INTRODUCTION TO PSYCHOLOGY AND EDUCATIONAL PSYCHOLOGY
(EDU 2110)

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- Psychology- is the scientific study of human and animal behaviour and their mental process.
- To sum up: psychology is a systematic and consistent description and interpretation of behaviour with a view to control and predict it.
- All kinds of processes, activities, experiences, adjustments, responses to all kinds of life situations like thinking, feeling, remembering, perceiving, imagining, striving and acting are included in the study of psychology.
- Psychology deals with the whole field of living activity, with all types of responses made by the living organism.
- Educational psychology- is the branch of psychology concerned with human learning and development in an educational setting.
- Bhatia (2005) adds that educational psychology is an applied branch of psychology that deal with human behaviour in educational situations and concerned with such facts and principles of human behaviour as fall within the scope of the social process of education.
- In other words educational psychology is the application of the principles of general psychology to the problems of education. eg principles of punishment and reinforcement done by B.F .Skinner**.**

THE RELEVANCE OF EDUCATIONAL PSYCHOLOGY

A clear understanding of the aims and objectives of educational psychology will help a teacher to assess the outcome and results of his or her efforts and programmes in the school. Below are some of the relevance of educational psychology:

1. Educational psychology should help the teacher to acquire a comprehensive approach to educational problems, to discriminate between remote and immediate goals of education, between impossible and practicable objectives and between suitable and unsuitable methods.
2. It will him or her to realise that growth, and development of young people can be suitably guided and directed, their social adjustments improved and their learning made more useful and effective.
3. After acquiring the skills from educational psychology a teacher will develop an objective and impartial attitude towards his or her pupils, understand with sympathy the limits of their learning and achievement.

4. It will assist him to acquire deeper understanding and insight into human nature so that he or she can enrich his own life as well as that of his or her pupils, and make education joyful and interesting task for both himself or herself and his or her pupils.
5. He or she realise what implications individual differences among pupils have for teaching and the danger of teaching pupils in a group.
6. The teacher will realise that conditions outside the school influence learning, that some of them are favourable and desirable and others hostile and undesirable.
7. The teacher will come to understand that he himself is an important and valuable part of the environment of his pupils and that his own conduct, approach and way of thinking, feeling and living will influence his pupils.
8. Acquiring a knowledge of the several methods of investigation and study he or she will develop a background, scientific and critical, but helpful in solving problems and difficulties of his vacation. He will be led to think in psychological terms about the problems of education and life.
9. It will help the teacher to realise that education is a social process, that social development of pupils is important as intellectual and academic learning and that therefore, the school should provide rich and varied opportunities for social experiences and group activities of many kinds.
10. It help the teacher to realise that emotions and feelings are prime movers of behaviour and life and the teacher's attitude towards children's feelings and emotions should be positive, that is, he or she should provide for their healthy outlet and expression.
11. It makes the teacher realise that children do not develop piecemeal but their total personality is affected by the total and many-sided environment in which they live and work.
12. Educational psychology has provided tools of evaluation and assessment not only of intelligence, ability and aptitude but also of attainment in several curricular subjects.

The Nature and Scope of Psychology / Educational Psychology

- Educational Psychology is a science because it employs certain objective methods for the collection of data. It has its objectives of understanding, explaining, predicting and control of facts.)
- Educational Psychology is a natural science. An educational psychologist conducts his investigations, gathers his data and reaches his conclusions in exactly the same manner as physicist or the biologist. Natural science's major objective is to seek and find the truth irrespective of personal beliefs, bias, religious or cultural persuasions. Similarly, psychology obtains its foundation from natural science by means of careful observation and measurement of behaviour.

- Educational psychology is a positive science. A positive science deals with facts as they are or as they operate. Educational psychology studies the child's behaviour as it is, not, as it ought to be. So it is a positive science.
- Educational psychology is an applied science. It is the application of psychological principles in the field of education.
- Educational psychology is a developing or growing science. It is concerned with new and ever new researches. As research findings accumulate, educational psychologists get better insight into the child's nature and behaviour.

