolved. Balance theory predicts that imbalance is unpleasant and that the individual probably will do something to restore balance — but it can’t predict which thoughts or cognitions will change.

Attitude and social context
Although, what we understand as attitudes and social representations today are very different, there are some underlying principles that can be drawn on to integrate the two concepts. Perhaps an attitude is an expression of a social representation. Hogg and Vaughan (2002) suggest that ‘specific attitudes are framed by, and embedded within, wider representational structures’. Attitudes actually derive from society and are reworked by individuals as part and parcel of their experiences and as a function of their correspondence with existing social representations. It is thus clear that there are at least points of convergence between social representations and attitudes. However, the individualizing assumptions that have become meshed into our understanding of ‘attitude’ cannot be easily reconciled with the inherently social nature of ‘social representations’ and therefore cannot be easily dismissed.

Individuals are so inextricably interwoven in a fabric of social relations within their lives. There can be no pure individuality which can be apprehended independently of social relations (Duveen and Lloyd, 1986). It is for these reasons that current conceptions of attitude provide a partial understanding of how attitudes relate to the individual/society interface. Hence we need to examine the social knowledge or social representations of attitudes themselves. Our social representation of attitudes determines the way we explain the thoughts and actions of ourselves and of others. Social representations form an environment of thought which orientate understanding and actions as given by Social psychologists.

Relationship between Attitudes and Behavior
One may assume that attitude guides behaviour but contrary to research findings by social psychologists it has been consistently shown that people don’t always behave in accordance with their attitude. Eg one may disapprove of cheating (i.e attitude) but may find himself cheating at exams. Nonetheless, this skepticism does not appear to have been fully warranted. Although it cannot be denied that a large number of studies suggest that attitudes do not influence behavior, sometimes attitudes do predict behavior. So rather than asking whether attitudes relate to behavior, we have to ask, “Under what conditions do what kinds of attitudes or what kinds of individuals predict what kinds of behavior?” We need to treat the strength of the attitude-behavior relation as we would treat any other dependent variable and determine what factors affect it (Fazio & Zanna, 1981). Attitudes may affect behaviours on the following conditions:

Qualities of the Behavior
The behaviors that a social psychologist might be interested in predicting from knowledge of a person’s attitudes can range from the very specific (e.g., will the person attend music programmes this week?) to the very general. The degree of match between the attitude and the behavior we wish to predict affects the strength of the attitude-behavior relation that will be observed.

Qualities of the Person
In general, people who are aware of their feelings display greater attitude-behavior consistency than do people who rely
on situational cues. Obviously, this is a very rough distinction. Any given behavior of an individual can be guided both by the individual's internal feelings and by external cues. Level of moral reasoning has been found to affect the relation between attitudes and behavior (Rholes & Bailey, 1983). More advanced moral reasoning is characterized by principled, morally responsible thought based on people's own general principles of moral action. Lower levels of reasoning focus on the general positive or negative consequences of a particular action or on a feeling of being bound by social or legal rules. Individuals who depend on their own feelings and principles to make moral judgments may act much more consistently with their attitudes toward moral issues than do people who rely on external standards to determine what is moral.

Qualities of the Situation
A number of situational variables also affect the strength of the attitude-behavior relation. These include nonnative factors and time pressure to reach a decision. Norms, or beliefs about how one should or is expected to behave in a given situation, can exert a powerful influence on behavior. People often behave as they believe others expect them to behave. Individuals are more likely to base their decisions on their attitudes when they are under time pressure because their attitudes provide a heuristic for making quick decisions.

Qualities of the Attitude
Some kinds of attitudes appear to be stronger than others (Petty & Krosnick, 1995). In this context, the word stronger is not used in the sense of the attitude being more extreme but due to the apparent influence that the attitude has on the individual's behavior.

Direct Experience
Attitudes based on direct experience have been found to be more predictive of later behavior than attitudes based on indirect experience.

Attitude Accessibility
One thing that differentiates attitudes based on direct experience from those based on indirect experience is how accessible the attitudes are from memory. Accessibility in this sense refers to how easily attitudes come to mind. Some attitudes come to mind without any conscious effort on people's part and they are highly accessible from memory. But sometimes people have to deliberate quite extensively about what their attitudes toward some object are. Attitudes can serve as useful heuristics for decision making. Because accessible attitudes come to mind readily, they make the decision-making process much easier and can better impact people's well-being.

Attitude accessibility suggests that at least part of the benefits of accessible attitudes may arise due to their influence on how people attend to and process information in their day-to-day environment. For example, accessible attitudes influence what information people attend to in their surroundings (Roskos-Ewoldsen & Fazio, 1992). Consequently, people are more likely to notice and pay attention to elements of their environment that are attitudinally important to them. Likewise, accessible attitudes influence how people categorize and interpret information. When interacting with a person, you may pay attention to that person's race, gender, age, physical characteristics, and so forth.

Attitude Change
Attitude change refers to a modification of an individual's general evaluative perception of a stimuli or set of stimuli. It is represented by a specific form of self control and social control that does not rely on coercion. While attitudes can have a powerful effect on behavior, they are not set in stone. The same influences that lead to attitude formation can also create attitude change. In some cases, people may actually alter their attitudes in order to better align them with their behavior. Because people can change their attitudes from time to time, it suggests that the parents, teachers, and significant others have
very unique role to play in how individuals change their attitudes.

**Approaches to Attitude change**

**Use of modeling and conditioning approaches:** These draw on the principles of classical and operant conditioning theories, with the association of favorable/unfavorable and positive/negative outcome phenomenon respectively. When individuals are able to draw from the associations between favorable and unfavorable attitudes and behavior it is easy to have them change whatever attitude.

**Verbal learning approaches**

Attitudes can be changed through persuasion and we should understand attitude change as a response to communication. Experimental research into the factors that can affect the persuasiveness of a message include:

1. **Target Characteristics:** These are characteristics that refer to the person who receives and processes a message. One such trait is intelligence - it seems that more intelligent people are less easily persuaded by one-sided messages. Another variable that has been studied in this category is self-esteem. Although it is sometimes thought that those higher in self-esteem are less easily persuaded, there is some evidence that the relationship between self-esteem and persuasion is actually curvilinear, with people of moderate self-esteem being more easily persuaded than both those of high and low self-esteem levels (Rhodes & Woods, 1992). The mind frame and mood of the target also plays a role in this process.

2. **Source Characteristics:** The major source characteristics are expertise, trustworthiness and interpersonal attraction or attractiveness. The credibility of a perceived message has been found to be a key variable here; if one reads a report about health and believes it came from a professional medical journal, one may be more easily persuaded than if one believes it is from a popular newspaper.

3. **Message Characteristics:** The nature of the message plays a role in persuasion. Sometimes presenting both sides of a story is useful to help change attitudes. When people are not motivated to process the message, simply the number of arguments presented in a persuasive message will influence attitude change, such that a greater number of arguments will produce greater attitude change.

4. **Cognitive Routes:** A message can appeal to an individual's cognitive evaluation to help change an attitude. In the central route to persuasion the individual is presented with the data and motivated to evaluate the data and arrive at an attitude changing conclusion. In the peripheral route to attitude change, the individual is encouraged not to look at the content but at the source. This is commonly seen in modern advertisements that feature celebrities. In some cases, physician, doctors or experts are used. In other cases film stars are used for their attractiveness.

5. **Judgmental approaches**

This focuses on how attitudes judgments are made in the context of one's past experience relative to the attitude in question.

