EDUCATIONAL PSYCHOLOGY
KEY POINTS ON CHILD DEVELOPMENT AND LEARNING PERSPECTIVES

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ISBN

978-978-59804-4-8

Published by:

Institute of Africa Higher Education Research and Innovations (IAHERI), Maryam Abacha American University of Nigeria (MAAUN), Kano

No. 5 Adamu Abubakar Gwarzo Road, Hotoro GRA, Kano

E-mail: iaheripublishing@maaun.edu.ng

Website: www.iaheri.maaun.edu.ng

DOI: https://doi.org/10.59479/jiaheri.v1i1.93

PUBLISHER'S NOTE

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This book entitled "**Educational Psychology: Key points on Child Development and Learning Perspectives"** has been peer – blind reviewed and thoroughly scrutinized for its originality and contribution to scholarship by Our Manuscripts Review Committee. On this note, IAHERI hereby recommends this text book for use in tertiary institutions.

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FORWARD

Reading materials on educational psychology is not always easy to come by. In other words, simple researched notes on child development and learning theories are rarely available. This book is, therefore not only timely but very necessary. Glad to say that the authors have painstakingly prepared a reading note that is not only succinct but comprehensive.

The format used in organizing the text would no doubt arouse the reader's curiosity hence, can lead to easy comprehension of the concepts presented in the text. One basic fact about the book is that the authors carefully selected the topics by paying special attention to undergraduate course outlines.

Educational psychology is not only basic but an indispensable aspect of teacher education. In fact, it is one of the basic knowledge requirements for preservice teachers in educational institutions**.** I, therefore, urge every educationist to use this book titled: **Educational Psychology: Key Points on Child Development and Learning Perspectives**, because it is indeed succinct and comprehensive.

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Department of Education
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PREFACE

Educational Psychology is one of the basic knowledge required in the teaching profession. In this aspect of psychological studies, students are exposed to the concepts of child development and human learning. This text “Educational Psychology: Key Points on Child Development and Learning Perspectives” is an attempt at meeting the learning needs of students who offer the course at the introductory level.

The concept of psychology and its emergence and branches are highlighted in the text. In addition, the book dwelled extensively on meaning and scope of educational psychology, child and adolescent development. Learning and its theoretical viewpoints (such as Behaviorist, Cognitivist, Humanist and Constructivist) as presented in the book no doubt provide further explanations on how knowledge is acquired by learners. The assumptions of the theories and experiments carried out which used to be a nightmare for many students are explicitly illustrated in the text.

Furthermore, the style of presentation of the basic facts is intended to reduce stress in reading and comprehension. Thus, students with diverse study habits would find this book a suitable instrument for an easy understanding of educational psychology.

Above all, teachers, researchers, and policymakers would find this text to be a useful reference material to carry out their functions.

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Chapter One

Meaning and Scope of Educational Psychology

Meaning of Psychology

- The word psychology is derived from the Greek word psycho and logos.
- Psycho means Soul and Logos means Science.
- Thus, it is the science of soul.
- It is scientific because it is a systematic study of observable events/behaviors.
- Such behaviors could be unlearned like the reflexes, physiological processes, and instincts.
- It also includes learned behaviors that are acquired through practice.
- Psychology is also seen as scientific method of collecting data about individuals and groups to analyze and predict their behavior.

Brief History of Psychology

- Psychology as a formal branch of knowledge had been regarded as an aspect of philosophy.
- As a separate discipline, the work and contribution of its pioneers cannot be underestimated.
- The pioneers among which are:
    - Wilhelm Wundt who is referred to as “Father of Scientific psychology”

    - John B. Watson, Herman Ebbinghaus and several other philosophers.

- Wilhelm Wundt founded the first psychological laboratory in University of Leipzig in Germany in 1897, Wundt argued that psychology should focus on the study of conscious experience.
    - He further said that the task before psychologists is the ability to analyze sensations, feelings and images to their most basic parts, just as chemist analyze complex substances.
    - In that way, we will come to understand the nature of the human mind which can be accomplished through introspection – by way asking individual to describe what is going on in their own minds as they perform various task.
    - Wundt was also considered by many to be founder of psychology. He also developed the first widely accepted school of thought known as structuralism which focused on the inner workings of consciousness.
- Another psychologist who contributed immensely to the development of psychology is John B. Watson.
    - Watson moved psychology away from studying the constraints of the mind to studying only observable behaviours, an approach known as behaviourism.
    - In this view, he argued that “mind” or “conscious experience” cannot be seen.
    - All we can observe is overt behavior and people can’t report accurately what goes on in their minds.

He further stated the idea using introspection as a research method build or new science is ridiculous.

- Overt behaviour is the only thing that can be observed or measured scientifically, and this should be the focus of psychology.

Branches of Psychology

- **Cognitive Psychology:** Cognitive is the general term which we give to mental activities such as remembering, forming concepts, using language or attending to things. Cognitive psychology is concerned on mental characteristics such as memory, attention and the process of thinking
- **Physiological Psychology:** Physiological psychology involves looking at how the brain and the nervous system operate, and how 'our experience can be affected by physiological processes and mechanisms. Physiological psychologist study the nervous system and which parts of the brain are involved in behaviour and cognition.
- **Social Psychology:** Social psychology is the study of how people interact with one another, and also how they come to make sense of what is going on in their social world. A large part of social psychology has been concerned with the study of social behaviour, particularly in terms of conformity to social norms, obedience to authority and how people behave in large groups, like crowds, aspects of interpersonal relationships etc.
- **Developmental Psychology:** This is concerned with how people develop throughout their lives, from infancy to old age- It also involves language, motor and

cognitive development and aspect of psychological and social development. Developmental psychology has been also concerned with the various characteristics ' associated with the stages of growth and development.

- **Comparative Psychology:** comparative psychology involves studying animals and it got its name from the way psychologists sometimes go on to make comparisons between animals and human beings, or between different species of animals, in order to find out more about the underlying mechanism. This has been one of the most controversial areas of psychology, partly because of the use of laboratory animals. Although nowadays, comparative psychologists are more concerned with how animals behave in their natural setting or environments.
- **Experimental Psychology:** This is concerned with studying human and animal behaviour in a laboratory setting. The experiment conducted by Thorndike and Skinner in a laboratory falls under the purview of experimental psychology.
- **Industrial/Organizational Psychology:** This is the application of psychological principles and knowledge to personnel policies, working conditions, production efficiency and rational decision making. It also involves motivating workers intrinsically or extrinsically to maximize output and to meet set organizational goals
- **Clinical Psychology:** Clinical psychology studies the diagnosis, causes and treatment of mental disorders. For example, clinical psychologists have recently devised effective forms of treatment for reducing

aggression among children

- **Counseling Psychology:** This area of psychology assists individuals in dealing with many personal problems that do not involve psychological disorders. For example counseling psychologists assist individuals in career planning and in developing more effective interpersonal skills.
- **Forensic Psychology:** As an applied psychology, forensic psychology is concerned with the application of knowledge of human behaviour in the administration of justice. They perform task like consultancy service to the police in the cause of investigation of crimes and for the purpose of training police officers, professional advise to the court in determining whether an accused is psychological culpable for the crime he is charged with.

Meaning of Educational Psychology

- Educational psychology is one of the branches of applied psychology.
- It is an attempt to apply the knowledge of psychology to the field of education.
- In other words, educational psychology is the study of the experience and behavior of the learner in relation to educational environment.
- Educational psychology describes and explains the learning experience of an individual from birth through old age.
- It could also be seen as the science of education.
- Educational psychology is an applied branch of psychology which deals with the application of psychological principles and techniques to the

development of educational programmes and strategies and to solve educational problems.

Aims of Educational Psychology

- Education by all means is an attempt to mould and shape the behavior of students.
- Its aim is to produce desirable changes in students for all round development of their personalities.
- To avail the teacher the knowledge and understanding of the developmental process of the learners, the range and limit of their capabilities, the process by which they learn and their social relationships.

Nature of Educational Research

- By applying the principles and techniques of psychology, it tries to study the behaviors and experiences of the learners.
- Educational psychology limits its study to the behavior of the learners in relation to educational environment.
- It gives the necessary knowledge and skills for imparting knowledge to learners in a satisfactory manner.

Scope of Educational Psychology

- The scope of educational psychology revolves around the following boundaries:

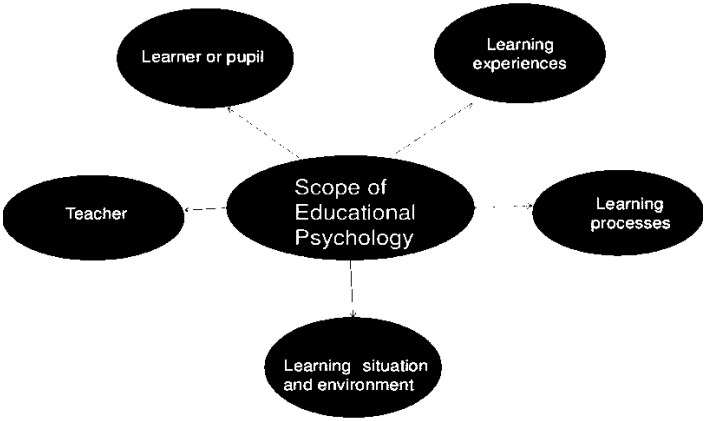

Fig. 1 Scope of Educational Psychology

The Learner

- The total subject matter of educational psychology primarily revolves around this factor (leaner).
- This subject acquaints us with the need of knowing the learner and deals with the learner and the techniques of knowing them well.

Learning Experience

- This is the second aspect of the scope of educational psychology.
- Educational psychology helps in deciding the kind of learning experiences desirable at different stages of growth and development of the learner so that the experiences can be acquired with a greater ease and satisfaction.
- Here, educational psychology facilitates the selection of desirable experiences for the learners.

Learning Processes

- After knowing the learner and deciding on the learning experiences that are to be provided, the next problem

arises when helping learners to properly acquire these experiences with ease and convenience.

- Here educational psychology deals with the nature of learning and how it takes place and comprises topics as laws, principles and theories of learning, remembering and forgetting, memory, perception, concept formation, thinking and reasoning process, problem solving, transfer of learning etc.

Learning Situation of Environment

- Under this aspect, educational psychology focuses on the environmental factors and learning situations which come between the learner and the teacher.

The Teacher

- Educational psychology emphasize on the need to knowing the self for a teacher to play his role properly in the process of education.
- It discusses the conflicts, motivation, anxiety, adjustment level of aspiration etc.
- More so, it throws light on the essential personality traits, interest, aptitudes, characteristics of effective teaching etc. so as inspire him to become a successful teacher.

Methods of Investigation in Educational Psychology

- We have stated earlier in this chapter that educational psychology uses scientific method in its approach in investigating the underlying factors associated with the occurrence of a particular behaviour.
- They also use scientific method in solving many problems in education.
- The following are the methods used by educational psychologists for investigation
  - Observational Method
  - Case Study
  - Test method
  - Survey method

- Experimental method

- **Observation method:** This involves a systematic procedure of watching closely and recording of events as they occur in real situation. For example psychologists usually observe human and animal behaviour in their natural settings. It becomes an experimental procedure when such observations are standardized through laboratory controls.
- **Survey Method:** This is a situation in which data are collected from a representative sample using questionnaire, interviews, observation and test. Data collected are transformed into numerical and quantitative value.
- **Test method:** Tests are series of tasks or stimuli meant to elicit responses from the learners' on the basis of which inferences are made on the extent at which an individual has acquired a particular training. Psychologists use test to measure psychological constructs like attitudes, aptitudes, interest, abilities and other traits
- **Case Study:** This is a type of study in which an individual, groups, institutions, or communities is studied. It involves an intensive examination in finding solution to problems emanating from an individual, group, institutions or communities. Example of a case study is a study of causes of drop out in school,
- **Experimental Method:** In experimental study, the experimenter investigates the effect, of at least one independent variable on one or more dependent variable. It also involves systematic control and manipulation of the independent variable. Experimental procedure involves two set of groups or subjects, the experimental and control

groups. The experimental group is subjected to a treatment while the other group does not receive treatment. The control group provides the standard against which the experimental group is compared.

Relevance of Educational Psychology to Teacher Education

- Educational Psychology helps teachers to understand the meaning of teaching.
- Educational psychology help teachers to understand the learning process.
- Through education Psychology, teachers will have knowledge of students they are teaching.
- Education Psychology also help teachers to know students who are exceptional.
- Education Psychology help teachers to know that individual differences exists in children.
- Educational psychology also helps teachers to understand instructional strategies.
- Through educational psychology teachers also understand assessment strategies.
- Educational psychology help teachers to know and use appropriate motivational strategies.
- Educational psychology helps to maintain discipline.

Chapter Two

HUMAN REPRODUCTION

Meaning of Human Reproduction

- Human reproduction is any form of sexual reproduction resulting in the conception of a child.
- Typically involving sexual intercourse between a man and a woman.
- During intercourse, the interaction between the male and female reproductive systems results in fertilization of the woman's ovum by the man's sperm, which after a gestation period is followed by childbirth.
- The fertilization of the ovum may nowadays be achieved by artificial insemination methods, which do not involve sexual intercourse.