BRANCHES AND FIELDS OF PSYCHOLOGY

Psychology is grouped into two different branches namely pure and applied.

•**Pure psychology**- provides the framework and theory. The contents deal with the formulations of psychological principles and theories.

•It suggests various methods and techniques for the analysis, assessment modification and improvement of behaviour.

Applied psychology- discuss ways and means of application of psychological rules, principles, theories and techniques with reference to the real practical life situation.

BRANCHES OF PURE PSYCHOLOGY

1. **General psychology-**it deal with fundamental rules, principles and theories in relation to the study of behaviour of normal adult human beings

2**. Abnormal psychology-** branches of psychology which describes and explains the behaviour of abnormal people in relation to their environment, the causes, symptoms and syndromes description and treatment of abnormalities of behaviour.

3. Social psychology- branch of psychology deals with the group behaviour and interrelationships of people.

4. **Experimental psychology-** It describes and explain ways and means of carrying out psychological experiments following scientific methods controlled in laboratory situations for the study of mental processes and behaviour.

5.Developmental psychology; It describes and explains the phases and products of the process of growth and development in relation to the behaviour of an individual from birth to old age, e.g psychoanalytical theory and psychosocial theory.

BRANCHES OF APPLIED PSYCHOLOGY

1 **Educational psychology**- It applies the psychological principles, theories and techniques to human behaviour in educational settings.

2**. Clinical psychology-** Describes and explains the causes of illnesses or abnormal behaviour of a patient attending the clinic or hospital and suggesting individual or group therapy for treatment and effective adjustment of the affected person in society.

3. Industrial psychology- It's a branch of psychology that seek application of the psychological principles, theories and techniques for the study of human behaviour in relation to industrial environment.

•Some industrial psychologists, also called personnel or organizational psychologists, may be employed by companies to administer tests which measure employee aptitudes or skills in hiring and placement programs

4. Legal psychology- Branch of psychology which tries to study the behaviour of persons like clients, criminals, witnesses e.t.c

5. **Military psychology-** Concerned with the use of psychological principles and techniques in the world of military science e.g how to keep the morale of soldiers during war time.

6. Political psychology-It relates itself with the use of psychological principles and techniques in studying politics and deriving gains

7. **Sports Psychology** attends to mental health and wellbeing of athletes, as well as assisting them with reaching their maximum potential in their athletic career.

Counseling Psychology- This is branch of psychology which focuses on providing therapeutic interventions for clients who are struggling with some mental, social, emotional or behavioural issue. It also looks at living well, so people reach their maximum potential in life.

PSYCHOLOGICAL SCHOOLS OF THOUGHT

•Structuralism (Whelm Wundt)

•This school focused its attention to study the conscious experiences and structure of the brain and nervous system which are responsible for such experiences.

•He advanced the technique of introspection as the scientific tool that would enable researchers to unveil the structure of the mind. (examining one‟s feelings)

•Played a significant role in shaping the field of psychology by establishing it as an independent experimental science.

Functionalism

•Developed by William James an American who argued that the mind is fluid not stable, consciousness is ongoing not static.

•He advanced the function of the brain rather than the structure of the brain (how the mind operate)

•James believed that mental processes serve vital functions that enable us to adapt and survive in a changing world. (eg the learnt habit previously leads to the adaptation to a new environment)

•Functionalism contributed to development of psychology

It extended both the subject matter of psychology as well as the range of methods use to acquire data

•Emphasis on adaptation

•They are also credited for bringing the study of animals, children and abnormal behaviour into psychology as well as an emphasis on individual differences.

•Emphasis psychology to real world problems.