6. **Motivational approach**

This focuses on the different human motives relative to attitudes and persuasion. One great human motive is the need to maintain cognitive consistency. All theories of attitude change are characterized by the equilibrium/disequilibrium as well as how individuals are motivated to attain equilibrium.

**Theories of Attitude Formation and Change**

A variety of theories are also used to explain attitude change from various aspects of emotional life, behavior, and cognition.
Examples are: Consistency theories of cognitive dissonance, Self-perception theory, Balance theory etc. Attitude formation may also be explained by three learning approaches as given by Lefton in Amali and Akpe (2012) which include classical conditioning, operant and observational learning.

Whereas classical conditioning involves establishing stimulus–response situations, operant conditioning involves strengthening behavior through reinforcement.

Observational learning involves watching and imitating behavior through which such behavior is established.

Consistency Theories of Cognitive Dissonance
Consistency theories hold that we seek to be consistent in our beliefs and values. The most famous example of such a theory is Dissonance-reduction theory, associated with Leon Festinger (Festinger, 1957). According to Festinger’s theory, when we perceive a discrepancy between our attitudes and behavior, between our behavior and self-image, or between one attitude and another, a frustrating state of anxiety, or “dissonance,” results. For example, a person may successfully overcome a childhood tribal prejudice but may experience unpleasant emotional arousal at the sight of a tribally mixed couple. The person experiences a conflict between the belief in his own lack of prejudice and the evidence of prejudice from his behavior. This internal conflict produces cognitive dissonance, which is aversive. According to Festinger, a crucial source of a person’s motivation is dissonance reduction and the aversive state of dissonance motivates a person to reduce it ultimately resulting in changing one’s attitude or forming a new one. Because dissonance reduction involves the removal of an aversive stimulus, it serves as a negative reinforcement.

Balance Theory
Balance Theory is a motivational theory of attitude change proposed by Fritz Heider, which conceptualizes the consistency motive as a drive toward psychological balance. Heider proposed that “sentiment” or liking relationships are balanced if the affect valence in a system multiplies out to a positive result. Balance Theory is useful in examining how celebrity endorsement affects consumers’ attitudes toward products. If a person likes a celebrity and perceives (due to the endorsement) that the said celebrity likes a product, the said person will tend to like the product more, in order to align with the celebrity and by so doing, achieve psychological balance. However, if the person already had a dislike for the product being endorsed by the celebrity, she may like the celebrity less instead of liking the product more, again to achieve psychological balance.

The theory of cognitive dissonance
Cognitive Dissonance Theory, developed by Leon Festinger (1957), is concerned with the relationships among cognitions. A cognition, for the purpose of this theory, may be seen as a piece of knowledge. The knowledge may be about an attitude, an emotion, a behavior, a value, and so on. For example, the knowledge that you like the color red is a cognition; the knowledge that you are good at mathematical and manipulative subjects is a cognition; the knowledge that the Supreme Court outlawed school segregation is a cognition. People hold a multitude of cognitions simultaneously, and these cognitions form irrelevant, consonant or dissonant relationships with one another. This classic motivational theory of how attitudes change to maintain cognitive consistency continues to spark interest. The original notion of Festinger (1957) that dissonance arises from psychological inconsistency between linked cognitions has been modified extensively in subsequent research. In Cooper & Fazio’s (1984) “new look” approach, dissonance arises not from simple inconsistency but rather from freely chosen behavior that brings about some foreseeable negative consequence.

In Aronson’s (1992) self-concept analysis, dissonance arises from inconsistent cognitions that threaten the consistency, stability, predictability, competence, or moral goodness of the self-concept. In Steele’s (1988) self-affirmation theory, dissonance arises from the violation of general self-integrity.
From these self-related perspectives, negative consequences are powerful inducers of dissonance because it is inconsistent with most people's self-views to act in a way that results in foreseeable aversive consequences or bad pay-offs. Although not yet integrated into mainstream theorizing, dissonance reduction is oriented toward rationalizing behavior rather than attaining psychological consistency.

Stone & Cooper in Petty & Wegener (1998) dissonance arises when people fail to behave in a manner consistent with some valued self-standard. The specific motivation behind dissonance thus depends on the type of self-standard involved. Dissonance can emerge from behavior that is inconsistent with personal self-standards and does not reflect the way people want to be (ideal self) or think they should be (ought self). Dissonance can also emerge from behavior that generates aversive consequences and does not reflect how others want them to be (normative self standards). It emerges when behavior and its consequences challenge existing ideas about the self. Two cognitions are consonant if one cognition follows from, or fits with, the other. People like consonance among their cognitions.

Two cognitions are said to be dissonant if one cognition follows from the opposite of another. What happens to people when they discover dissonant cognitions forms the basic postulation of Festinger's theory. A person who has dissonant or discrepant cognitions is said to be in a state of psychological dissonance, which is experienced as unpleasant psychological tension. This tension state has drive-like properties that are much like those of hunger and thirst. When a person has been deprived of food for several hours, he/she experiences unpleasant tension and is driven to reduce the unpleasant tension state that results. Reducing the psychological state of dissonance is not as simple as eating or drinking however. To understand the alternatives open to an individual in a state of dissonance, we must first understand the factors that affect the magnitude of dissonance arousal and these form the basic working of the cognitive dissonance theory.

First, in its simplest form, dissonance increases as the degree of discrepancy among cognitions increases.

Second, dissonance increases as the number of discrepant cognitions increases.

Third, dissonance is inversely proportional to the number of consonant cognitions held by an individual.

Fourth, the relative weights given to the consonant and dissonant cognitions may be adjusted by their importance in the mind of the individual.

If dissonance is experienced as an unpleasant drive state, the individual is motivated to reduce it. Now that the factors that affect the magnitude of this unpleasantness have been identified, it should be possible to predict what we can do to reduce it. According to this theory therefore cognitive dissonance can be reduced by the following approaches:

**Changing Cognitions:** If two cognitions are discrepant, we can simply change one to make it consistent with the other. Or we can change each cognition in the direction of the other.

**Adding Cognitions:** If two cognitions cause a certain magnitude of dissonance, that magnitude can be reduced by adding one or more consonant cognitions.

**Altering importance:** Since the discrepant and consonant cognitions must be weighed by importance, it may be advantageous to alter the importance of the various cognitions.

Festinger's theory of cognitive dissonance is one of the best known and most researched frameworks pertaining to attitude change. According to this theory, attitude change is caused by conflict among beliefs. A number of factors determine the strength of the dissonance and hence how much effort is required to change attitudes. By manipulating these factors, attitude change can be facilitated or inhibited.

**Measuring attitudes**

In educational practice, the teacher's work may hinge on measuring attitudes of stakeholders like learners, teachers, providers and even the management. Although similar to,
measuring attitudes may relate to one's self image and so may well go beyond perceptions. The most straightforward way of finding out about someone's attitudes like in the case of perception would be to ask them but because of this relationship to self-image and even social acceptance, more functional ways have been evolved for measuring attitudes like Direct Measurement (e.g. use of Likert Scale and Semantic Differential) and Indirect Measurement (projective techniques).

Direct Measurement

Examples of direct measurement is the use of Likert Scale and Semantic Differential. Likert Scale-developed by Likert in 1932 is the principle of measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, and so tapping into the cognitive and affective components of attitudes. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions and levels of agreement/disagreement. A typical example is the questionnaire used in most survey research studies.