The Human Male

- The male reproductive system contains two main divisions: the testicles where sperm are produced, and the penis.
- In humans, both of these organs are outside the abdominal cavity.

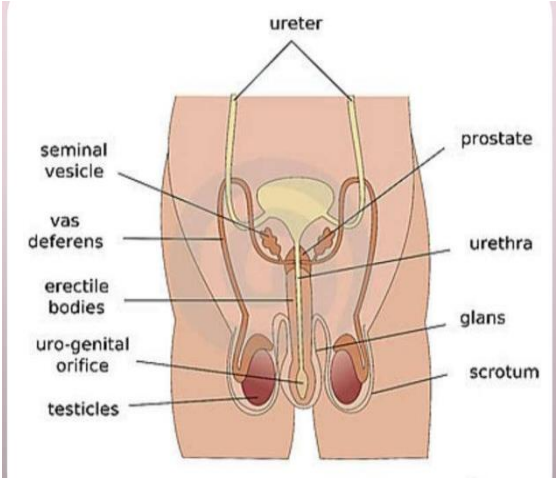

Fig. 2 Male Reproductive organs

Testicles

- There is one pair of testicle that develop inside the body of unborn baby.
- They move down to the outside of the body of the baby before birth.
- Usually held in a muscular sac called scrotum.
- They produce male gametes called sperm cells.

Penis

- This is a cylindrical tube that delivers sperm cells to the body of a female for fertilization.
- It contains spongy tissues along its length that can fill with blood to make it hard, stiff and erect.

The Human Female

- The female reproductive system likewise contains two main divisions: the vagina and uterus, which act as the receptacle for semen, and the ovaries, which produce the ova.

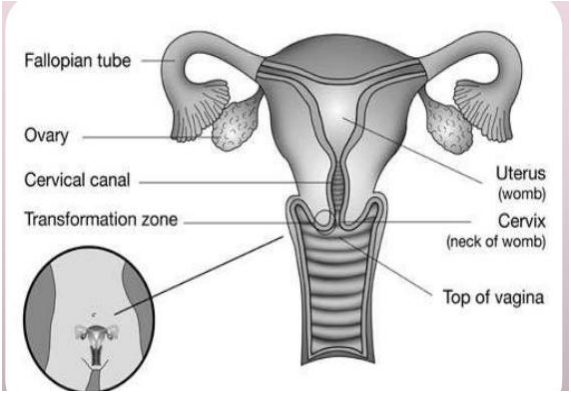

Fig. 3 Female Reproductive Organs

Ovaries

- Pair of oval shaped organs that develop inside the body of a woman.
- They produce egg or ovum.
- At birth the ovaries contain 2-4 million of un-matured eggs.
- At puberty some of the eggs become matured.
- A matured woman releases one egg every month as part of menstrual cycle.

Uterus

- It is the muscular organ present at the lower abdomen.
- Muscles of the uterus have the ability to contract and expand.
- Growing baby is accommodated in this organ.

Vagina

- This is the muscular tube-like structure that connects to the uterus.
- It is the root for menstrual blood flow.
- It is the pathway for sperm cells that enter the woman's body.

- During the process of child birth the baby comes out of the mother through vagina.

Process of Human Reproduction

- Human reproduction begins with sexual intercourse, followed by nine months of pregnancy before childbirth.
- Many years of parental care is required before a human child becomes independent.

Menstrual Cycle

- This occurs from the beginning of puberty.
- It occurs approximately every month in female.
- It does not occur when the female is pregnant.
- A mature woman releases an ovum/egg every month.
- This ovum passes from the oviduct to the uterus.
- If on its way it is fertilized, it forms a foetus.
- But when the ovum is not fertilized, it is thrown out of the body through vagina along with blood and mucus.
- This blood and mucus flow last in the female body for about 3-4 days every month.
- This causes menstruation.

Sexual intercourse

- Human reproduction takes place as internal fertilization by sexual intercourse.
- During this process, the erect penis of the male is inserted into the female's vagina until the male ejaculates semen, which contains sperm.
- This process is also known as "coitus", "mating" or "having sex".
- The sperm travels through the vagina and cervix into the uterus or fallopian tubes for fertilization of the ovum.
- Upon fertilization and implantation, gestation of the fetus then occurs within the female's uterus

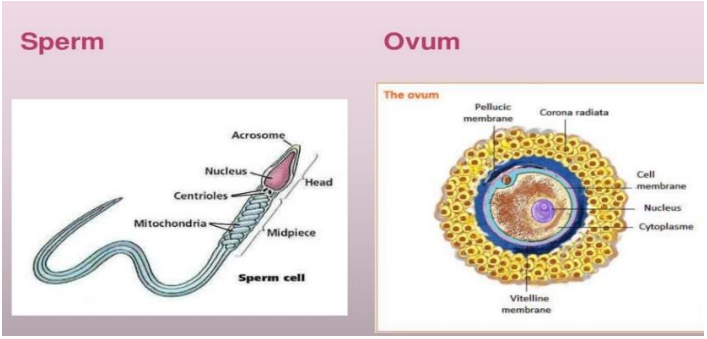

Fig. 4 Structures of a Sperm and an Ovum

Fertilization

- When the sperms reached an ovum in the oviduct they move around it.
- The head of only one of the sperm cell penetrate the cell membrane of the ovum.
- Then the sperm's head breaks off from the tail and moves through ovum's cytoplasm until it reaches the nucleus.
- When the head reaches the nucleus fertilization takes place.
- The fertilized cell is called the zygote.
- The zygote implants itself on the wall of the uterus.

Pregnancy

- Pregnancy is the period of time during which the fetus develops, dividing via mitosis inside the female.
- During this time, the fetus receives all of its nutrition and oxygenated blood from the female, filtered through the placenta, which is attached to the fetus' abdomen via an umbilical cord.
- This drain of nutrients can be quite taxing on the female, who is required to ingest slightly higher levels of calories.

- In addition, certain vitamins and other nutrients are required in greater quantities than normal, often creating abnormal eating habits.
- Gestation period is about 266 days in humans.

Development of a Baby

- After fertilization or during pregnancy the zygote divides into two cell then four and so on.
- It does not increase in size in the first seven days.
- The cells become smaller and smaller at each division.
- After seven days the cell looks like a hallow ball which later sinks into the thick lining of the uterus wall.
- The process of zygote sinking into the wall of the uterus is called implantation.

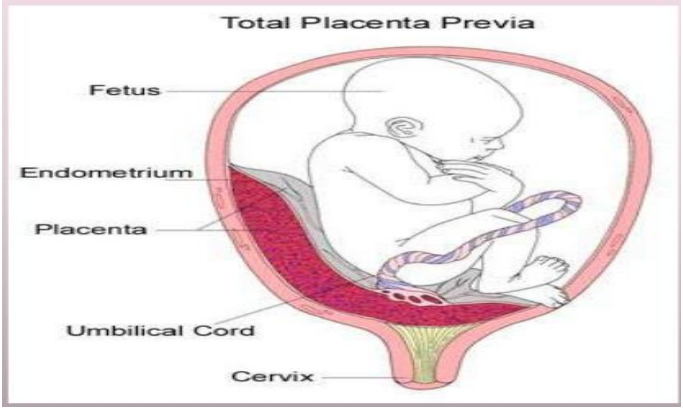

Fig. 5 A developing baby in the placenta

Birth

- Once the fetus is sufficiently developed, chemical signals start the process of birth, which begins with the fetus squeezing through the vagina, and eventually out of the mother.
- The newborn, which is called an infant in humans, should typically begin respiration on its own shortly

after birth. Not long after, the placenta is passed as well.

- The end of the umbilical cord attached to the child's abdomen eventually falls off on its own.
- The mid-wife or nurse assisting the birth will usually detach the mother from the baby using a clamp, then cutting it off.

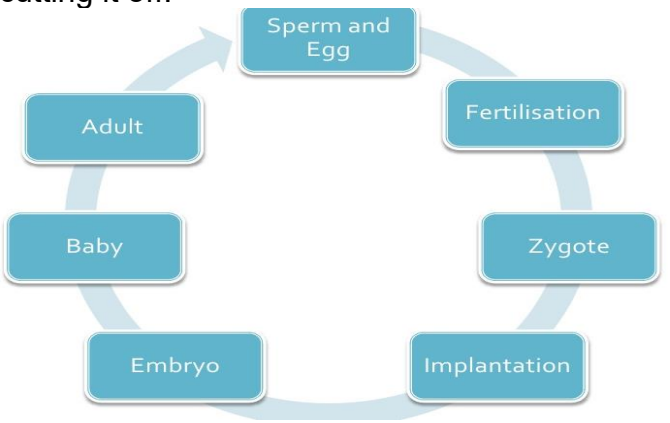

Fig. 6 Human Reproductive Cycle

Chapter Three

Child Development

Meaning of Child Development

- Child development refers to the biological, psychological and emotional changes that occur in human beings between birth and the end of adolescence, as the individual progresses from dependency to increasing autonomy.

Periods of child development

- Newborn (ages 0–1 month);
- Infant (ages 1 month – 1 year);
- Toddler (ages 1–3 years);
- Preschooler (ages 4–6years);
- School-Aged Child (ages 6–13 years);
- Adolescent (ages 13–20).

Factors that Influence Child Development

- Heredity guides every aspect of physical, cognitive, social, emotional, and personality development.
- Family members, peer groups, the school environment, and the community influence how children think, socialize, and become self-aware.
- Biological factors such as nutrition, medical care, and environmental hazards in the air and water affect the growth of the body and mind.
- Economic and political institutions, the media, and cultural values all guide how children live their lives.
- Critical life events, such as a family crisis or a national emergency, can alter the growth of personality and identity.

Aspects of child development

- **Physical growth of a Child**
  - Physical growth in stature and weight occurs over the 15–20 years following birth, as the individual changes from the average weight of 3.5 kg and length of 50 cm at full-term birth to full adult size.
  - As stature and weight increase, the individual's proportions also change, from the relatively large head and small torso and limbs of the neonate, to the adult's relatively small head and long torso and limbs.

    Individual differences in growth
    - Individual differences in height and weight during childhood are considerable.
    - Some of these differences are due to family genetic factors, others to environmental factors, but at some points in development they may be strongly influenced by individual differences in reproductive maturation.
- **Cognitive/Intellectual development**
  - The capacity to learn, remember, and symbolize information, and to solve problems, exists at a simple level in young infants, who can perform cognitive tasks such as discriminating animate and inanimate beings or recognizing small numbers of objects.

    Individual differences in cognitive development
    - There are normal individual differences in the ages at which specific cognitive abilities are achieved
    - Schooling for children in industrialized countries is based on the assumption that these differences are not large.

    - Atypical delays in cognitive development are problematic for children in cultures that demand advanced cognitive skills for work and for independent living.
- **Social-emotional development**
    - Newborn infants do not seem to experience fear or have preferences for contact with any specific people.
    - In the first few months they only experience happiness, sadness, and anger.
    - A baby's first smile usually occurs between 6 and 10 weeks.
    - It is called a 'social smile' because it usually occurs during social interactions.
- **Language development**
    - In addition to acquiring a large spoken vocabulary, there are four main areas in which the child must attain competence, regardless of the language or dialect spoken.
    - These include;
        - phonology or sounds,
        - semantics or the encoded meanings,
        - syntax or the way in which words are combined and
        - pragmatics or knowledge of how language is used in different contexts.
    - From about 6 to 9 months babies produce more vowels, some consonants and "echolalia", or the frequent repetition of sounds like "dadadada" which appear to have some phonetic characteristics of later speech.
- **Individual differences in language development**
    - Slow Expressive Language Development (SELD) a delay in the use of words coupled with normal

understanding, is characteristic of a small proportion of children who later display normal language use.

- Dyslexia is a significant topic in child development as it affects approximately 5% of the population. Essentially it is a disorder whereby children fail to attain the language skills of reading, writing and spelling commensurate with their intellectual abilities. Dyslexic children show a range of differences in their language development, from subtle speech impairments to mispronunciations to word-finding difficulties.
- The most common phonological difficulties are limitations of verbal short-term memory and phonological awareness. Such children often have difficulties with long-term verbal learning such as months of the year or learning tables. In the late 1980s the phonological deficit hypothesis has become the dominant explanation.
- The difficulties in early articulation, basic phonological skills and acquiring basic building blocks means that dyslexics have to invest too many resources in just coping with the basics rather than acquiring new information or skills. Early identification enables children to receive help before they fail.
- Atypically delayed language development may be diagnostic of autism, and regression of language may indicate serious disabilities like Rett syndrome. Poor language development also accompanies general developmental delays such as those found in Down syndrome.

Chapter Four

Stages and Essential Features of Human Growth and Development

Introduction

- Growth and developments are very similar for all Human.
- Around the world, most infants begin to focus their eyes, sit up, and learn to walk at comparable ages, and children begin to acquire language and develop logical reasoning skills at approximately the same time.