Psychoanalysis

•Sigmud freud believed in studying covert behaviour.
•Freud also believed that many of the factors that influence our thoughts and actions lie outside of concious awareness and operate entirely in our unconscious.
•Therefore, psychology needed to study these unconscious drives, motives and impulses to arrive at a more complete understanding of the individual.
•He opened up a comprehensive theory of personality in psychology.
•One of the biggest critism of this theory is that the theory fall short of being scientific as many concepts are testable

Evolutionism

•Evolution is a theory that all species are ever changing as some other successful creatures survive and are passed on to the next generation. This is based on the work of Charles Darwin which talks about the evolution of human beings until 1859.
•This theory talked about Nature and nurture. Nature is all what we inherit from our parents through genes. Any ability that we gained from the environment is Nurture

Behaviourism

•One notable psychologist under behaviourism is John Watson who objected the theory of psychoanalysis and advocated a revolution in psychology.
•He said mental process cannot be studied scientifically and emphasis on overt or observable behaviour.
•Behaviourists believed that human behaviour can be understood by examining the relationship between stimuli (events in the environment) and responses (observable behaviour)
•B.F Skinner supported Watson‟s view by advancing the idea that human behaviour can be explained by reinforcement and punishment
•Later behaviourists embrace the study of overt and covert behaviour

Humanistic psychology

•Carl Rogers is the prominent psychologist in this thought of school.
•Humanistic psychologists view humans as free agents capable of controlling their own lives, making their own choices, setting goals and working to achieve them.
•Humanists believed that behaviour is controlled by our own free will and not by the unconscious or by the environment.
•They also developed therapy focussed on reducing maladaptive behaviour.

Gestalt psychology

•This school of thought was established in the year 1912 by three German psychologists Max Wertheimer (1880-1941) and his colleagues Kurt Koffka (1886-1941) and Wolfgang Kohler (1887- 1967).
•The term Gestalt means „Form‟ or „Configuration‟. These psychologists opposed molecular approach to study behaviour.
•Study of perception and behavior from the standpoint of individual as whole
•They said the mind is not made up of elements and hence it can be understood better only if we study it as a whole.

Cognitive Psychology

• The main principle of Gestalt school is “whole is better than sum total of its parts”. According to it, the individual perceives a thing as a whole and not as a mere collection of elements. This school studies mental processes including how people think, perceive, remember and learn. Cognitive psychology began to emerge during the 1950s, partly as a response to behaviorism. Critics of behaviorism noted that it failed to account for how internal processes impacted behavior. This period is sometimes referred to as the "cognitive revolution" as a wealth of research on topics such as information processing, language, memory, and perception began to emerge. One of the most influential theories of this school of thought was the stages of cognitive development theory proposed by Jean Piaget.

APPROACHES TO THE STUDY OF PSYCHOLOGY

1. Biological approach: examines how our genes, hormones, and nervous system interact with our environment. It focuses primarily on the activities of the nervous system, the brain, hormones, and genetics.

2. Cognitive approach: focuses on how we process, store, and use information. Therefore, psychologists from this approach study cognition, which is the mental act or process by which knowledge is acquired. Cognitive psychologists study internal processes such as perception, attention, language, memory and thinking.

3. Cross-cultural approach: studies the influence of cultural and ethnic similarities and differences.

4. Behavioural approach: analysis of how learning occurs based upon reward and punishment. The behavioural approach examines the learning process, focusing in particular on the influence of rewards and punishments.

•In this approach, behaviourists believe all behaviour is determined by stimuli in the environment.

5. Psychoanalytic approach: based on the belief that childhood experiences greatly influence the development of later personality traits and psychological problems.

•It emphasizes internal, unconscious conflicts; the focus is on sexual and aggressive instincts that collide with cultural norms.

6. Humanistic approach: emphasizes individual freedom in directing one’s future.

•This approach was developed in part as a result of Abraham Maslow’s dissatisfaction COURSE:

HUMAN DEVELOPMENT

• According to Zanden (1985), development refers to the orderly and sequential changes that occur with the passage of time as an organism move from conception to death.