Indirect Measurement

Uses projective techniques like projective tests. A projective test involves presenting a person with an ambiguous (i.e. unclear) or incomplete stimulus (e.g. picture or words). The stimulus requires interpretation from the person. Therefore, the person's attitude is inferred from their interpretation of the ambiguous or incomplete stimulus. The assumption about these measures of attitudes is that the person will "project" his or her views, opinions or attitudes into the ambiguous situation, thus revealing the attitudes the person holds. However, indirect methods only provide general information and do not offer a precise measurement of attitude strength since it is qualitative rather than quantitative. This method of attitude measurement is not objective or scientific which is a big criticism. Examples of projective techniques include Rorschach Inkblot Test and Thematic Apperception Test (or TAT).

Scientific Studies on Measurement of Attitude

Use of questionnaire- employs techniques like the Likert Scale, Guttman Scale and Thurstone. The Likert Scale which is the commonest is used in questionnaires with all the items set on a single attitude whose attributes are reflected in the items used. The items are written in a straight forward manner devoid of any ambiguities. The Likert Scale can be calibrated on a five-point or four-point scale from strongly agree to strongly disagree. It is useful in proffering solutions to situations referring to attitudinal change.

Implications of attitudes in teaching and Educational Practice

Without positive attitudes and perceptions, students have little chance of learning proficiently. The following are some implications of attitudes in the teaching/learning process.

- Proper application of theories can help teachers change the students' attitudes to the better.
- Since attitudes are measurable teachers can use such measures to effect.
- Teachers should stress only the positive attitudes while being good models for the children they teach.
- The idea in cognitive dissonance that smaller rewards lead to greater attitude change can be harnessed in helping children form and change attitudes appropriately through rewards and reinforcement schemes.

Chapter Review and Summary of key points

Attitude as used in psychology involves a complex organization of evaluative beliefs, feelings and tendencies toward certain actions, objects or people. One's attitude reflects how one thinks, feels, and behaves in a given situation and as such are fundamental determinants of our perceptions of, and actions toward all aspects of the social environment. Albeit elusive, the concept of attitudes was clarified while bringing out the components which include the cognitive, the behavioral and
the affective. The types of attitude include the positive, negative and the neutral or ambivalent. Human attitudes function in the provision of knowledge, adaptive or adjustive and self expression. The theories of attitude formation and change were also discussed, while the relationship between attitude and human behaviour in social context were highlighted. The approaches to the measurement of attitudes in educational research and studies were also discussed. The implications of the study of attitudes in education lie in the emphasis on proper application of theories to help teachers change the students' attitudes to the better. The idea in cognitive dissonance can be harnessed in helping children form and change attitudes appropriately through rewards and reinforcement schemes. Teachers should strive to stress only the positive attitudes while being good models for the children they teach.

Review Questions
1. Define the concept attitude
2. Differentiate between negative and neutral attitudes
3. What are the functions of attitudes in the education enterprise?
4. List any five positive attitudes
5. What are the implications of attitude formation and change to the teaching and learning process?

Introduction
Cherry (2015) define Learning as a relatively lasting change in behavior as a result of experience, instruction or study. Learning experience refers to any interaction, course, program, or other experience in which learning takes place. It may occur in traditional academic settings (schools, classrooms) or nontraditional settings (outside-of-school locations, outdoor environments), or whether it includes traditional educational interactions (students learning from teachers and professors) or nontraditional interactions (students learning through games and interactive software applications, etc).

Learning Styles
According to Ferriman (2013), everyone learns differently, according to him, learning is a complicated concept as everyone is unique in their own way, and learns in their own way as well. Below are some learning styles discussed by Ferriman

Visual
This group of people prefer to use pictures, images, diagrams, colors, posters and maps to learn.

Physical
These categories of people learn by doing, they use some parts of their body to assist in their learning such as: drawing diagrams, using physical objects, or role playing, which are all strategies of the Physical learner.
Aural
People who prefer using sound, rhythms, music, recordings, clever rhymes, etc.

Verbal
The verbal learner is someone who prefers using words, both in speech and in writing to assist in their learning. They make the most of word based techniques, scripting, and reading content aloud.

Logical
The people who prefer using logic, reasoning, and “systems” to explain or understand concepts. They aim to understand the reasons behind the learning, and have a good ability to understand the bigger picture, e.g., Mathematics.

Social
These people are the ones who enjoy learning in groups or with other people, and aim to work with others as much as possible.

Solitary
The solitary learner prefers to learn alone and through self-study.

In reality, we all probably fall into each category, depending on the learning that is taking place.

Learning Outcomes
Learning outcomes refer to the results of the teaching or learning exercise or interaction. Such results can be measured in different dimensions as described by Robert Gagne in Kelvin (1991).

Robert Gagne’s Classification of Learning Outcomes
Robert Mills Gagné (1916 – 2002) was an American educational psychologist best known for his “Conditions of Learning”. Gagné pioneered the science of instruction during World War II when he worked with the Army Air Corps training pilots. He went on to develop a series of studies and works that simplified and explained what he and others believed to be “good instruction.” Gagné was also involved in applying concepts of instructional theory to the design of computer-based training and multimedia-based learning.

Gagné’s work is sometimes summarized as the Gagné assumption. The assumption is that different types of learning exist, and that different instructional conditions are most likely to bring about these different types of learning.

Gagné’s theory stipulates that there are several types and levels of learning, and each of these types and levels require instruction that is tailored to meet the needs of the pupil. While Gagné’s learning blueprint can cover all aspects of learning, the focus of the theory is on the retention and honing of intellectual skills. The theory has been applied to the design of instruction in all fields, though in its original formulation special attention was given to military training settings.

Five categories of learning
1. Intellectual skills: Create individual competence and ability to respond to stimuli.
2. Cognitive strategies: Capability to learn, think, and remember
3. Verbal information: Rote memorization of names, faces, dates, phone numbers, etc.
4. Motor skills: Capability to learn to drive, ride a bike, draw a straight line, etc.
5. Attitudes: Ingrained bias towards different ideas, people, situation, and may affect how one acts towards these things.

Each category requires different methods in order for the particular skill set to be learned.

Eight ways to learn
1. Signal Learning: A general response to a signal. Like a dog responding to a command.
3. Chaining: A chain of two or more stimulus-response connections is acquired.
4. Verbal Association: The learning of chains that are verbal.
5. Discrimination Learning: The ability to make different responses to similar-appearing stimuli.
7. Rule Learning: Learning a chain of two or more concepts.
8. Problem Solving: A kind of learning that requires "thinking."

The relationship among the different domains of learning is such that students can learn and develop in several domains simultaneously. For example, as students learn specific motor skills for handling a particular cultural practice in practical Agriculture, they may also learn some concepts relating to such agricultural practices (which is cognitive goal oriented) while at the same time developing an interest in Agriculture (affective goal oriented). In this wise, Robert Gagne (1985) has developed a taxonomy of educational goals which draws upon all three domains of learning, the cognitive, affective, and psycho motor domains as presented graphically in the table below.

<table>
<thead>
<tr>
<th>Learning outcome</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual Skills, Discrimination learning</td>
<td>Noticing differences between two objects</td>
<td>Distinguishing between printed a's and a's</td>
</tr>
<tr>
<td>Concept learning</td>
<td>Relating or identifying a group of objects</td>
<td>Correctly naming 2 or more examples of bases, fruits etc or recognizing a mammal</td>
</tr>
<tr>
<td>Rule learning</td>
<td>Applying a relationship among concepts to a particular case</td>
<td>Demonstrating grammatical agreement between subjects and verbs</td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>Methods for thinking and learning effectively</td>
<td>Using an efficient way to recall names</td>
</tr>
<tr>
<td>Verbal learning</td>
<td>Putting knowledge into labels, facts, or statements</td>
<td>Reciting the names of state capitals or summarizing a passage</td>
</tr>
<tr>
<td>Motor skill learning</td>
<td>Performing a physical action according to certain standards</td>
<td>Swimming, handwriting</td>
</tr>
<tr>
<td>Attitude learning</td>
<td>Acquiring certain feelings that consistently influence ones choice of action</td>
<td>Consistently choosing to study rather than go to a movie</td>
</tr>
</tbody>
</table>

The Gagne classification outlines the types of learning outcomes as given by Robert Gagne. As provided in the table above, there are various skills that range from the intellectual to the motor.