Prenatal stage (0-9 months)

- Human development begins with conception, the fertilization of an egg by a sperm.
- Over the next nine months, astounding advances in physical growth occur.
- The fertilized egg becomes a complex newborn capable of surviving (with assistance) outside of the womb.
- The prenatal months are not only a time of dramatic developmental changes, but also the most hazardous period of the life course.
- A developing being is the most vulnerable to harm during periods of very rapid growth.
- However, hazards to prenatal development can be reduced through the mother's conscientious care of herself and her developing child.

Stages of Prenatal Growth

- **Germinal Period***,*
  - This period lasts from conception until day 14, the fertilized egg, called a *zygote,* undergoes rapid cell division and growth.
- **Embryonic Period**
  - This period lasts from day 14 through the eighth week.
  - During this time, major structures and organ systems begin to form.
- **Fetal Period**
  - From the ninth week until birth, major organs grow in size and complexity, the muscular and nervous systems develop, and the sex organs form.

Problems of prenatal development

- Viruses and bacteria that cause disease in the mother can cross the placental barrier to infect and damage the fetus e.g. HIV
- Certain medicinal drugs, such as aspirin and antidepressants, may harm the fetus, and maternal use of psychoactive drugs like heroin, cocaine, and marijuana can cause long-term behavioral problems or learning disabilities in the child.
- Moderate or heavy consumption of alcoholic beverages during pregnancy can cause serious damage to the fetus, including fetal alcohol syndrome, and use of tobacco can impair fetal growth and lead to other complications.
- The mother's exposure to lead, mercury, polychlorinated biphenyls (PCBs), and other industrial chemicals—through, for example, drinking contaminated water or eating fish from polluted waters—can harm prenatal growth and cause birth defects because these substances are absorbed by the fetus.
- Nutritional deficiencies in the mother's diet can harm the growing fetus.

The Newborn Child

- The full-term newborn, or *neonate,* has remarkable competencies for surviving in the outside world.
- Many of these are reflexes—automatic or involuntary responses.
- The sucking reflex, for example, causes newborns to begin to suck on anything touching their lips, and the rooting reflex causes them to turn their heads toward anything that touches the cheek and to attempt to suck on it.
- A surprisingly strong grasping reflex causes newborns to clasp their hands around anything put in their palms.
- In addition, newborns are highly attentive to the events around them.
- They look toward moving objects and listen closely to the sound of voices—especially their mother's voice, which they heard inside the womb.
- These characteristics deepen parents' emotional attachments to their newborns.

Infancy (Birth-2 years)

- Although birth is the culmination of months of prenatal development, people commonly regard infancy, from birth to age two, as a time of beginnings.
- Infancy is when personality, social attachments, thinking, and language first take shape.
- In two short years, the helpless newborn grows into a toddler with an impressive range of physical, cognitive, and social skills.

Early Childhood (2-6 years)

- Early childhood (ages two to six) is when language revolutionizes children's thinking, remembering, and understanding of emotions, self, and the social world.
- Once regarded as "egocentric," preschoolers are now viewed by developmental scientists as deeply

interested in how others' beliefs, feelings, and desires compare with their own.

Middle Childhood (6-12 years)

- During middle childhood, from about ages 6 to 12, children acquire heightened capacities for judgment, reasoning, social understanding, emotion management, and self-awareness.
- At the same time, the social world of middle childhood broadens beyond the family to include the school, neighborhood, peer group, and other influences.
- Children begin to perceive themselves in multiple roles and relationships besides those of the family, even though family relationships remain central.

Adolescence (12 years and above)

- The onset of puberty marks the beginning of adolescence.
- Physical growth and development, including sexual maturation, is an important part of adolescence.
- Adolescents achieve new cognitive skills permitting highly abstract thinking, engage in new kinds of social intimacy with peers, and embark on a search for identity that result in greater awareness of the self.
- Adolescence includes risks for psychological turmoil, but most children make their way through this period without undue stress.

Puberty

- Puberty is a period of several years in which rapid physical growth and psychological changes occur, culminating in sexual maturity.
- The average onset of puberty is at 10 or 11 for girls and age 12 or 13 for boys.
- Every person's individual timetable for puberty is influenced primarily by heredity, although

environmental factors, such as diet and exercise, also exert some influence.

- These factors can also contribute to precocious puberty and delayed puberty.

Characteristics of Puberty

- Appearance of a deeper voice and larger adam's apple in boys, and development of breasts and more curved and prominent hips in girls.
- The testes primarily release testosterone, and the ovaries predominantly dispense estrogen.
- Some boys may develop gynecomastia due to an imbalance of sex hormones, tissue responsiveness or obesity.
- Facial hair in males normally appears in a specific order during puberty.
- The first facial hair to appear tends to grow at the corners of the upper lip, typically between 14 to 16 years of age.
- The major landmark of puberty for males is the first ejaculation, which occurs, on average, at age 13.
- For females, it is menarche, the onset of menstruation, which occurs, on average, between ages 12 and 13.
- Girls have usually reached full physical development by ages 15–17, while boys usually complete puberty by ages 16–18.
- Girls attain reproductive maturity about 4 years after the first physical changes of puberty appear.

Psychological impacts of Puberty

- Early maturing boys are usually taller and stronger than their friends.
- They have the advantage in capturing the attention of potential partners and in becoming hand-picked for sports.

- Pubescent boys often tend to have a good body image, are more confident, secure, and more independent.
- Late maturing boys can be less confident because of poor body image when comparing themselves to already developed friends and peers.
- Early sexual maturation in boys can be accompanied by increased aggressiveness due to the surge of hormones that affect them.
- Because they appear older than their peers, pubescent boys may face increased social pressure to conform to adult norms.
- Society may view them as more emotionally advanced, despite the fact that their cognitive and social development may lag behind their appearance.
- For girls early maturation can sometimes lead to increased self-consciousness, though a typical aspect in maturing females.
- Because of their bodies developing in advance, pubescent girls can become more insecure.
- Girls may have to deal with sexual advances from older boys before they are emotionally and mentally mature.

Chapter Five

Theories of Human Growth and Personality Development

Meaning of Growth and Personality Development

- Growth refers to an increase in physical size of whole body or any of its part, and can be measured in inches or centimeters and in pounds or kilograms.
- Personality can be defined as a dynamic and organized set of characteristics or traits possessed by a person that uniquely influences his or her cognitions, motivations, and behaviors in various situations.
- It is an individual's unique and relatively consistent patterns of thinking, feeling and behaviors.
- Development refers to progressive increase in skills and capacity.

Theories of Human Growth and Personality Development

- Theories of human growth and personality development provide a framework for thinking about human growth, personality development and learning.
- Several theories of human growth and development exist, but in this text, emphasis shall be on some theories such as; psycho-social development, cognitive development, moral and personality development.

Theory of Psycho-social Development

- Erick Erickson's theory of psycho-social development is based mostly on the effects of the social environment on the development of the child.
- He divides his psycho-social theory into eight stages.
- The eight stages are:
  - Trust VS Mistrust
  - Autonomy VS Shame
  - Initiative VS Guilt
  - Industry VS Inferiority
  - Identity VS Confusion
  - Intimacy VS Isolation
  - Generativity VS Stagnation
  - Integrity VS Despair
- In each stage, the task of each individual is to strike a balance between two extremes.
- The name Erickson gives to each of his stages are the extreme qualities that each individual must balance according to their own situation.
- An important principle of Erickson's theory is that each succeeding stage depends greatly on the equilibrium established in each of the previous stages.
- The first stage: Trust VS Mistrust (12 – 18 months).
  - In this stage, a child learns to trust and mistrust the significant person in life (e.g., caregivers).
  - Because an infant is utterly dependent, the development of trust is based on the dependability and quality of the child's caregiver.

  - According to their experience, each child combines these two extremes into a functional or dysfunctional personality.
- The second stage: Autonomy VS Shame (1year – 3years).
  - During this stage, the child begins to learn to do things for himself like toilet training.
  - According to his success and reactions from significant persons, he learns to balance these two extremes (autonomy or shame).
- The third stage: Initiative VS Guilt (3 years – 7 years).
  - During this stage, the child begins to explore the environment within the limits set by significant persons (e.g., parents).
  - During the preschool years, children begin to assert their power and control over the world through plays and other social interactions.
  - When an ideal balance of individual's initiative and a willingness to work with others is achieved, the ego quality known as purpose emerges.
- The fourth stage: Industry VS Inferiority (7 years – 11 years).
  - In this stage, the child attempts to balance doing things on his own with his feelings of inferiority.
  - Children who are encouraged and commended by parents and teachers develop a feeling of competence and belief in their skills.

  - Those who receive little or no encouragement from parents, teachers or peers will doubt their abilities to be successful.
- The fifth stage: Identity VS Confusion (11years – 20 years).
  - This stage begins from puberty until early adulthood.
  - From about 11 years adolescents begin to discover their gender role as influenced by significant persons.
  - 50% of sexual identity is attributed to genetic factors while the social environment contributes the other half.
  - Children who receive proper encouragement and reinforcement through personal exploration will emerge from this stage with strong sense of self and a feeling of independence and control.
  - Those who remain unsure of their belief and desires will feel insecure and confused about themselves and the future.
- The sixth stage: Intimacy VS Isolation (20 years – 40 years).
  - In this stage much of the individual's capacity for intimacy depends upon their social skills learnt in earlier stages.
  - People develop close, committed relationship with others.
  - Those who are successful will form relationship that are committed and secured.

- The seventh stage: Generativity VS Stagnation (40 years – 65 years).
  - During adulthood individual continue to build his live by focusing on his family and career.
  - During this stage, the individual learns to value contributing to next generation.
  - Those who are successful will feel that they are contributing to the world by being active in the home and community.
  - Those who fail to attain this skill will feel unproductive and uninvolved in the world.
- The eight stage: Integrity VS Despair (65 years & beyond).
  - This is the late adulthood stage which begins from 65 years of age.
  - This stage occur during old age and is focused on reflecting back on life.
  - The person realizing their own mortality begins to evaluate their life.
  - Those who are unsuccessful during this stage will feel that their life has been wasted and will experience many regrets.
  - The individual will be left with feelings of bitterness and despair.
  - The re-evaluation is more productive when done together with a significant persons.

Theory of Cognitive Development

- Jean Piaget was a Swiss theorist who posited that children learn actively through the play process.

- He suggested that the adult's role in helping the child learn was to provide appropriate materials for the child to interact and construct.
- He would use Socratic questioning to get the children to reflect on what they were doing.
- He would try to get them to see contradictions in their explanations.
- He also developed stages of development.
- His approach can be seen in how the curriculum is sequenced in schools, and in the pedagogy of preschool centers across.

Piaget Stages of cognitive development

- **Sensorimotor:** (birth to about age 2)
  - During this stage, the child learns about himself and his environment through motor and reflex actions.

Fig. 7 Sensorimotor stage

- **Preoperational:** (begins about the time the child starts to talk to about age 7)
  - Applying his new knowledge of language, the child begins to use symbols to represent objects.

Fig. 8 Preoperational stage

- **Concrete:** (about first grade to early adolescence)
  - The child develops an ability to think abstractly and to make rational judgments about concrete or observable phenomena, which in the past he needed to manipulate physically to understand.

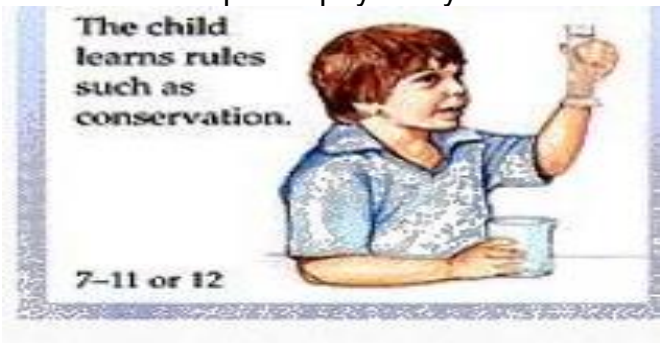

Fig. 9 Concrete operational stage

- **Formal Operations**
  - This stage brings cognition to its final form.
  - This person no longer requires concrete objects to make rational judgements.
  - At this point, he is capable of hypothetical and deductive reasoning.

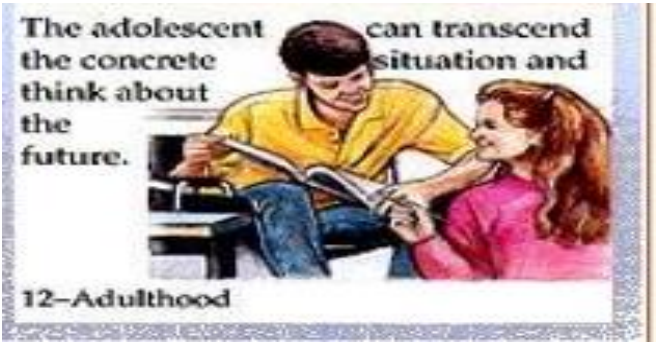

Fig. 10 Formal operational stage

Cognitive Factors of Development

- **Schemas**
  - A schema describes both mental and physical actions involve in understanding and knowing.
  - Schemas are categories of knowledge that help us to interpret and understand the world.
  - E.g. a child's schema about a small aerophane may make him belief that all aeroplanes are small.
- **Assimilation**
  - This is the process of taking in information into previously existing schemas.
  - The process is somewhat subjective, because we tend to modify experience or information somewhat to fit in with our pre-existing belief.
  - E.g. seeing an aeroplane and labelling it as aeroplane in the aeroplane schema.
- **Accommodation**
  - This is the process of changing or altering our existing schemas in the light of new information of experiences.
- **Equilibrium**
  - This is the process of maintaining balance between assimilation and accommodation.