**Table 1: Types of learning outcomes as given by Robert Gagne**

**Intellectual skills**

According to Gagne's taxonomy, intellectual skills come in different forms with the most concrete being discrimination learning. Discrimination learning has to with distinguishing objects by their visible or tangible properties (Seifert, 1991). Typical examples of discrimination learning can be from first grade levels to the higher graduate levels. In first grade it may include learning to tell the differences between letters and figures, like Capital A and small a, differences between letter p and q, between a cat and a rat. In graduate school level, it can be learning the differences between a vein and an artery under microscope.
Concept Learning
Has to do with jumping objects, events, or ideas. Example of concept learning in elementary school may include learning to group aquatic animals from terrestrial animals. Concept learning can take the form of "defined concepts" which Gagne used for concepts that combine to form more abstract groupings. These get their meaning directly from other more concrete concepts. This is when abstract concepts like intelligence can only be defined by referring to the concepts with concrete attributes. More concrete attributes like pencils can easily be defined by referring to some real, visible objects.

Rule learning
Rule learning is the most complex intellectual skill that involves use of rules or statements that relate concepts with each other. E.g. of rule learning include learning to take permission through raise of hands before talking or answering questions. Others include rules for polite behaviour and other techniques such as creating lines to make writing orderly and neater, being kind and polite to teachers and fellow students.

Cognitive strategies
According to Seifert (1991) cognitive strategies are those that guide the search for knowledge attempting to make it as productive as possible. It is when rules concern finding and using knowledge. These may be ground rules for completing assignment which can be further clarified by the teacher or instructor when need be. This may amount to recalling the rules that were previously used to handle similar challenges. Such rules help even younger students to use simpler cognitive strategies to learn to pronounce even new and strange words correctly without teachers pointing them to it. According to Seifert (1991) it is by following such strategies that elementary students are able to eventually pronounce many new words in print without ever having been taught their spoken equivalent.

How do we teach cognitive strategies? Just like intellectual skills, cognitive strategies may be learnt and used without being stated. This seeming automatic quality does not negate their importance in the teaching/learning process. Teachers should therefore be vigilant to distinguish between students with fully automatic cognitive strategies from those who lack these.

Verbal learning: Verbal learning involves putting knowledge into words by use of labels, ideas, facts and statements. For example learning that Abuja is the capital of Nigeria or the French word manger means to eat. Verbal learning also involves recognizing organized discourse such as the story line in a piece of literature or alike of thinking needed to describe a given theory (Seifert 1991).

Verbal learning provides the basic building blocks required for intellectual skills. This can start by discriminating between concepts or ideas and materials to provide adequate verbal information in the form of facts and principles about such concepts and ideas.

Motor Skill Learning
This is learning outcome that involves performing physical skills according to certain standards. Although motor skills learning can be achieved alongside other forms of learning teachers need to plan them out explicitly. This can be done through a combination of practice, occasional demonstration and feedback from the teacher. E.g. the teacher may demonstrate a simple experiment on filtration and the learning through practice how to achieve success at it for 1 to 3 or 5 times. This can be done through homework and assignment. Another strategy of teaching motor skill is through evening practices for sporting skills and use of class time for practices and practical work. Common e.g.s of motor skill learning takes place in Guidance and Counselling.

Attitude learning
This is the acquisition of certain feelings, (positive and negative) about something or someone which influence ones choice of
action in a consistent way. E.g., a child who has learnt a positive thing about mathematics will make several choices that favour his learning of mathematics assignment.

The teacher's role in attitude learning includes encouraging student's typical behaviours that are desirable rather than their best behaviours. This may involve students writing about their feelings on certain issues and they can also observe students reactions to class activities over time.

Designing instruction according Gagné
Skills are to be learned at the lowest level and mastered before proceeding. An instructor should use positive reinforcement and repetition, with each new skill building upon previously acquired skills.

Steps of planning instruction by Gagné
1. Identify the types of learning outcomes: Each outcome may have prerequisite knowledge or skills that must be identified.
2. Identify the internal conditions or processes the learner must have to achieve the outcomes.
3. Identify the external conditions or instruction needed to achieve the outcomes.
4. Specify the learning context.
5. Record the characteristics of the learners.
6. Select the media for instruction.
7. Plan to motivate the learners.
8. Test the instruction with learners in the form of formative evaluation.
9. After the instruction has been used, summative evaluation is used to judge the effectiveness of the instruction.

Nine steps of instruction
The teacher undergoes these steps to instructions in the classroom.

1. Gain attention: Present stimulus to ensure reception of instruction.
2. Tell the learners the learning objective: What will the pupils gain from the instruction?
3. Stimulate recall of prior learning: Ask for recall of existing relevant knowledge.
4. Present the stimulus: Display the content.
5. Provide learning guidance.
7. Provide feedback: Give informative feedback on the learner's performance.
9. Enhance retention and transfer to other contexts.

Evaluation of instruction
The purpose of evaluation is to supply data on feasibility and efficiency to develop and improve the course. It is based on the following:
1. Have the objectives been met?
2. Is the new program better than the previous one?
3. What additional effects does the new program include?

Evaluation is concerned with the effectiveness of the course or program regarding the student's performance. Based on the student's performance, measures are taken of the kind of student capabilities the program is intended to establish.

When objectively analyzing the condition for learning Gagné says: "Since the purpose of instruction is learning, the central focus for rational derivation of instructional techniques is the human learner. Development of rationally sound instructional procedures must take into account learner characteristics such as initiate capacities, experimental maturity, and current knowledge states. Such factors become parameters of the design of any particular program of instruction."
Implications of Robert Gagne's learning outcomes

Gagne’s classification of learning outcomes recognizes the diversity of everyday classroom learning. Teachers can benefit by drawing on the different parts as seen. It can help the teachers in planning classroom learning in one of the followings ways.

1. Working with students on activities that challenge them towards the learning outcome projected by Gagne. This may involve determining the level at which students are operating at every point in time so as to encourage them to move to the next level. Teachers can also encourage students to find answers to questions and problems through practical work.

2. Referring to the affective taxonomy in the preparation and presentation of lessons, teachers can encourage learners to become emotionally involved in the learning process. Teachers should ensure the provision of instruction in all vital areas of learning including affective that stress learner attitudes, feelings and values. For example teachers can teach the value of “unity in diversity” by showing interest on how students differ. The affective does not stand alone from cognitive and psychomotor outcomes so teachers must be mindful to prepare their teaching content in such a way that as learners learn cognitive content they acquire psychomotor skills and affective skills associated with such.

3. Teachers should plan group learning activities that build students’ confidence in their physical activities. They should realize the importance of helping students to develop motor skills that make them well rounded individuals; these include skills for typing, drawing and writing as well as gross motor skill like running, writing playing etc. Teachers can arrange activities and projects that will encourage development of motor skills when possible.