- As children progresses through the stages of cognitive development, it is important to strike a balance between applying previous knowledge (assimilation) and changing behavior to account for new knowledge (accommodation).

Theory of Personality Development

- Personality theory attempt to describe and explain how people are similar, how they are different, and why every individual is unique.
- Common perspectives of personality include; psychoanalytic, traits, humanistic and social cognitive.

Psychoanalytic Theory

- This theory was founded by Sigmund Freud (1856-1939).
- He proposed the first complete theory of personality.
- Freud posits that a person's thoughts and behaviors emerge from tension generated by unconscious motives and unresolved childhood conflicts.
- He argued that human mind exist in three states: conscious, preconscious and unconscious**.**

  Conscious Mind
  - This refers to all the thoughts, feelings and sensations that someone is aware of at a particular moment.

  Preconscious Mind
  - This is the region of the mind holding information that is not conscious but is easily retrievable into conscious awareness.
  - It also holds thoughts and memories not in one's current awareness but can easily be retrieved (childhood memories, phone number).

Unconscious Mind

- This refers to a region of the mind that includes unacceptable thoughts, wishes, feelings and memories.
- The individual may not be aware of these thoughts, wishes etc., but they exert great influence over their conscious thoughts and behaviors.

Psychoanalytic Divisions of the Mind

Id – instinctual drives present at birth;

- It is the part of personality that consists of unconscious energy from basic aggressive and sexual drives.
- It does not distinguish between reality and fantasy
- It operates according to the pleasure principle.
- It demands immediate gratification.
- It is the most fundamental human motive.
- Sources of energy of Id are;
  - Eros – collective instinct for self-preservation or life instinct.
  - Thanatos – death instinct, aggression, self-destructive actions.
  - Libido – sexual energy or motivation.

Ego – develops out of the id in infancy;

- It is the part of personality that mediates the demands of the Id without going against the restraints of the superego.
- It understands reality and logic.
- It mediates between id and superego.
- Ego reality principle is the ability to postpone gratification in accordance with demands of reality.
- Ego is rational, organized, logical and mediator to demands of reality.

- It can repress desires that cannot be met in an acceptable manner.

Superego

- It internalizes societies and parental moral standards.
- It is one's conscience which focuses on what the person "should" do
- It develops around ages 5-6.
- It is partially unconscious state of the mind.
- It can be harshly punitive using feelings of guilt.

Psychosexual Stages of Personality Development

- Freud identified five childhood stages of development during which the Id's pleasure seeking energies are focused on different parts of the body.
- The stages include; oral, anal, phallic, latency and genital.

Oral Stage (Birth – 1 year)

- During this period, mouth is associated with sexual pleasure.
- Pleasure comes from chewing, biting and sucking.
- Weaning a child can lead to fixation if not handled carefully.
- Fixation can lead to oral activities in adulthood.

Anal Stage (1 – 3 years)

- Gratification comes from bowel and bladders functions.
- Toilet can lead to fixation if not carefully handled.
- Fixation can lead to anal retentive or expulsive behaviors in adulthood.

Phallic Stage (3 – 5 years)

- At this stage, focus of pleasure shifts to the genitals.
- Sexual attraction for opposite sex parent.
- Boys cope with incestuous feelings toward their mother and rival feelings toward their father. This is

called Oedipus Complex (for boys) and Electra Complex (for girls).

Oedipus Complex

- This is a situation where boys feel hostility and jealousy towards their fathers but knows their father is more powerful.
- Castration Anxiety results in boys who feel their father will punish them by castrating them.
- This behavior is resolved through identification; by imitating and internalizing one's father's values, attitudes and mannerisms.
- The fact that only the father can have sexual relations with the mother becomes internalized in the boy as taboo against incest in the boy's superego.

Electra Complex

- Girls also have incestuous feelings for their father and compete with their mother.
- Penis Envy; whereby little girl suffer from deprivation and loss and blames her mother for "sending her into the world insufficiently equipped" causing her to resent her mother.
- In an attempt to take her mother's place she eventually identifies with her mother.
- Fixation can lead to excessive masculinity in males and the need for attention or domination in females.

Latency Stage (5 – puberty)

- In this stage, sexuality is repressed due to intense anxiety caused by Oedipus complex.
- Children participate in hobbies, school and same-sex friendships that strengthen their sexual identity.

Genital Stage (puberty – above)

- Incestuous sexual feelings re-emerge but being prohibited by superego are redirected towards others who resemble the person's opposite sex parents.
- Healthy adults find pleasure in love and work.
- Fixated adults have their energy tied up in earlier stages.

Educational Implications of Psychoanalytic Theory

- The emotional nature of motivation for learning is a key aspect of educational theory of the so-called paradigm of education for child development as a whole i.e. 'holistic education'.
- Freud made a great contribution to psychology and learning theory with his discovery of the emotional nature of unconscious motivations.
- Personality theory brought to our awareness the unconscious level of the human 'mind' which is an aspects of human development.
- The mental conflicts of the neurotic are based on the motivating forces and social conflicts of the social environment within which the individual personality develops and functions.
- The concept of 'normality' makes sense only within the context of nature of the social environment in which the individual is functioning.
- The emphasis on sex gave rise to sexuality education.

Theory of Moral Development

- Lawrence Kohlberg theory of moral development posits that human beings progressed in their moral reasoning through a series of stages.
- Kohlberg identified six stages which could be more generally classified into three levels.

LEVEL	STAGE	CHARACTERISTICS OF STAGE/LEVEL
A Preconventional	Stage 1	PUNISHMENT-OBEDIENCE ORIENTATION
	Stage 2	INSTRUMENTAL RELATIVIST ORIENTATION
B Conventional	Stage 3	INTERPERSONAL CONCORDANCE ORIENTATION
	Stage 4	AUTHORITY AND SOCIAL-ORDER MAINTAINING ORIENTATION
C Postconventional Autonomous, or Principled	Stage 5	SOCIAL-CONTRACT LEGALISTIC ORIENTATION
	Stage 6	UNIVERSAL ETHICAL PRINCIPLE ORIENTATION

Fig. 11. Kohlberg stages and levels of moral development

- Moral development is growth, and like all growth takes place according to a predetermined sequence.
- E.g. a child can't walk before he crawls.

Humanistic Theory of Personality Development

- In humanistic psychology it is emphasized people have free will and they play an active role in determining how they behave.
- Accordingly, humanistic psychology focuses on subjective experiences of persons as opposed to forced, definitive factors that determine behavior.
- Abraham Maslow and Carl Rogers were proponents of this view, which is based on the "phenomenal field" theory of Combs and Snygg (1949).
- Maslow spent much of his time studying what he called "self-actualizing persons", those who are "fulfilling themselves and doing the best they are capable of doing".
- Maslow believes all who are interested in growth move towards self-actualizing (growth, happiness,

satisfaction) views. Many of these people demonstrate a trend in dimensions of their personalities.

- Characteristics of self-actualizers according to Maslow include the four key dimensions:
  - **Awareness**- maintaining constant enjoyment and awe of life. These individuals often experienced a "peak experience". He defined a peak experience as an "intensification of any experience to the degree there is a loss or transcendence of self". A peak experience is one in which an individual perceives an expansion of his or herself, and detects a unity and meaningfulness in life. Intense concentration on an activity one is involved in, such as running a marathon, may invoke a peak experience.
  - **Reality and problem centered** - they have tendency to be concerned with "problems" in their surroundings.
  - **Acceptance/Spontaneity** - they accept their surroundings and what cannot be changed.
  - **Unhostile sense of humor/democratic** - they do not like joking about others, which can be viewed as offensive. They have friends of all backgrounds and religions and hold very close friendships.
- Maslow and Rogers emphasized a view of the person as an active, creative, experiencing human being who lives in the present and subjectively responds to current perceptions, relationships, and encounters.
- They disagree with the dark, pessimistic outlook of those in the Freudian psychoanalysis ranks, but rather view humanistic theories as positive and optimistic proposals which stress the tendency of the human personality toward growth and self-actualization.

- This progressing self will remain the center of its constantly changing world; a world that will help mold the self but not necessarily confine it.
- Rather, the self has opportunity for maturation based on its encounters with this world.
- This understanding attempts to reduce the acceptance of hopeless redundancy.

Biopsychological theory of personality

- Some of the earliest thinking about possible biological bases of personality grew out of the case of Phineas Gage.
- In an 1848 accident, a large iron rod was driven through Gage's head, and his personality apparently changed as a result (although descriptions of these psychological changes are usually exaggerated).
- In general, patients with brain damage have been difficult to find and study. In the 1990s, researchers began to use Electroencephalography (EEG), Positron Emission Tomography (PET) and more recently Functional Magnetic Resonance Imaging (FMRI), which is now the most widely used imaging technique to help localize personality traits in the brain.
- One of the founders of this area of brain research is Richard Davidson of the University of Wisconsin–Madison. Davidson's research lab has focused on the role of the prefrontal cortex (PFC) in manifesting human personality.
- In particular, this research has looked at hemispheric asymmetry of activity in these regions.
- Neuropsychological experiments have suggested that hemispheric asymmetry can affect an individual's personality (particularly in social settings) for individuals with NLD (non-verbal learning disorder), which is marked

by the impairment of nonverbal information controlled by the right hemisphere of the brain.

- Progress will arise in the areas of gross motor skills, inability to organize visual-spatial relations, or adapt to novel social situations.
- Frequently, a person with NLD is unable to interpret non-verbal cues, and therefore experiences difficulty interacting with peers in socially normative ways.

Chapter Six

Concept of Learning And Its Theories

Meaning of Learning

- Learning is simply defined as a relatively permanent change in behavior due to experience.
- It could be seen as a process of acquiring or getting knowledge of a subject or a skill by way of study, experience or instruction.

Characteristics of Learning

- Learning Continues throughout life.
- It permeates all aspects of human life.
- Learning is holistic in nature.
- Learning is often a change in human or animal. behavior.
- Learning is developmental.

Types of learning

- **Signal Learning**
  - This is the type of learning in which an individual learns to carry out a general conditioned response towards a given event. Usually this response is emotional
  - E.g. student's reaction when the teacher announces that test will be administered. A feeling of fear caused by loud noise.
- **Stimulus Response Learning**
  - This type of learning takes place when the individual shows a certain response to a discriminated stimulus.
  - E.g. Children start to learn words by repeating the sounds and words of adults.
- **Psychomotor Connection Learning**
  - This type of learning is often called the learning of skills. It involves the connection of two or more units of Stimulus – Response learning. The connection is limited to physical and non-verbal sequence.

- The pre-condition to stabilize the connection is that every S-R bond has to be formed before building the link.
  E.g. Turning the spring of children's Toy. Writing, running, catching and throwing a ball. The strength of the association learnt depend on exercise, past experience and reinforcement.

- **Verbal Association Learning**
  - This type of learning takes place when a learner connects the image of an object observed and the ability to name the object.
  - E.g. Remembering poems, formulae or alphabets in sequence.
- **Multiple Discrimination Learning**
  - This is the type of leaning in which separate associations which have been learnt are connected to form multiple discrimination.
  - Here, learning is expected to commence from simple to complex.
  - By this, the individual learns to identify associations which may be confused with object or phenomenon resembling each other.
  - E.g. Differentiating solid, liquid and gas.
- **Concept Learning**
  - This type of learning refers to when a learner responds to a stimulus according to its abstract characteristics such as position, shape, color and number and not according to concrete physical characteristics.
  - E.g. A child learns to call 5cm cube a 'block' and uses this name for other objects that are different in size and shape. Then he learns the concepts of cube and with this he can identify the class of objects that differ in characteristics such as materials, color, texture and size.

- **Principle Learning**
  - A principle is a chain of two or more concepts. In principle learning, one needs to associate more than one concepts.
  - E.g. The relationship of circumference of a circle with its diameter. Here three concepts are related: circumference, pi, and diameter.
- **Problem Solving Learning**
  - In problem solving the individual uses principles that have been learnt to achieve an aim.
  - Beside achieving the aim, he acquires the skill to use his new knowledge and in time the skill is enhanced.
  - He will then be able to handle similar problems.
  - What has been learnt is a higher order principles that combines many lower order principles.
  - E.g. Experimenting to test the effects of different types of fertilizer on plant growth.

Nature of Learning

- Learning is a process of adaptation and adjustment to the changing conditions of the environment.
- Learning is improvement is a process of improvement with practice or training.
- Learning is organizing experience.
- Learning brings about behavior change.
- Learning involves active participation of the learner.
- Learning is directed towards achieving a goal.
- Learning is continuous and a lifelong process.

Relevance of Psychology of Learning to Teachers

- Psychology of learning equips the teacher with the knowledge of the needs and motives of the students so that he can motivate them in the classroom.
- The psychology of learning enables the teacher to understand the process of remembering and forgetting so that he can devise strategies for enhancing retention or remembering.
- The course also exposes the teacher to theories of learning and their applications to the learning environment.

- Psychology of learning helps the students to transfer skills acquired in the classroom to real life situation.
- Psychology of learning helps the teachers to improve on the social climate of learning in the classroom.

Learning Theories

- Learning theory is simply a coherent statement about human behaviors and learning.
- A set of ideas that explains observed facts in relation to changes in human behaviors.
- A hypothesis confirmed by observation or experiment which sets out the laws and principles about human learning.
- Four theories from four psychologists; two representing a Behavioristic viewpoint (Pavlov and Skinner), one representing a Rational/Cognitivist stance (Kohler) and one defined as a constructivist school of thought (Piaget).

Behaviorists Theories of Learning

- Behaviorist theory of learning is based upon the idea that all human behaviors are acquired through conditioning.
- Conditioning occurs through interaction with the environment.
- Behaviorists identified two types of conditioning as;
  - Classical
  - Operant

Classical Conditioning

- Classical conditioning consists of formation of association between stimuli and reflexive response.
- All of us are aware that certain stimuli automatically produce or elicit rather specific responses or reflexes.
- And that reflex occurs in response to stimuli that appears to be indirectly related to the reflex.

Ivan P. Pavlov and His Experiment

- Ivan Pavlov was primarily interested in the physiology of digestion.
- Pavlov noticed that Dogs do secret saliva as soon as they sighted empty plates in which their food was served.
- Secretion of saliva is a reflex response.
- In the first phase of his experiment;

- Pavlov placed a dog in a box.
- One end of a tube was inserted in the dog's jaw and the other end was put in a measuring glass.

- In the second phase of the experiment;
  - The dog was kept hungry and placed in harness with one end of the tube in the jaw and the other end in glass jar.
  - Now a bell was rang then meat powder was served.
  - The dog was allowed to eat it.
  - After a number of repeated trials, a test was introduced in which everything was the same except the presentation of food.

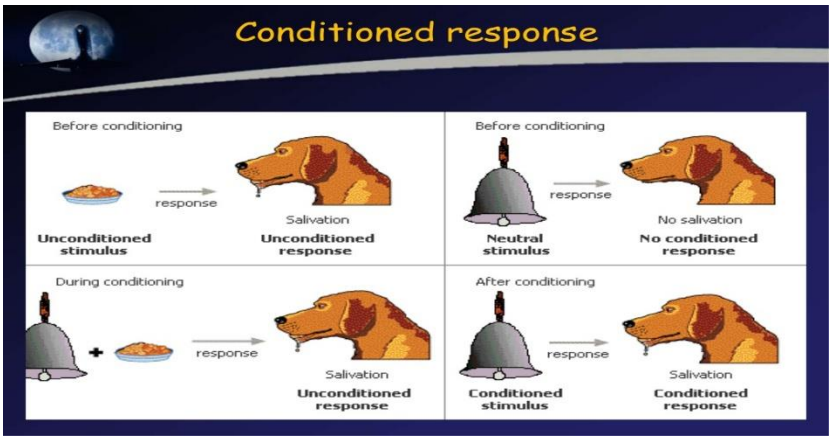

Fig. 12 Pavlov's Experiment

- In the beginning, the dog was secreting saliva in response to the sighting of food or Unconditioned Stimuli (US).
- The secretion of saliva due to sound of bell is Conditioned Response (CR).
- Sound of bell is Conditioned Stimulus (CS).

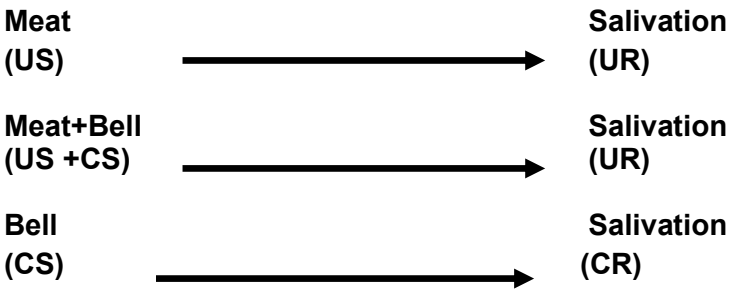

Fig. 13 Pavlov's Classical Conditioning

Implications for Education

- The goal of teaching is to modify behavior of the learner.
- Teaching should always start from what the learner knows to the unknown.
- For educational goals to be realizable, learning must meet be meaningful and satisfactory.
- Any behavior that is appropriate for learning should be adequately reinforced.

Operant Conditioning

- Operant behavior refers to behavior in which one operates on the environment.
- Operants are classes of responses such as; crying, sitting down, running or walking.
- Skinner's operant conditioning attempted to account for most of human learning and behaviors.

B.F Skinner and His Experiment

- Skinner placed an animal (such as a rat or pigeon) in a sealed box called "Skinner Box"
- The box contained a lever that would release food when pressed.
- If food was released every time the rat pressed the lever, it would press it more and more because it learnt that doing so gives it food.
- Lever pressing is described as an operant behavior, because it is an action that results in a consequence.

- The food that is released as a result of pressing the lever is known as a reinforcer, because it causes the operant behavior (lever pressing) to increase.
- Food could also be described as a conditioned stimulus because it causes an effect to occur.

Implication of the theory of operant conditioning

- Good habits should be reinforced so that such habits could be repeated.
- Learning will occur if rewards are made contingent (close in time) on the behavior that the teacher wants students to learn.
- Teachers should show approval when desired behavior is manifested by students.
- The most important reward necessary is the acceptance of what learners do by praising them.
- Punishment should be used sparingly so as not to create fear and unpleasant situation.
- Delayed reward may not have effect on the child.

Cognitivist Theories of Learning

- The cognitivists view learning as a mental activities that lead to the process of understanding or gaining insight of oneself.
- Notable psychologists include David Ausubel, Jean Piaget, W. Kohler etc.
- Proponents of this viewpoint contend that learning takes place in the human through a meaningful process of relative new events or items to already existing cognitive concepts or propositions.

W. Kohler and His Experiment

- The most popular experiments of Cognitivists theory are the ones carried out by W. Kohler while serving prison terms during world war I.
- In the first experiment;
  - A Chimpanzee was confined in a cage.
  - There was a stick in the cage and outside the cage some bananas were placed.
  - On seeing the bananas, the chimpanzee was restless and tried his best to reach the banana.

    - Suddenly, the animal saw the stick, established a relationship between the stick and the banana and was able to get the banana with the help of the stick.
- In the second experiment;
    - Two sticks were used which could be tied to one another.
    - The chimpanzee could only get the banana when both sticks are tied together.
    - The chimpanzee first tried to get the banana with one stick but was unable.
    - Suddenly, it succeeded in fitting both sticks before getting the banana.
- In the third experiment;
    - In this experiment, the setting was slightly changed.
    - The bananas were hung from a ceiling of the cage and a box was put at the corner.
    - The chimpanzee again tried to get the banana but failed.
    - It then established relationship between the box and the banana.
    - The animal decided to put the box under the banana, climbed on it and got the fruit.
- In the fourth experiment;
    - Two boxes were kept and the chimpanzee had to fit both boxes to get the banana.

Basic Assumptions of Cognitivists Viewpoints

- Some learning processes may be unique to human beings.
- Cognitive processes are the focus of study.
- Individuals are actively involved in the learning process.
- Learning involves the formation of mental associations that are not necessarily reflected in overt behavior changes.
- Knowledge is organized.
- Learning is a process of relating new information to previously learned information (Olusegun, 2015).

Educational Implications of Cognitive theory

- There is the need for play-way method, discovery and learning by doing in classroom.

- Younger children usually perceive essential relations when they are giver concrete materials.
- Teachers should carefully assess the current stage of a child's cognitive development and only assign tasks for which the child is prepared.
- Teachers must provide children with learning opportunities that enable them to advance through each developmental stage.
- Teachers should maintain a proper balance between actively guiding the child and allowing opportunities for them to explore things on their own to learn through discovery.
- Teachers should be concerned with the process of learning rather than the end product.
- Children should be encouraged to learn from each other (Olusegun, 2015).

Constructivist Theories of Learning

- The essence of constructivist theory is the learners must individually discover and transform complex information if they are to make it their own.
- Thus, constructivist learning theory is concerned with;
  - How learners make (construct) meaning from their own experiences.
  - How teachers can organize learning experience to aid learners in meaning-making.
- Proponents of this viewpoint are; Jean Piaget, Jerome Bruner etc.
- Proponents categorize learning into three processes;
  - Construction of understanding
  - Connection to prior understanding
  - Persistent of prior understanding
- In construction of prior understanding;
  - knowledge is something that learners must construct for and by themselves.
  - Knowledge cannot be transmitted or given, information can be transmitted from teacher to students.
  - The process of constructing one's own knowledge leads to the acquisition of conceptual understanding.
- As for connection to prior understanding;

  - Construction of new understanding involves relating new sensory input to prior understanding.
  - Meaning is given to the new experiences which depend on the prior understanding.
  - The old understandings get modified as well as the interpretation of the new experiences.
- In respect to persistent of prior understanding, this viewpoint opines that;
  - Everyone has been constructing understanding or knowledge since they were infants.

Principles of constructivism

- Learning is a search for meaning. Therefore, learning must start with the issues around which students are actively trying to construct meaning.
- Meaning requires understanding wholes as well as parts. And parts must be understood in the context of wholes. Therefore, the learning process focuses on primary concepts, not isolated facts.
- In order to teach well, we must understand the mental models that students use to perceive the world and the assumptions they make to support those models.
- The purpose of learning is for an individual to construct his or her own meaning, not just memorize the “right” answers and regurgitate someone else’s meaning. Since education is inherently interdisciplinary, the only valuable way to measure learning is to make the assessment part of the learning process, ensuring it provides students with information on the quality of their learning (Olusegun, 2015).

Educational applications of constructivist theory

- Teachers should encourage and accept autonomy and initiatives of the students.
- Use of manipulative, interactive and physical materials should be encouraged.
- Search out students understanding and prior experiences about a concept before teaching it to them.
- Encourage communication between the teacher and the students and also among the students.

- Asks follow up questions and seek elaboration after students initial response.
- Encourage student critical thinking and inquiry by asking them thoughtful open-ended questions, and encourage them to ask questions to each other.

Chapter Seven

Reward, Punishment and Motivation

Meaning of Reward

- Reward may be defined as symbol of appreciation shown to a person after his successful responses to a stimulus.
- The satisfaction may either be emotional (happy, pleasant etc) or physical (comfort, tasty etc),
- It includes things like goods marks, prizes, approval and privileges, honours and admirations etc. (Dikko, 2010).
- It can be also be define as an act of giving tangibles in form of (sweet, money, books etc) or intangibles inform of (social approval or praise) as reinforcement in return for an acceptable behaviours.

Types of Reward

- Tangible Rewards;
  - E.g. Scholarships, Ribbons, Sweets, Books etc.
- Intangible Rewards
  - E.g. Praise, commendation, honor, marks grade etc.

Advantage of Reward

- Foster positive behavior
- Promotes maximum effort toward school goals
- Boast the child morals and enhance his self-concept

Disadvantage of Reward (material)

- Material reward may become the primary goal at the expenses of learning experience.
- Reward must be increased periodically to keep the level of performance.

Punishment

- Punishment is an act in which one is made to suffer either physically or psychologically for committing an offence (Dikko, 2010).

- It can also be defined as an unpleasant stimulus that weakens an undesirable response (behavior).
- It also involves the removal of positive reinforcement in order to discourage the frequency of that response.

Types of Punishment

- Physical Punishment (corporal);
  - This is the type of punishment in which pains are implicated on the offender.
  - E.g. slapping, whipping, beating, kicking with legs, or hitting someone with injurious object.
  - This form of measures should be restricted as much as possible.
- Psychological Punishment (Non corporal);
  - In this type of punishment, offenders suffer loss of what he value or of importance to him.
  - E.g. verbal rebuke, removal or denial of privilege, escalating, reprimanding, sarcasm, derogation, loss of marks, disgrace publically, sweeping, blame, washing toilets, digging, weeding etc.
  - The teacher should not refer to the parents, home and personal defects of the offender.

Advantage of Punishment

- Block undesirable response
- Teach the child respect for authority
- Make students concentrate on class work
- Motivate students to learn the assigned material
- Set an example for potential offenders

Disadvantage of Punishment

- Punishment lead to aggression against either the punishers or who ever happen to be around
- Fear does not allow the recall of material learned in school
- Continuous punishment for which there is no escape makes the punished to be hardened.
- Corporal punishment might lead to physical and mental damages point to be considering in administering punishment.