4. Teachers should develop content that help build cognitive strategies by being intrusive to capture even reticent learners. Teachers can equip students adequately to transfer classroom learning for problems outside for the classroom by providing good opportunities for practice.

Theories of Learning

Theories of learning aim at providing laws and principles that guide learning. The common learning theories include:

Observational Learning Theory by Albert Bandura
This theory was propounded by Albert Bandura who identified three basic models of observational learning:

1. A live model, which involves an actual individual demonstrating or acting out a behavior.
2. A verbal instructional model, which involves descriptions and explanations of a behavior.
3. A symbolic model, which involves real or fictional characters displaying behaviors in books, films, television programs, or online media.

The following steps are involved in the observational learning and modeling process:

Attention
In order to learn, you need to pay attention. Anything that distracts learner’s attention is going to have a negative effect on observational learning.

Retention
The ability to store information is also an important part of the learning process. Retention can be affected by a number of
factors, but the ability to pull up information later and act on it is vital to observational learning.

Reproduction
Once you have paid attention to the model and retained the information, it is time to actually perform the behavior you observed. Further practice of the learned behavior leads to improvement and skill advancement.

Motivation
Finally, in order for observational learning to be successful, you have to be motivated to imitate the behavior that has been modeled. Reinforcement and punishment play an important role in motivation. For example, if you see another student is praised for being in class on time, you might start to show up a few minutes early each day.

Educational Implications of Observational/Social Learning Theory

1. Students often learn a great deal simply by observing other people.
2. Describing the consequences of behaviors can effectively increase appropriate behaviors and decrease inappropriate ones.
3. Modeling provides an alternative to shaping for teaching new behaviors.
4. Teachers should expose students to a variety of other models.
5. Students must believe that they are capable of accomplishing school tasks.
6. Teachers should help students set realistic expectations for their academic accomplishments.
7. Self-guideline techniques provide effective methods for improving behavior.

Conditioning Theories of Learning

From the early part of the twentieth-century, some psychologists began to view psychology as a more scientific area of study. According to Kendra (2016) they argued that psychology needed to study only those things that could be measured and quantified. In view of this different learning theories emerged to explain how and why people behave the way that they do and they had emphasis on the environmental influences on the learning process which include associations, reinforcements, punishments, and observations. Rooted in the concept of behaviourism, the primary learning theories of development include Classical Conditioning, Operant Conditioning and Social Learning theories; a triad that has formed a formidable force in explaining human behaviour in the context of learning.

Albeit propounded by Pavlov, a man who had no background in psychology, classical conditioning has had a major influence on the field of psychology using principles that arose from his experiments with the reflex actions involving the digestive system of dogs. According to the principles of classical conditioning, learning takes place when an association is formed between a previously neutral stimulus and a naturally occurring stimulus. In Pavlov’s experiments, for example, he paired the natural stimulus of food with the sound of a bell. The dogs would naturally salivate in response to food, but after multiple associations, the dogs would salivate to the sound of the bell alone (Kendra, 2016).

Operant conditioning, first described by the behavioural psychologist B.F. Skinner, it is also referred to as Skinnerian or instrumental conditioning. Born out of the need to explain all aspects of learning wherein Skinner believed that classical conditioning simply could not account for all types of learning. Like classical conditioning, operant conditioning relies on forming associations albeit here it involves those associations made between behaviour and the consequences of that behaviour. Whereas positively associated behaviours strengthen desirable behaviours, negatively associated behaviours have tendency to weaken poor behaviour.
The social learning theory was proposed by Albert Bandura who questioned whether associations and direct reinforcements simply could really account for all human learning. The emphasis in the social learning theory is on observation wherein Bandura argued that individuals observe the actions of those around them, particularly significant others like caregivers and siblings and then imitate these behaviours. Of course, Bandura noted that learning something does not necessarily result in a change in behaviour until there is actually a need or motivation to utilize the information acquired.

In summary, while learning in classical conditioning occurs by association between a natural and a neutral stimulus, in operant conditioning it is followed by reinforcement or punishment and in social learning by observation. The classical conditioning theory focuses on automatic, naturally occurring behaviours while the operant conditioning focuses on voluntary behaviours and the social learning has its focus on the give and take interaction between the social, cognitive and environmental influences. In this chapter we shall look more closely at the classical conditioning theory tracing from the biographical sketch to the assumptions, tenets and principles that underlie the theory.

Classical Conditioning Learning Theory

The classical conditioning learning theory has been associated with two early psychologists; Ivan Pavlov and John Watson (1849-1936). Pavlov’s work on classical conditioning had some roots in behaviourism albeit, John Watson (1878-1958) who is known as the founder of behaviourism was highly influenced by Pavlov who pioneered the work in the development of classical conditioning theory. Ivan Pavlov was born in Ryazan, central Russia on 26th September, 1849 to the family of a village priest called Peter Dmitrievich Pavlov and Varvara Ivanovna who was a homemaker. Ivan Pavlov was the eldest of the 11 children. His early education was at the church school and the Ryazan Ecclesiastical theological seminary. On deciding he would be a scientist, he abandoned the seminary/priestly training and enrolled in the natural science curriculum in 1870. It was right in the course of training that Pavlov started his experimental studies with the physiology of reflexes and pancreatic secretions and then that of circulation both earning him gold medals. (http://www.thefamouspeople.com/profiles/ivan-pavlov-38.php#bW1IkbkV1FOMBOk99).

Ivan Pavlov was reportedly influenced by the works of Charles Darwin and Ivan Sechenov into studying natural sciences and physiology. It was his exceptionality that won him prestigious university awards. He later went to the Academy of Medical Surgery to further his education still in physiology. Among his contributions to knowledge are the discovery of conditioning/reflex actions as well as the physiology of the digestive system that led to the Classical Conditioning theory.

The Development of the Classical Conditioning Theory Model

The Classical Conditioning Theory as was propounded by the Russian Physiologist, Ivan Pavlov (1849-1936) is a form of learning which arises from pairing a conditioned stimulus (CS) with an unrelated unconditioned stimulus (UCS) in order to produce a behavioural response known as a conditioned response (CR). Whereas the conditioned response is the learned response to the previously neutral stimulus, the unconditioned stimulus is usually a biologically significant stimulus such as food or pain which elicits an unconditioned response (UCR) from the start. Initially the conditioned stimulus is neutral and produces no particular response at first, but after conditioning it elicits the conditioned response. According to this theory, behaviour is learnt by a repetitive association between the response and the stimulus. It is based on the assumption that learning is developed through the interactions with the environment. Also, the environment shapes the behaviour but internal mental states such as thoughts, feelings, and emotions do not necessarily explain the human behaviour.
Using the natural reflex action of salivation when food (termed as a stimulus) is placed in an animal's mouth, Pavlov conducted an experiment on a dog and measured the amount of saliva secreted by a dog, (with the use of a surgical procedure) when it is exposed to different stimulus or food and an accompanying stimulus. At first, when Pavlov presented a piece of meat (which he termed as an unconditioned stimulus, US) to the dog, he noticed a great amount of salivation (termed as unconditioned response, UR) whereas, in the second time, when he just rang the bell, he observed there was no effect of a bell on the dog's salivation. After this, Pavlov rang the bell accompanied with meat and noticed the salivation of the dog. He repeated this process several times, and finally, one day he just rang the bell without meat and observed that the dog still salivated to the bell alone which was originally a neutral stimulus. As reported by Ngwoke (1995), Pavlov concluded that the dog has learnt to associate other stimuli (like the bell) with the presentation of food. The dog then could respond to the bell in the same way it would naturally respond to the presentation of food. Thus an initially unrelated stimulus gets substituted for a natural stimulus giving rise to the process Pavlov termed as classical or respondent conditioning. Respondent here actually signify that a stimulus was selected which preceded and elicited a natural response. Looking at Pavlov's experiment, it can be identified that there are four factors of classical conditioning at work:

1. The unconditioned response was the dogs' natural salivation in response to seeing or smelling their food.
2. The unconditioned stimulus was the sight or smell of the food itself.
3. The conditioned stimulus was the ringing of the bell, which previously had no association with food.
4. The conditioned response, therefore, was the salivation of the dogs in response to the ringing of the bell, even when no food was present.