Application of Reward and Punishment in teaching

- Make sure in each case the punishment is related to the behavior in question
- Emphasis should be placed or rewarding good behavior than repressing bad behavior
- Teacher should show the students clearly the difference between desirable and undesirable behavior

Meaning of Motivation

- Motivation is derived from Latin words 'movere' which means 'to move' or 'to energize' or 'to activate'
- Motivation is the process of arousing the action, sustaining the activity in process and regulating the pattern of activity.
- It is the states within an individual that drives behavior towards some goals.

Components of Motivation

- Three components of motivation that determine learner's behaviors are motive, drive and need.

Motive

- This is the desire or determination to achieve or arrive at a certain goal.
- Motive can either be physiological (food, sex etc.) or psychological (affection, respect interest etc.).

Characteristics of Motives

- Motives energizes and sustain behavior
- They direct and regulate our behavior
- Motives sensitize behavior to be selective

Drive

- This refers to the psychological expression of internal needs or valued goals.
- For example, hunger, thirst or drive for success.

Need

- This is an internal deficiency that energizes behavior.
- It implies the lack of something that if available can enhance physiological and psychological stability of the learner.

Theories of Motivation

- Several theories of motivation have been propounded by different psychologists. These theories include;

Drive Theory of Motivation

- The proponent of this theory is clerk Hull.
- Hull and his students believed that people were motivated to eliminate or reduce unpleasant bodily tension.
- E.g., if we observe that a student asks reasonable questions more rapidly than other students in the same class, we can therefore infer that, the quest for knowledge created a state of inquisitiveness known as drive.

Intrinsic Motivation Theory

- Proponents of this theory includes; Harlow, Hurt and Atkinson.
- The basic assumption of this theory is that motivation is an internal or inherent concept.
- Intrinsic motivation occurs when there is no obvious external reward behind an action.
- You simply enjoy an activity as an end in itself, as a new challenge, as a way to enhance your abilities, or as a chance to explore and learn.
- Students are more likely to be creative if they are intrinsically motivated.

Extrinsic Motivation Theory

- The theory of extrinsic motivation is based on the assumption that motivation stems from obvious external factors induced within the environment.
- These factors include grades, obligations, prizes, praises and approval.
- Most of the activities we think of as work are extrinsically rewarded.
- Extrinsic motivation is often needed if we are to develop enough skill or knowledge for an activity to become intrinsically rewarding.
- This effect can be observed in learning to read, play a musical instrument, or enjoy a sport.

Maslow's Needs Theory of Motivation

- Abraham Maslow believed that there is a range of needs that motivate human behavior.
- Maslow believed the number of needs is relatively small.
- He classified human needs into seven major groups.
- Maslow's key contribution was the idea that these seven needs can be ranked in a hierarchy, ranging from the physiological needs (lowest) to the highest human need, the need for self-actualization.
- Maslow felt that individuals would not be motivated by higher needs until they had satisfied the lowest ones.
- Thus, individuals are motivated throughout life to scale the ladder of needs, but only a few individuals reach the top.

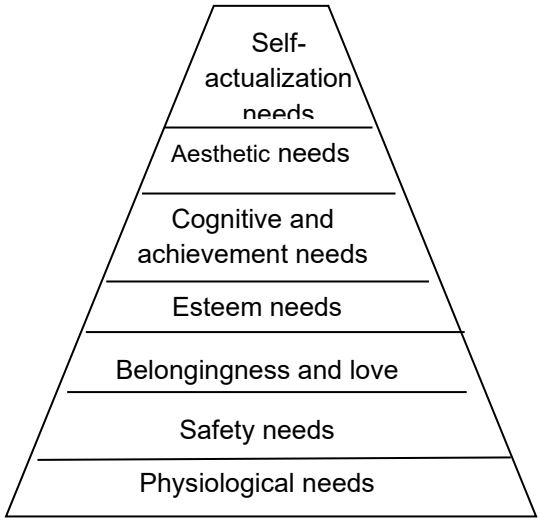

Figure 14: Maslow's Hierarchy of Needs Pyramids

Theory of Achievement Motivation

- Proponents of this theory include David McClelland, John Atkinson etc.
- Need for achievement is the need to accomplish something difficult, to meet a standard of excellence or to excel.

- E.g., students who have a strong need to achieve relative to their peers, tend to do better at tasks like mathematics than other students of equal intelligence.
- In short, within any group some individuals have a higher need for achievement than others.
- The need for achievement depends on social and cultural factors, which in turn affect child rearing practices.

Educational implications of Motivational Theory

- Use the principle of pleasure and pain
- Use rewards and punishment in teaching.
- The teacher must organize the activity of the class to tailor in accordance with the aspiration of the class.
- Use praise and blame to motivate learning.
- Learners should be given feedback of their performance.
- Provide real life and symbolic models in teaching.
- Avoid the use of stressful procedures, during instruction
- Healthy competition and cooperation: Should be integrated into classroom activities
- It is important for the teacher to ensure that all learning materials are meaning
- Adequate involvement of learner in the teaching process

Chapter Eight

Factors Affecting Learning and Transfer of Learning

Introduction

- In every Learning situation, there is a positive change in behavior of the learner.
- Although, several factors may impede or enhance learning a concept, such learned material must however be permanent.
- Some notable factors affecting learning are as follows;

Intellectual Factors

- This refers to the individual mental level, success in schools is generally closely related to the level of the intellect of the learner as pupils with low intelligence often encounter serious difficulties in mastering school work.

Learning Factors

- These are factors owing to lack of mastery of what has been taught, methods of work or study, and narrowness of experimental background may affect the learning process of any pupil.
- E.g., in arithmetic, knowledge of basic addition is essential to success in multiplication. Weakness in addition will contribute directly to the deficiency in multiplication.

Physical Factors

- This includes factors as health, physical development, nutrition, visual and physical defects and glandular abnormality.
- Children suffering from visual, auditory and other physical defect are seriously handicapped in developing skills such as reading and spelling.

Mental Factors

- This is related to attitudes which are more or less of definite sort.
- They play a large part in the mental organization and general behavior of the individual.
- They are important in the development of personality, cheerfulness, affection, prejudice, open mindedness and loyalty.

Socio-Emotional Factors

- Personal factors, such as instincts and emotions, and social factors such as cooperation and rivalry, are directly related to a complex psychology of motivation.
- For some reason a pupil may have developed a dislike for some subject because he may fail to see its value, or may lack foundation.

Teacher's Personality

- Teacher's personality is a composite of his physical appearance mental capacity, his emotional behavior and his attitudes towards others.
- Effective teaching and learning are the results of an integrated personality of the teacher.

Environmental Factor

- One of the factors that affect the efficiency of learning is the condition in which learning takes place.
- This includes the classrooms, textbooks, equipment school supplies, and other institutional materials.
- It is difficult to do good job of teaching in a poor type of building and without adequate equipment and instructional materials.

Meaning of Transfer of Learning

- Transfer of learning is the ability to take understanding acquired in one context and apply to a different context.
- It occurs when previous learning affects current performance.

Forms of Transfer of Learning

- General transfer of learning;

    - Ability to apply knowledge or skills learnt in one context to a variety of different contexts.
- Specific transfer of learning;
    - Ability to apply information learnt in a context similar to the one in which it was originally learnt.
- Positive transfer;
    - This occur when the solution of an earlier problem facilitate the solution of a later problem.
- Negative transfer;
    - This takes place when solution of an earlier problem impede solution of a later problem.
- Low road transfer;
    - This is spontaneous and automatic.
    - It occurs when a highly practiced skill is carried over from one situation to another with little or no reflective thinking.
- High road transfer;
    - This occurs when one consciously apply abstract knowledge he/she learned in one situation to another situation.
- Forward reaching transfer;
    - This type of transfer occurs when a learner intends to bring knowledge to a new situation.
- Backward reaching transfer;
    - Ability of the learner to realize the applicability of what he/she learned in the past only after it becomes relevant.

Factors Affecting Transfer of Learning

- Similarity between learning situations.
- Depth of original understanding.
- Quality of examples.
- Variety of examples.
- Learning contexts.
- Emphasis on metacognition.

Fostering Transfer of Learning

- Teachers should have clear-cut objectives for every learning activities.
- Select instructional materials which are best suited to the job of making relationship apparent.

- Let students know when to expect transfer, what kind to expect and the benefit it can bring to them.
- Use methods of teaching which will facilitate transfer.
- Provide practice in transfer of learning.
- Provide Opportunity for Reflection and Self Explanation

Chapter Nine

MEMORY, REMEMBERING AND FORGETTING

Meaning of Memory

- Memory is defined as a process of information storage and retrieval.
- For example, as students, we attend lectures, read our notes and try to cram the notes for the sake of recalling it in exam halls.

Types of Memory

- There are three types of memory, namely sensory memory, short-term memory and long-term memory.

Sensory Memory

- We receive most of our information through the senses such as the eyes, ears, nose, mouth, hands and the skin.
- However, we could not retain information due to its frequency of appearance hence it moves out in order to allow others to come in.

Short-Term Memory

- Short-term memory (STM) is a process, which helps us to retain a limited amount of information for a brief time.
- E.g., we may memorize a telephone number or an address or a piece of information for someone, once the information is delivered, we allow it to escape from our memory.

Long-Term Memory

- Long-term memory provides us an opportunity to retain information for a long period.
- E.g., if we were able to recall an event or information after a month or a year or many years we say that the information has been transferred to long-term memory.

Characteristics of Memory

- Three characteristics of memory they are: - Recognition, Recall and Relearning.

  Recognition

  - Memory is said to have taken place if what has been learned can easily be recognized if seen for the second time.

  Recall

  - Is the ability to recall or remember learning materials though made a little more difficult, such as in exam or test when confronted with questions.

  Re-learning

  - Relearning is when the learner learns a material more than once. For example, when students relearn or study their lessons in preparations for tests or exams.

The Memory Process

- Information in the memory system passes through four processes;

  Encoding

  - This is a process by which information is converted into a form or code in which it can be placed into either short-term or Long-term memory.

  Storage

  - This refers to retention of memorized materials over a period. The brain would store information, which is meant for future use.

  Recognition

  - This is the process of identifying specific learning materials from the variety of materials learnt and stored in the brain.

  Retrieval

  - This is a process in which previously encoded and stored memories (information) are brought back to use.

Strategies for Facilitating Memory

- Make use of Audio as well as visual materials while teaching.
- Make learning materials meaningful to the children.

- The learning task must be at the maturational level of the learners.
- Learning environment should be favorable and free from distraction activities.
- Organize learning in sequence i.e, one after the other.
- Help children to over learn the materials where necessary.
- Some materials should be learned as a whole whereas some should be broken into segments.
- Assist children to rehearse and practice what they learnt at intervals.
- Motivate the children to appreciate lesson by making it very interesting and simple.
- Reinforce children's efforts and desire for learning.

Rote Learning

- Rote learning is a method of learning that involves repeating some learning materials until a learner remembers it or commits it to short-term or long-short memory without having to understand its meaning or message.
- Examples of rote -learning is when children are made to commit the alphabets (ABCD) to memory through songs and other means; or when they memorize some religious verses or teachings without having to understand their meaning.
- Rote learning helps in learning the alphabets, scientific symbols, Mathematical formula, traffic signs, and game signs etc.

Over Learning

- Over learning refers to continuous rehearsal of learning materials until they are memorized.
- Thus, learning materials can be over learned if they were learned and understood for once.
- The learner will keep on relearning it on and on until he is sure of its mastery and quick to recall without any difficulty.
- For example if we don't want to forget an address or telephone number or a working formula in mathematics or a definition of a concept or historical data etc., we must keep on repeating them or using them very often.

Meaning of Remembering

- Remembering can be defined as the cognitive processes whereby past experience is remembered.
- Remembering involves recall, recognition and reproduction of past learning experiences.

Recall

- This involves the reproduction of a materials which was earn in the past that was not actually present before the brain now, as when a student answers an essay question during exams

Recognition

- This is the ability to identify something that has been perceived before.
- For example, when a student answers an objective question during exams in which he is supplied with alternative answers to choose correct one.

Reproduction

- it is the ability to voice out exactly the learning experiences in its orderly, sequentially and natural manner.
- Reproduction is a tool that asses the strength of recall and recognition which formed remembering.

Factors Facilitating Remembering

- Careful organization of the subject matter e.g information categorized in to headings, title and sub-titles.
- Making the subject matter meaningful
- Using variety of teaching method
- Formation of clear concept
- Revision- teacher should make a provision for periodic revision of material learned.
- Practice- teacher should provide the opportunity for the students to practice the recollection of what they have learned through tests, discussions etc.

Meaning of Forgetting

- Forgetting refers to the fact that what one wants to bring back to memory has vanished or cannot be recalled or cannot be recognized.
- For example, a student may spend a whole night reading and cramming for the following day's exam, but could not recall or recognize what he read last night at exam hall.