With this, Pavlov successfully associated an unconditioned response (natural salivation in response to food) with a conditioned stimulus (a bell), eventually creating a conditioned response (salivation in response to a bell). These results formed the basis of Ivan Pavlov's theory of classical conditioning.

The Procedure involved in Classical Conditioning
The scientific procedure for classical conditioning as given by Ivan Pavlov comprise of four elements namely:

Unconditioned Stimulus (UCS)
Which invariably causes some reaction in a way; in Pavlov's experiment food is the unconditioned stimulus or UCS which means the stimulus that elicited the response of salivation naturally.

Unconditioned Response (UCR)
Takes place when the UCS is presented. The salivation to the food is an unconditioned response (UCR), that is a response which occurs naturally; animals are prone to salivate at the sight and sound of food as the sight or the aroma arouses their appetite and desire.

Conditioned Stimulus (CS)
The object that does not ordinarily bring about the desired response. The bell is used as the conditioned stimulus (CS) by Pavlov because it will only produce salivation on condition that it is presented with the food, (it is not food and on its own does not make the dog feel food presence to salivate.

Conditioned Response (CR)
This is a particular behaviour that an organism learns to produce, when the CS is presented. Salivation to the bell alone is the conditioned response (CR), a response to the conditioned stimulus (coming because the dog through conditioning associated the bell with food which naturally elicits salivation).
A FUNCTIONAL APPROACH TO EDUCATIONAL PSYCHOLOGY

It is clear that Classical Conditioning involves learning by association, which is associating two events/objects which happen at the same time. The process of the theory as highlighted above can be graphically presented as follows.

**Stage one:**

<table>
<thead>
<tr>
<th>NS or CS</th>
<th>â€œNR or CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral stimulus like bell</td>
<td>neutral/reflex response like raising eyebrow/ear</td>
</tr>
<tr>
<td>(conditioned stimulus)</td>
<td>(conditioned response)</td>
</tr>
</tbody>
</table>

**Stage two:**

<table>
<thead>
<tr>
<th>NS &amp; UCS</th>
<th>â€œUCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell and food</td>
<td>salivation</td>
</tr>
<tr>
<td>(unconditioned stimulus)</td>
<td>(unconditioned response)</td>
</tr>
</tbody>
</table>

**Stage Three:**

<table>
<thead>
<tr>
<th>NS &amp; UCS</th>
<th>â€œUCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeated pairing of the duo above</td>
<td>continued salivation</td>
</tr>
<tr>
<td>(unconditioned response)</td>
<td>(Neutral stimulus &amp; unconditioned stimulus)</td>
</tr>
</tbody>
</table>

**Stage Four:**

<table>
<thead>
<tr>
<th>NS or CS</th>
<th>â€œCR</th>
<th>salivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Bell)</td>
<td>(Food)</td>
<td>UCS</td>
</tr>
</tbody>
</table>

In following this procedure, Pavlov found out, that the experimental dog became classically conditioned (CR) to the sound of the bell (CS) such that every time he rang the bell the dog salivates even without presentation of food.

As explained by Ngwoke (1997), Ivan Pavlov used this same experimental set up to demonstrate that other similar stimuli like electric bell and buzzer can be substituted for the unconditioned stimulus by way of transfer of learning as illustrated by the principle of stimulus generalization. Nearly all automatic, involuntary responses such as heartbeat, stomach secretion, blood pressure, brain waves etc can also become conditioned responses. But for the conditioning to be tangible and more effective, the conditioned stimulus should occur before the unconditioned stimulus, not after since the conditioned stimulus becomes a kind of signal for the unconditioned stimulus. Pavlov also could demonstrate that the dog could be made to unlearn what it had learnt by association earlier by building up new associations that compete with previous ones as is the case with an electric shock paired with the bell rather than the food. Pavlov termed this as counterconditioning because the dog finds the electric shock obnoxious and attempts to withdraw from the response of salivating thereby unlearning the salivation response. Hence there are a number of principles that underlie the classical conditioning theory.

**Basic Principles of Classical Conditioning**

The following are some of the important principles of classical conditioning:

**Principle of Extinction**

If a conditioned stimulus is repeatedly presented without the unconditioned stimulus, then the conditioned response will disappear. This is known as extinction. If a dog learns to associate the sound of a bell with food and then the bell is rung repeatedly, but no food is presented, the dog will soon stop salivating at the sound of the bell thereby getting the association into extinction as the responding behaviour becomes extinct. The principle of extinction explains the concept of forgetting in classical conditioning as a form of desensitization which involves learning to do something else.

**Principle of Stimulus Generalisation**

Stimulus generalisation is the extension of the conditioned response from the original stimulus to similar stimuli. According to Ngwoke (1997) the principle of stimulus generalization states that the stimulus initially paired with the unconditioned stimulus will equally evoke the conditioned response. For example, a dog who has been conditioned to salivate to the
sound of a bell of one tone, may well salivate to a similar sounding bell or a buzzer. This principle forms the basis of much of habit formation like study habits.

**Principle of Discrimination**
This is an animal or person’s ability to differentiate or discriminate between different stimuli. For example, if a dog is shown a red circle every time it is fed, then it will salivate at the sight of the red circle alone. If the dog is only fed when the red circle is presented and not when other colours are shown, it will learn to discriminate between red and the other colours. This principle works well when the unconditioned stimulus only paired with the conditioned stimulus and not with any other similar stimuli.

**Principle of Inhibition**
This principle stipulates that extraneous events presented along with the conditioned and unconditioned stimuli interfere with the conditioning process through demanding and competing responses. Such interference can lead to a weak association between the conditioned and unconditioned stimuli.

**Principle of Higher Order Conditioning**
This is where more than one stimulus is paired and presented (e.g., words and emotions); there can be a chain of events that are linked to the same stimulus. It is assumed that words may acquire emotional meaning through higher order conditioning, for example by pairing the words with something that causes emotion, eventually the word alone will have the emotional meaning.

**Principle of Systematic Desensitization**
This is a method based on the associative principles in classical conditioning to reduce anxiety by getting people to associate comforting or happy thoughts with stressful situation that produces anxiety. For example, a student becomes very anxious when taking tests but through systematic desensitization, he would be put in a series of test-like condition and be asked to imagine or visualize a happy time. Since comfort and anxiety are incompatible emotions, the student would eventually become less anxious in these situations.

**Application of Classical Conditioning in the Learning Process**
The classical conditioning learning theory finds useful application in the learning process especially in instilling good studentship /study habits like orderliness, cleanliness, punctuality, co-operation and team work. It can also prove useful in the development of positive affects and attitudes to learning as individuals’ poor attitude, interests, likes, dislikes and fears are not in-born but learnt and so can be unlearnt. Events that arouse some pain, events or emotions get associated. For example, learners may associate the frustration and difficulties they experience in some subjects like mathematics and so begin to hate not only the subject but even the teacher of the subject. In this same manner if the learning experience is pleasant the learner then associate the subject and the teacher with feeling happy and so develops a liking for not just the subject but the teacher.