Factors Responsible For Forgetting

- Interference
- Retrieval failure
- Motivated forgetting
- Poor organization of subject matter
- Lack of practice (Revision)
- Trace change
- Consolidation effect

Theories of Forgetting

- Some theories that explain the causes of forgetting as presented by Garba (2015) include;

Consolidation theories

- According to these theories, forgetting occurs as a result of poor and inadequate storage of information by the brain.
- For example, once information is not properly consolidated (stored) in the brain on time through continuous rehearsal and over learning there is the tendency for the information to escape and to be forgotten.

Decay theories

- This theory believes that forgetting occurs due to lack of use, thus information tends to be forgotten if it is not constantly or intermittently used or recalled.

Interference theories

- This theories upholds that we forget thins we learn because what we are trying to remember has been interfered by other stimulus in the environment.

Chapter Ten

Effect of Rural and Urban Settings on Learning

Meaning of Rural and Urban Settings

- The environment in which an individual lives has significant impact on their life activities.
- The environments can be classified into Rural and Urban settings.

Rural Setting

- A rural setting is a geographic area that is located outside cities and towns.
- Typical rural areas have low population density and small settlements.

Urban societies

- An urban area is a location characterized by high human population density and vast-built features in comparison to the areas surrounding it.
- Urban areas may be cities, towns or conurbations.

Positive Effects of Rural Setting

- The atmosphere is quiet and peaceful and free from artificial noises and industrial population.
- There is effective classroom control because of small number of children per class, 3. The schools in rural areas are less populated hence; there is effective administration and supervision by the school head.
- There is less discipline problems; and people do not vandalized the school properties.

Negative Effects of Rural Settings

- Lack of modern learning gadgets such as electrically operated objects.
- Lack of social amenities to make learning 'materials easily accessible.
- Lack of educational centers and recreational facilities.
- Experiences and best teachers shun working in the rural schools.
- Lack of adequate supervision and inspection from ministry and zonal education offices due to lack of good roads.
- Absence of educational places which children can visit to see things which they were told in Schools, such as post office/ medical house, ministries, industrial and business centers etc.
- Government tends to neglect education in the rural areas where there is no immediate repairs of destroyed building and furniture (tables, chairs, boards etc.).

Positive Effects of Urban Settings

- There is regular supervision of schools.
- Schools are adequately equipped with instructional materials and furniture.
- Qualified teachers are posted to urban schools.
- Children in the urban schools have greater opportunities to visit various educational centers.
- Urban settings provide variety of learning centers and different types of schools (private and public) hence competition is very high.

Negative Effects of Urban Settings

- Overcrowded classes, which makes teaching and classroom management very difficult.
- Noisy environment and adulterated atmosphere of learning.
- Industrial pollution, which causes health hazards to children thereby affecting their educational development.
- There is moral decadence in the urban areas, which makes discipline difficult among children, because of rampant cases of behavior problems in our schools of learning.

Managing Overcrowded Classroom

- Overcrowding in school setting refers to a situation where the carrying capacity of a class or institution is over stretched.
- Teaching in an overcrowded classroom can be frustrating, overwhelming and stressful.
- Students perform better when the teacher is able to give one on one or small group instruction on a regular basis.

Strategies for Managing Overcrowded Classrooms

- Teachers should plan exceptionally well and be well prepared for every day.
- Teachers should create energetic and engaging lessons.
- Teachers should assign seats and rotate when necessary.
- Students who are low academically and behavior issues should be assigned seats towards the front.
- Students who are high academically and are well behaved should be provided seats towards the back.

Chapter Eleven

Concept of Individual Differences

Introduction

- In psychology, it is generally believed that "no two individuals are alike" what this implies is that each individual is special and has unique characteristics which distinguish him from others.
- This unique assortment of traits marked by a peculiar and striking characteristic justifies the statement above.
- According to Oladele (2005) individual differences can be described as the special or unique traits or attributes' which distinguish one person from another so that each child be provided with educational programmes directed to his potentials, interest, experience and background.

Causes of Individual Differences

- There are two factors responsible for the differences in individual distinctive characteristics. They are:
  - Heredity
  - Environmental factors
- **Heredity Factor:** This factor deals with the way parental characteristics are transmitted to their offspring's. These characteristics often known as traits in genetics are embedded in the genes. The genes are the carriers of these traits and they are located in the chromosomes. Children born of the same parents often have certain common traits which they inherit from their parents and individual variation may also occur due to the fact that different children inherit different qualities or combination of qualities from their parents or forefather.
- **Environmental Factors:** This refers to any and every external influence with which an individual comes into

contact after hereditary pattern has been received through the genes. Environmental factors like the school, family, feeding, peer group and other agents of socialization exert great influence on the individual genetic makeup and this determines how the individual interact with others in the society

Areas of Individual Differences

- We have mentioned earlier that individual varies in one aspect or the other and it will be unwise to treat children, even of the same age exactly the same way. The following are areas in which children differ are:
  - **Physical Difference:** Children vary in physique, size, complexion, motor coordination and proficiency and other physical qualities and abilities. Some children are almost twice as tall and as heavy as others of the same age and sex
  - **Sex Differences:** In human development, male/female differences are very common. Some children are boys while other are girls and they can both be found in the same classroom situation. Girls excel very well in linguistic ability than boys. However, boys tend to be better than girls at test measuring 'spatial ability' and mechanical aptitude. Females are not under pressure to achieve like boys hence they live more sheltered lives with more restricted experiences. Females are also more emotionally and socially stable. They have greater sensitivity and skill in interpersonal relations. They are more quiet, friendly and responsive to social demand. Physically, boys generally have stronger bones and muscles than females
  - **Age differences:** Physical ability declines with age but varies from function to function. Children of different ages rarely have the same reasoning or learning ability. For example a child of five years may only be able to count 1 to 100 where as a child of 12 years can count 1 to 1000. Learning ability is good till late age but can decline when

new experiences interfere with old ones.

- **Intellectual and academic differences:** There are no two intellectual equals, so it will be unfair to treat two unequal equally. Some pupils are fast learners other are of the average while some are very dull. For example, in the case of the gifted child and the maladjusted, the gifted child is more original, thoughtful, creative, imaginative, richer memories and are able to express themselves more clearly and precisely, and more precocious than the other member of the class. The maladjusted pupils are children with learning difficulty, They may require special attention and teachers with appropriate skills who can contribute to their management and behavior modification.
- **Socio-emotional differences:** differences in socio emotional expression are very common in children. Some children are introverts while others are extrovert. The introverts have been found to lack confidence, socially withdrawn and indecisive. The extroverts are sociable, friendly, and they show leadership qualities. Socio emotional behaviour are fostered by environmental factors such as parenting style, child rearing practices, socio economic status and so on.
- **Differences in interest.** Interest shown by different children has been found to be a strong determinant in some academic pursuit and achievement. Some children may develop interest in subject like mathematics. While others may prefer English language, studies have shown that people do very well in any area of learning they show interest
- **Differences in children background:** Children from relatively poor homes tend to perform poorly in academics. This is due to the fact that many parents may not be able to afford learning materials necessary for academic achievement. While the wealthy parents have the wherewithal in making their children excel academically. Besides, their children are exposed to good medical faculties and conducive homes

How to Identify Individual Differences

- The following methods are used by teachers to identify the differences lat exists in children
  - **Observational Method:** This will definitely provide on the spot or direct assessment of the peculiarity of every children
  - **Interviews:** Interviews strategies allow the teacher to obtain a great deal of information, the interview procedure involves a face to face situation in which the teacher asks questions to obtain answers relevant to the character or attitude of the student.
  - **Questionnaire:** A questionnaire contains series of questions meant to elicit responses from children, questionnaire are always designed for a particular purpose. It could be designed to obtain information pertaining students interest, attitude, aptitude and so on to the extent that the information collected will be used to place students accordingly.
  - **Anecdotal records of pupil:** This is a school book containing wide range of behavior exhibited by students. The book is usually kept by class teacher and it allows them to record individual student behaviour as they notice them in the classroom.

How to Cater for Individual Differences in the School

- Oladele (2005) suggested various ways by which individual differences can be taken care of in the classroom situation. These include:
  - Classroom should be arranged in such a way that shorter students should sit at the front while taller students sit at the back of the class so that both of them can see the chalkboard clearly.
  - Also when grouping children for exercise their sex, should be considered because girls may not be able to perform tedious exercise or drills.
  - Teacher should exercise a lot of patience while dealing with slow learners. This will allow them to learn at their own pace.

- For the gifted child their programme should be enriched to keep them more engaged
- Teachers should show plenty of love and affection to children who are weak emotionally.
- Remedial instruction programme to help slow learners learn task assigned to them.
- It also helps the school to know how to group the children either for personality development purposes or to bridge the gap between high and low intelligent.

Chapter Twelve

HEREDITY AND ENVIRONMENT

Introduction

- Researchers have long debated the relative importance of hereditary influences and environmental influences in child development.
- It was once assumed that these forces operated independently of each other.
- Today developmental psychologists recognize that both influences are essential and are mutually influential.
- For example, how a child responds to parenting (an environmental influence) is partly determined by the child's temperament and other inherited characteristics.
- Likewise, the environment influences how hereditary characteristics develop and are expressed.
- During the past century, for example, there have been significant increases in average height because of improved nutrition and medical care, even though individual differences in height are strongly influenced by heredity.
- The conclusion that strongly inherited characteristics are changeable has important practical implications.
- For instance, even though many features of personality are based on inherited temperament, the family environment is an important influence on a child's personality development.
- Thus, even a child with a difficult temperament can develop positively in a warm and caring family environment.

Heredity

- Heredity is the process of transmitting biological traits from parent to offspring through genes, the basic units of heredity. Heredity also refers to the inherited characteristics of an individual, including traits such as height, eye color, and blood type. Heredity accounts for why offspring look like their parents.

Genetics

- Genetics is the study of how heredity works and, in particular, of genes. A gene is a section of a long deoxyribonucleic acid (DNA) molecule, and it carries information for the construction of a protein or part of a protein. Through the diversity of proteins they code for, genes influence or determine such traits as eye color.

Gene and chromosome:

- Gene is the basic units of heredity that carries information for the formation of proteins.
- If the DNA in a single human cell could be unraveled, it would form a single thread about five feet long and about 50 trillionths of an inch thick.
- To prevent this fine string of DNA from becoming knotted like a big tangle of yarn, parts of the strand are wrapped around proteins like a thread is wound around spools.
- These units of wrapped DNA are called nucleosomes, and they coil and fold into structures called chromosomes.

Sex Determination

- Humans have 23 pairs of chromosomes. In each pair, one chromosome comes from the mother and the other from the father.
- Twenty-two of the pairs are the same in both men and women, and these are called autosomes.
- The twenty-third pair consists of the sex chromosomes, so called because they are the primary factor in determining the gender of a child.
- The sex chromosomes are known as the X and Y chromosomes. Females have two X chromosomes, and males have one X and one Y chromosome.

- The Y chromosome is about one-third the size of the X chromosome.
- A sperm, the reproductive cell produced by the male, can carry either one X or one Y chromosome.
- An egg, the reproductive cell produced by the female, can carry only the X chromosome.
- When a sperm with an X chromosome unites with an egg, the result is a child with two X chromosomes (a female child).
- When a sperm with a Y chromosome unites with an egg, however, the result is a child with one X and one Y chromosome (a male child). Thus, the father determines the gender of the child.
- Sexual reproduction requires two parents. Each parent creates sex cells, or gametes that contain half the parent's genetic information.
- Human sex cells (sperm and eggs) contain 23 single, unpaired chromosomes rather than the 23 paired chromosomes found in all other body cells, or somatic cells.
- When egg and sperm unite in the process called fertilization, they form one cell that contains 23 pairs of chromosomes, the normal number for human body cells.
- The cell develops into a child that has a mixture of genetic information from both parents. As a result, the child is similar to each of the parents but not identical to either of them.
- If these same parents have a second child, it is the product of fertilization of a different sperm and a different egg.
- Therefore the second child is unique, because each sperm and egg contains a unique set of chromosomes.
- With the exception of the X and Y chromosomes, genes come in twos on the paired chromosomes, but the genes are not necessarily identical.

- The hair color gene from the father may carry information for black hair, but its partner on the chromosome from the mother may specify red hair.
- These different forms of genes that carry information for specific traits are called alleles. A person's hair color depends on several alleles interacting in complex ways to determine the actual trait of the offspring.

Environment

- Environmental factors comprise all the stimuli a person encounters from conception to death, including food, cultural information, education, and social experiences.
- Although it is known that environmental factors can be potent forces in shaping intelligence, it is not understood exactly how they contribute to intelligence.
- In fact, scientists have identified few specific environmental variables that have direct, unambiguous effects on intelligence. Many environmental variables have small effects and differ in their effect on each person, making them difficult to identify.
- Environmental forces continue to modify inborn potentials with each passing year. Consistent differences in temperament can be detected for at least the first 2 years of life.
- Yet by age 10, children's personalities show little connection to irritability, activity, or attentiveness observed in infancy (Kagan, 1976).