This implies that teachers must do their best to pair learning with pleasurable experiences so as to avoid the negative effects of classical conditioning. Of course not all learning experiences have to be fun, but neither do they all have to be boring, useless, frustrating, disconnected, impersonal, contrived, or irrelevant. The teacher should try to make learning interesting, successful, relevant, and personal to the greatest extent possible.

The classical conditioning theory is useful in breaking undesirable learner behaviour like subject phobia using counter-conditioning. Other avenues of applying the classical conditioning theory as given by Ngwoke (1997) include the following:

1. **Cueing**- use of relevant cues can help learners
remember what has been learnt earlier. This calls for the need to avoid mistakes in the learning process that may be difficult to erase.

ii. Teachers are a formidable force in the learning process and as such should avoid being a source of distraction to learners through unwarranted threats, nagging and interruptions. Teachers should also watch out for unplanned learning outcomes that may arise from associative learning (like moods, emotions etc).

iii. If learning is associated with pleasant experiences, the learners will be more willing to learn.

The Laws of Learning
Thorndike postulated the law of effect, which states that responses which are followed by reward will occur again. On the other hand, responses which are followed by punishment will not occur again. The three laws of learning by Thorndike are discussed as follows:

The Law of Readiness
This law means that a person can learn best when he/she is physically and mentally ready, and they will not learn much if they see no reason for learning. If students have a strong purpose, a clear objective and a sound reason for learning, they usually participate in the learning process and make more progress than students who lack motivation.

Law of Exercise
The principle of exercise states that those things most often repeated and practiced are best remembered. It has been proven that students learn best and retain information longer when they have meaningful practice and repetition as well as positive feedback.

Law of Effect
The principle of effect is based on the emotional reaction of the student; it has a direct relationship to motivation. The principle of effect means that learning is strengthened when accompanied by a pleasant feeling, and that learning is weakened when associated with an unpleasant feeling. Teachers should recognize and commend students' progress. Learning situation should contain elements that affect the students positively and give them a feeling of satisfaction.

Operant Conditioning Theory of Learning
Operant Conditioning by B. F Skinner
The work of Skinner was rooted in a view that classical conditioning was far too simplistic to be a complete explanation of complex human behavior. He believed that the best way to understand behavior is to look at the causes of an action and its consequences. He called this approach operant conditioning. According to him, behavior which is reinforced tends to be repeated (i.e. strengthened), and behavior which is not reinforced tends to die out or be extinguished (i.e. weakened). He experimented this by placing a hungry rat in his Skinner box, the box contained a lever on the side and as the rat moved about the box it would accidentally knock the lever. Immediately it did so a food pellet would drop into a container next to the lever. The rats quickly learned to go straight to the lever after a few times of being put back in the box. The consequence of receiving food if they pressed the lever ensured that they would repeat the action again and again. Thus, Skinner believed that all behaviors could be explained as a learned reaction to specific consequences.

Principles of Operant Conditioning
Positive Reinforcement
Skinner showed how positive reinforcement worked by placing a hungry rat in his Skinner box and the consequence of receiving food if it pressed the lever guaranteed that it would repeat the action again and again.

Negative Reinforcement
This is the removal of an unpleasant reinforcer, negative reinforcement strengthens behavior because it stops an unpleasant
ant experience. These two learned responses are known as *Escape Learning* and *Avoidance Learning*. The effect of escaping the electric current guaranteed that they would repeat the action again and again.

**Punishment (weakens behavior)**

Punishment is the opposite of reinforcement since it is designed to weaken or eliminate a response rather than increases it. Like reinforcement, punishment can work either by directly applying an unpleasant stimulus like a shock after a response or by removing a potentially rewarding stimulus, for instance, deducting someone's pocket money to punish undesirable behavior.

**Shaping**

Skinner developed the idea of shaping. If you control the rewards and punishments which the environment gives in response to behaviors, then you can shape behavior (commonly known as behaviour modification).

**Schedules of Reinforcement**

Behaviorists discovered that different patterns of reinforcement had different effects on the speed of learning and on extinction.

A. **Continuous Reinforcement**

This is when an animal/human is positively reinforced every time a specific behaviour occurs.

B. **Fixed Ratio Reinforcement**

Behavior is reinforced only after the behavior occurs a specified number of times. For example, a child receives a star for every five words spelt correctly.

C. **Fixed Interval Reinforcement**

This is when reinforcement is given after a fixed time interval after a correct response has been made. An example would be every 15 minutes (half hour, hour, etc.) a pellet is delivered after pressing the lever.

D. **Variable Ratio Reinforcement**

Behavior is reinforced after an unpredictable number of times. For example, gambling or fishing.

E. **Variable Interval Reinforcement**

Reinforcement is given after an unpredictable amount of time has passed, e.g. on average of every 5 minutes.

**Implications of Operant Conditioning in the Classroom**

Reinforcement is the key issue in Skinner's theory. A reinforcer is anything that strengthens the desired response. It could be verbal praise, a good grade or a feeling of satisfaction.

1. Practice should take the form of question (stimulus) - answer (response) frames which expose the student to the subject in gradual steps.
2. Teachers should give learners immediate feedback.
3. Ensure that good performance in the lesson is paired with secondary reinforcers such as verbal praise, prizes and good grades.
4. Information should be presented in small amounts so that responses can be reinforced ("shaping"), and behaviour that is positively reinforced will reoccur.
5. The intended target behaviour needs to be as specific as possible because if people don't know what you want them to achieve, they can't know whether they're getting closer to achieving it or not.
6. Reinforcement should be immediate, but caution should be exercised that the rewards do not become too regular and frequent, otherwise, according to Skinner, they may lose their effect.
7. **Token Economy**: Token economy is a system in which targeted behaviors are reinforced with tokens (secondary reinforcers) and later exchanged for rewards (primary reinforcers). Teachers can use token economy by giving young children stickers or biro to reward good behavior.
Chapter Review and Summary of key points
Learning is a relatively lasting change in behavior as a result of experience, instruction or study. Learning became a major focus of study in psychology during the early part of the twentieth century as behaviorism rose to become a major school of thought. The chapter dwelt on the learning outcomes as presented by Robert Gagne while also attempting to provide theoretical explanations for learning. These include observational learning theory, the behavioristic, conditioning and social learning theories. The main thrust of the behaviorists theory is that any behavior that is reinforced tends to be repeated (i.e. strengthened); and behavior that is not reinforced tends to die out or to be extinguished (i.e. weakened). People are unique in their own way and therefore learn in their own way as well. Some learn through observation while some through training.

Study Questions
1. Define learning and explain any five styles of learning
2. Discuss the Observational learning theory by Bandura and its educational implications
3. Explain with examples the laws of effect
4. How can operant conditioning be applied in the classroom?
5. Highlight five learning outcomes as put forward by Robert Gagne.

Introduction
Have you ever given thought to the fact that without memory, you would not know your own name, your address, or where and when you were born? Memory is essential to all our lives, it is what makes us truly human. Without a memory of the past we cannot operate in the present or think about the future. According to Maslin (2010), the term memory comes from the Latin word memoria and memoir, meaning “mindful or remembering. Memory is our ability to encode, store, retain and subsequently recall information and past experiences in the human brain. It is the use of past experience to affect or influence current behaviour. Memory is the sum total of what we remember, it is the ability to recall previously learned facts, experiences, impressions, skills and habits. It is the “process of retaining information over time.” Without a memory of the past we cannot operate in the present or think about the future.

Our memory is what allows us to recognize friends, neighbors to be able to differentiate, analyze and communicate. It helps us to perform some skills such as typing, driving etc. Without memory they will be no sense of recognition. It is the power of keeping facts and being able to recall back, it is an unwritten record of some past event. It is an active system that store, organised and recovers information. Your memory is your minds storehouse; it is the reservoir of your accumulated learning. It is also the total collection of remembered experiences stored in our brain. It is simply the ability to reproduce past learning. In memory we store information over time.
Processes of Memory
For us to recall events, facts or processes, we have to commit them to memory. The processes of forming a memory involves encoding, storing, retaining and subsequently recalling information and past experiences. These are discussed below by McLeod, (2007).

Stage 1: Encoding Information
The first stage of memory is encoding. When we are exposed to information of any kind, we take the information and begin processing it in visual, acoustic, and semantic form. This means that we take the information either as a picture or as a sound or that we give the information meaning. One way to understand encoding is to think of it as the method that you use to lay the groundwork for remembering information. For example, when you look at your lecturer’s phone number on the syllabus, you do that probably because you have a question about an assignment. As you look at the number, you are using visual coding. If you say the number to yourself a couple of times, as you reach for the phone, you are coding acoustically as well. You might notice that the phone number is just one digit off from an old number your parents used to have when you were younger. The words that you use in your self-talk give meaning to the number, so you have also used semantic coding.

Stage 2: Storing Information
Storing information is about keeping the information available so that it can be recalled at a later point. There are two main types of memory, short-term memory (STM) and long-term memory (LTM). Short-term memory is sometimes referred to as active memory. Information that is in STM lasts only up to 30 seconds, and most adults can store five to nine items in STM. If the information is attended to in some way, it can become part of long-term memory. Information in LTM can last for years or even a lifetime. The information in LTM can be recalled as needed.

Memory Retrieval
This refers to getting information out from storage. If we can't remember something, it may be because we are unable to retrieve it. When we are asked to retrieve something from memory, the differences between STM and LTM become very clear. STM is stored and retrieved sequentially or in order, for example, if a group of participants are given a list of words to remember, and then asked to recall the fourth word on the list, participants go through the list in the order they heard it in order to retrieve the information while LTM is stored and retrieved by association. This is why you can remember what you travel to Lagos for if you go back to the room where you first thought about it.

In summary, In order to form new memories, information must be changed into a usable form, which occurs through the process known as encoding. Once information has been successfully encoded, it must be stored in memory for later use. The retrieval process allows us to bring stored memories into conscious awareness.

Types of Memory
Cherry (2014) outlines three separate types of memory, these include: sensory register, short-term memory, and long-term memory. These are discussed below.

Sensory Register
These are the initial part of the memory system in which information from the world is retained in its original sensory form for only an instant. This information is not held longer than the brief time it is exposed to the visual, auditory and other senses. It allows us to do several things to determine if the incoming data should be processed. Sensory register is the earliest stage of memory. At this stage, sensory information from the environment is stored for a very brief period of time, generally for no longer than a half-second for visual information and 3 or 4 seconds for auditory information. We attend to only certain aspects of this sensory memory and allowing some
of this information to pass into the next stage - short-term memory.

Short-Term Memory
Short-term memory, also known as active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. Paying attention to sensory memories generates the information in short-term memory. Most of the information stored in active memory will be kept for approximately 20 to 30 seconds. It is generally described as the recollection of things that happened immediately up to a few days. It is generally believed that five to nine items can be stored in active short-term memory and can be readily recalled. Any new information that enters short-term memory will quickly displace any old information. Similar items in the environment can also interfere with short-term memories. While many of our short-term memories are quickly forgotten, attending to this information allows it to continue on the next stage - long-term memory.

The short-term memory has a limited capacity memory system in which information is retained for as long as 30 seconds unless the information is reheard, in which case, short-term memory system is limited in capacity, but it is relatively longer in duration, to keep information longer in short-term memory it must be reheard or repeated.

Long-Term Memory
Long-term memory refers to the continuing storage of information. In Freudian psychology, long-term memory would be called the preconscious and unconscious. This information is largely outside of our awareness, but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access. Long Term Memory is also described as a system in the brain that can store vast information. This system store information in long term because we cannot forget easily. Long term memory seems to have no finite capacity. That is to say, it is limitless in its capacity for storage. People can learn and retain new facts and skills throughout their lives. Zimmermann (2014) states that experts have differentiated types of memories in the long term memory, these are explained below:

Implicit memory is sometimes referred to as unconscious memory or automatic memory. Implicit memory uses past experiences to remember things without thinking about them. Musicians and professional athletes are said to have superior ability to form procedural memories.

Procedural memory, which is a subset of implicit memory, is a part of the long-term memory responsible for knowing how to do things, also known as motor skills. You don’t have to delve into your memory to recall how to walk each time you take a step.

Some examples of procedural memory are:
- Playing piano
- Skipping
- Playing tennis
- Swimming
- Climbing stairs

Implicit memory requires little effort to recall, while explicit memory requires a more concerted effort to bring to the surface. This involves both semantic and episodic memory. It takes explicit memory to remember that your mother’s birthday is next Wednesday.

Semantic memory is not connected to personal experience. Semantic memory includes things that are common knowledge, such as the names of states, the sounds of letters, the capitals of countries and other basic facts that are not in question. Some examples of semantic memory include:
- Knowledge that the sky is blue
- Knowing how to use a knife and fork
- Remembering what dog or goat is
- Recalling that former Nigerian President Yar’adua died in 2010
This book: Family Education: A Socio-Psychological Approach to the Study of the Family is a text that takes a dive into psychological and sociological issues of the family. Written in fifteen chapters, well laid out, it traces the concept and origins of the human family, and uses a multiplicity of theories in the study of the family. Determinants of family size such as family income, belief and value system, sex of children, along with family planning practices. Family Health education as a set of learning experiences based on principles underlying health education were dealt with along with family nutrition as related to family health. Family communication as the act of information exchange between family members is a functional aspect of the family but conflicts can result from forces that flow in different directions among members due to both verbal and non-verbal communications. Family finance and consumer education dealt with financial patterns of the family and ways of developing sound financial behaviour to cut down family expenses while developing sound consumer culture for the family.

The role of the family in providing warmth and nourishment for its members is captured under family nutrition. Family relationships are connections due to kinship ties linked to some ancestors using a descendency chart to trace all the descendants of an individual and to determine the relationship between two or more people in a family. The concept of domestic violence seen as a pattern of behaviour involving extreme force intended to harm or cause pain against a person in a domestic setting. The key elements of domestic abuse are intimidation, humiliating the other person and physical injury.

Parental responsibility, parenting styles, different roles and responsibilities of a parent are highlighted while child abuse is seen as the principal form of parental malpractice captured in the text. The Family law dwelt on the basic statutes and case precedents that govern the legal responsibilities between individuals who share a domestic connection. The family Will is a crucial document whose use the family needs to get properly educated about as one last disposing document of an individual to ensure one's family is properly informed and does not disintegrate on one's demise. The book rounds up with an inclusion on psycho-therapeutic approaches to handling family problems and the different techniques used by family therapists such as the family genogram and communication skill training model.

It is a book for both undergraduates and post graduate study programmes on Family Studies, Sociology /Social Studies, Family Psychotherapy as well as Family Counselling. It is also recommended for those interested in research on Family Life Education Studies.
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