Environmental impacts on development:

- **Intrauterine environment** Prenatal environment of the womb is protected and stable, but a number of conditions can affect embryonic or fetal development before birth if mother's health or nutrition is poor, if she contracts certain diseases, such as German measles or syphilis, uses drugs, or is exposed to X-rays or atomic radiation, the fetus may be harmed. Resultant damage is referred to as a congenital problem (or "birth defects"). Genetic problems are inherited.

- **Social development** Infants are social creatures from the day they are born. Examples of their sensitivity to others is their ability to imitate adults and their interest in the human face. Two major elements of early social development are infants' growing self-awareness and their increased awareness of others.
- **Self-awareness** Like many other events in development, self-awareness depends on maturation of the nervous system. When coupled with an increased awareness of others, self-awareness begins to form the core of social development.
- **Social Referencing** Glancing at the facial expressions of others to decide how to respond to them. By about 12 months of age, most babies reference (glance at) their mothers when placed in an unfamiliar situation. By the end of their first year, babies are aware of the facial expressions of others and seek guidance from them -- roots of an important social skill. Real core of social development is found in the emotional attachments that babies form with their caregivers.
- **Critical period** A time of increased sensitivity to environmental influences (both positive and negative). Often certain events must occur during a critical period for a person or an animal to develop normally. Existence of critical periods for acquiring particular behaviors is why experiences early in life often have lasting effects.
- **Attachment** Bonding to their primary care giver. Developing an emotional and physical relationship with primary person during first year of life. Infants securely attached to their parents or a parent later show:
  - More curiosity
  - More problem-solving ability
  - Moore social competence in preschool

  - Moore resiliency (bounce back rather than overwhelmed
- **Separation anxiety** Crying when separated from parent which occurs at about 8 to 12 months. Frequent and short separations a good cure to problem --breaks down anxiety, makes it a routine event.
- **Affectional needs** are as important as other forms of nourishment - no attention can cause child to loose trust in environment.
- **Enrichment in development** Any attempt to make a child's environment more novel, complex, and perceptually or intellectually stimulating. Infants like to reach out and touch things, but normally it takes about 5 months after birth for this skill to develop. In an enriched environment, visually directed reaching occurred an average of 6 weeks early. And, children in early childhood education programs show real improvements in later school performance --this is especially true for the neediest children.
- **Deprivation in development** The loss or withholding of normal stimulation, nutrition, comfort, love, and so on; a condition of lacking. Destructive effects of lack of stimulation in infancy.

  Causes of deprivation:
  - Lack of attachment of a major element. Improvements made without foster parenting or attachment failed to reverse their declining mental health.
  - Lack of perceptual stimulation. Nothing happening for these children: no change, no input, no cuddling, no attention, and most of all, no stimulation. Placed in bare rooms in cribs with white sheets hung on the sides. Infants

could see only the blank ceiling... This was deprivation in the fullest sense of the word.

Signs of deprivation:

- Depression - can lead to death over ignored for long period of time.
- Mute - lack of speech due to lack of environmental stimulus
- Deprivation dwarfism. Stunted growth associated with isolation, rejection, or general deprivation in the home environment.

- **Hospitalism** A pattern of deep depression marked by weeping and sadness and long periods of immobility or mechanical rocking. A lack of normal responsiveness to other humans is also typical of the problem. Babies in a foundling home-high rate of infant death, and development of the living babies was severely retarded.
- **Contact comfort**. One of the most important dimensions of early stimulation, supplied by touching, holding, and stroking an infant. Mother's warmth or coldness, relaxation or tension, and acceptance or rejection are more important than the choice of breast or bottle. Breast-feeding advantage is that colostrum, a fluid (rather than milk the first few days after birth) rich in proteins that carries antibodies from the mother to the newborn and helps prevent certain infectious diseases.

Environmental Influences on Intelligence

- Schooling is an important factor that affects intelligence. Children who do not attend school or who attend intermittently score more poorly on IQ tests than those who attend regularly, and children who move from low-quality schools to high-quality schools tend to

show improvements in IQ. Besides transmitting information to students directly, schools teach problem solving, abstract thinking, and how to sustain attention—all skills required on IQ tests.

- Certain substances in the prenatal environment may influence later intelligence. For example, some pregnant women who consume large amounts of alcohol give birth to children with fetal alcohol syndrome, a condition marked by physical abnormalities, mental retardation, and behavioral problems. Even exposure to moderate amounts of alcohol may have some negative influence on the development of intelligence, and to date no safe amount of alcohol has been established for pregnant women.
- Scientists have also discovered that certain substances encountered during infancy or childhood may have negative effects on intelligence. For example, children with high blood levels of lead, as a result of breathing lead-contaminated air or eating scraps of lead-based paint, tend to have lower IQ scores.
- Prolonged malnutrition during childhood also seems to influence IQ negatively. In each of these cases, a correlation exists between environmental factors and measured intelligence, but one cannot conclude that these factors directly influence intelligence.
- Other environmental variables in this category include parenting styles and the physical environment of the home.

REFERENCES

Aliyu, U.D. (2006). *Psychology of Learning*. Kano: Tahir Advertising Agency.

Aslin, R. (1993). Commentary: The Strange Attractiveness of Dynamic Systems to Development. In L. Smith, E. Thelen (Eds.), *A Dynamic Systems Approach: Applications.* Cambridge, MA: MIT Press.

Barrett MD, Harris M and Chasan J (1991). Early lexical development and maternal speech: a comparison of children's initial and subsequent uses of words, *Journal of Child Language 18* (1), 21–40, doi:10.1017/S0305000900013271, PMID 2010501.

Berk L (2005), *Infants, Children, and Adolescents*. Boston: Allyn & Bacons.

Berk, Laura E. (1993), *Infants, Children, and Adolescents*. Allyn and Bacon.

Berk, Laura E. (2009). *Child Development*, *8th ed*. United States of America: Pearson Education, Inc.

Bower, G.H., & Hilgard, E.R. (1981). *Theories of learning* (5th ed.). Englewood Cliffs, NJ: Prentice-Hall

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.

Bruner JS (1990), *Acts of Meaning*, Cambridge MA: Harvard University Press

Buchwald J (1987). A comparison of plasticity in sensory and cognitive processing systems. In Gunzenhauser N, *Infant Stimulation*, Skillman NJ: Johnson & Johnson

Chauhan, S.S. (1988). *Advanced Educational Psychology.* New Delhi: Vikas Publishing House PVT Ltd.

Chauhan, S.S. (2002). *Advanced Educational Psychology*. New Delhi: Vikas Publishing House PVT Ltd.

Classroom Connection, New York Macmillan Publishers.

Dikko, S. (2010). *Psychology of Education Abuja.* Good Times Publication.

Eggen P. & Kauchak, D. (1992). *Educational Psychology: Classroom, Connections*. New York: Macmillan Publishing Co.

Erikson E (1968), *Identity, Youth, and Crisis*, New York: Norton

Gagne, N.L. (1976). *Educational Psychology*. Boston: Houghton Mifflin.

Garba, N. (2015). Effects of rural and urban settings on learning and management of overcrowded classroom. In A. S. Haruna (ed), *Fundamental of Human Learning*. Kano: Albarka

Gathercole SE. (2006). Non word repetition and word learning: The nature of the relationship. *Applied Psycholinguistics* 27: 513-543.
doi:10.1017.S0142716406060383

Glasser, W. (1990). *Control Theory of Motivation*. New York: Moraw Hill Books Company.

Gleitman LR (1990). The structural sources of verb meaning. *Language Acquisition 1*(1): 3–55, doi:10.1207/s15327817la0101_2.

Greenough W, Black J and Wallace C (1993). Experience and brain development", in Johnson M, *Brain Development and Cognition*, Oxford: Blackwell, pp. 319–322

Hart B and Risley T (1995), *Meaningful differences in the everyday experience of young American children*, Baltimore: P.H. Brookes

Haruna, A. S. (2015). Factors affecting Learning. In A. S. Haruna (ed), *Fundamental of Human Learning*. Kano: Albarka

Ingram D (1999). Phonological acquisition. In M. Barrett, *The Development of Language*, London: Psychology Press, pp. 73–97.

Jingau, A. A. (2015). Transfer of Learning. In A. S. Haruna (ed), *Fundamental of Human Learning*. Kano: Albarka

Kail R., E. (2006). *Children and Their Development* (4th edition), New York: Prentice Hall,

Kegl J, Senghas A and Coppola M (1999), Creation through construct: Sign language emergence and sign language change in Nicaragua. In M, DeGrafs, *Language Creation and*

Language Change: Creolization, Diachrony and Development, Cambridge, MA: MIT Press

Lemma A (2007). Psychodynamic Therapy: The Freudian Approach. In Dryden W, *Handbook of Individual Therapy* (5 ed.), Sage publications.

Lovell, C. (1973). *The Use of Psychology in Teaching*. London: Longman Group Ltd.

Mallum, J., Haggai, M.P. & Ajaegbu, K.J.U. (2000). *Educational Psychology: Classroom Practice*. Jos: Ya-Byange Publishers.

Maslow, A.A. (1954). *Motivation and Personality*. New York: Harper & Row.

Maslow, A.H. (1943). *A Theory of Human Motivation*, Psychological Review 50 (4) 370- 96 retrieve from http://psychoclassic.yourkcalmaslow/motivation.htm.

Masur EF. (1995). Infants' early verbal imitation and their later lexical development. *Merrill-Palmer Quarterly*, 41, 286-306.OCLC 89395784

Mazur, S. (1990). *Psychology and the Teacher*. New York: Hott Rinechart & Winston.

Mercer J (1998), *Infant Development: A Multidisciplinary Introduction*, Pacific Grove, CA: Brooks/Cole

Mills, J. A. (1998). *Control: A History of Behavioural Psychology*. New York: NYU Press.

Moerk E (1996). Input and learning processes in first language acquisition. *Advances in Child Development and Behavior 26*: 181–229. doi:10.1016/S0065-2407(08)60509-1.

Moerk EL (1986). Environmental factors in early language acquisition. In Whitehurst GJ, *Annals of child development*, *3*, Greenwich: CTJAI press

Moerk EL (1989). The LAD was a lady and the tasks were ill defined. *Developmental Review 9* (1): 21–57. doi:10.1016/0273-2297(89)90022-1.

Mooney, C. G. (2000). *Theories of Childhood: an Introduction to Dewey, Montessori, Erikson, Piaget & Vygotsky*, Redleaf Press

Morford J.P & Kegl, J. (2000). Gestural precursors to linguistic constructs: how input shapes the form of language. In McNeill

D, *Language and Gesture*, Cambridge: Cambridge University Press.

Oladele, J.O. (2005). *Fundamentals of Psych Ological Foundations of Education*. Lagos: John-Lads Publishers Ltd.

Olagbewo, I. (2008). *Fundamentals of Psychology of Learning*. Minna: Hingam Nigeria Limited

Olusegun, B. (2015). Learning theories and their applications. In A.S. Haruna (ed), *Fundamental of Human Learning*. Kano: Albarka.

Omolayo, B. (2000). *Psychology of Human Being at Work: An Introduction*. Ado-Ekiti: Crown House Publication.

Pan, B. & Snow, C. (1999). The development of conversational and discourse skills. In M. Barrett, *The Development of Language*, London: Psychology Press, pp. 229–50.

Piaget, D. (1963). *The Origin of intelligence in children.* New York Norton & Co.

Pinker, S. (1994). *The Language Instinct*, London: Allen Lane

Sameroff, A. (1983). Factors in predicting successful parenting. In V. Sasserath (Ed.), *Minimizing High-Risk Parenting*. Skilman, NJ: Johnson & Johnson.

Schunk, D. (2004), *Learning Theories*. An Educational Perspective (4th Ed.). Upper Saddle River, NJ, USA: Pearson Publication.

Skinner, B. F. (1974). *About Behaviourism*. Toronto: Alfred A. Knopf, Inc.

Smith, M. K. (2002). *Jerome Bruner and the Process of Education*. Retrieved 26, January, 2015 fromhttp://www.infed.org/thinkers/bruner.htm.

Soska, K. C., Adolph, K. E., & Johnson, S. P. (2010). *Systems in Development: Motor Skill Acquisition Facilitates Three-Dimensional Object Completion.* Developmental Psychology.

Stern DN (1990), *Diary of a Baby*, Harmondsworth: Penguin

Vygotsky, L.S. (1998). *Child psychology. The collected works of L. S. Vygotsky: Vol. 5. Problems of the theory and history of psychology*. New York: Plenum.

Waters, E. Kondo-Ikemura, K. Posada, G. & Richters, J. (1991). Learning to Love: Mechanisms and Milestones. In M. Gunnar & L. Sroufe, *Minnesota Symposia on Child psychology*, 23,

Self-Processes and Development, Hillsdale, NJ: Erlbaum, pp. 217–255.

Wood, S.E, Wood, C.E & Boyd, D. (2006). *Mastering the world of psychology* (2 ed.), Allyn & Bacon.