The concept of conception

• Munsaka and Matafwali (2013) define the term conception as a process that occurs when the male gamete (sperm) fuses with the female gamete (ovum).

• Conception also refers to the formation of a viable zygote by the union of the sperm and ovum through the process called fertilization.

- Conception is the beginning of pregnancy and is marked by the implantation of the blastocyst into the inner lining of the uterus called the endometrium.
- A mature female releases a ripened ovum every through the process known as ovulation. Ovulation is a phase in the menstrual cycle that occurs at about day fourteen (14) of the twenty eight (28) day cycle.
- Each month between days six and fourteen of the menstrual cycle, the Follicle Stimulating Hormone causes follicles in one of the woman's ovaries to begin to mature.
- During days ten to fourteen, only one of the developing follicles forms a fully mature egg. At about day fourteen in the menstrual cycle, a sudden increase in luteinizing hormone causes that ovary to release its egg and begin its five day travel through the fallopian tube to the womb or uterus.
- As the egg is travelling through the fallopian tube, the level of progesterone hormone rises and this facilitates the preparation of the uterine lining of pregnancy.
- Often times, most of the eggs that are released end up disintegrating and being expelled from the woman's body through the process called Menstruation.
- Therefore, menstruation is a process that occurs as a result of the failure of the sperm to fuse with the ovum.

Factors that can limit the possibility of conception taking place include the following:

- Immaturity or fertility of the sperms or ovum
- Negative emotional state of the female
- Use of drugs e.g. alcohol and antidepressants
- History of abortions and painful menstrual cycles that require medication for pain relief.
- Fallopian tube diseases and STIs.
- Endometriosis: a condition in which tissue from the uterine lining grows outside the uterus, on the ovaries, fallopian tubes, bladder and bowel. This hinders the egg from adhering to the uterine wall.
- It is a well-known scientific truth that at conception, the man contributes twenty three (23) chromosomes to the zygote and the woman does the same. This results in the zygote having a sum total of forty six (46) chromosomes of a normal human somatic cell (body cell). A chromosome can be defined as thread-like structures that carry genes. The genes carry the Deoxyribonucleic Acid (DNA), which is the blue print that determines the unique characteristics that a person has.
- Meiosis is the kind of cell division that occurs in the sex cells or gametes in order to ensure that the haploid (half) number (23) of chromosomes is maintained in the sex cells.
- Mitosis on the other hand refers to the process of cell division that occurs in the somatic cells in order to ensure that the diploid number (46) of chromosomes in the body cells is maintained.

- A normal zygote contains 46 chromosomes translating into 23 pairs. The twenty third pair contains sex related chromosomes which determine the sex of the baby.

- As a result, the power to determine the sex of the child lies in the man. This is because the man's gamete contains XY sex attributes whereas the woman's ovum is characterized by XX sex attributes.
- It is important to note that the prenatal period is divided into three main periods which are the germinal, embryonic and foetal.
- The germinal period constitutes the first two weeks after conception in which the zygote is created, undergoes processes of cell division and is implanted into the uterine wall (Santrock, 2006). The blastocyst develops into the embryo and the placenta is formed from its outer layer of cells called trophoblast.
- The embryonic period is a period of pre-natal development that occurs from two to eight weeks after conception. The embryo's three layers namely, the endoderm (inner layer), ectoderm (outer layer) and mesoderm (middle layer) develop.
- It is also during this period that the embryo's three life support systems including the amnion, placenta and umbilical cord mature. Major organs of the embryo such as the heart, eyes, and lungs develop during this period through the process called organogenesis. The ears, mouth, throat, arms and legs also start developing.
- The last prenatal stage is known as foetal period. This period begins after two months of conception till birth. During this period, the already formed organs become strengthened and less susceptible to environmental harm. The foetus keeps increasing in terms of height and weight and the baby becomes active especially by six months of gestation.

PRINCIPLES OF GENETIC OF TRANSMISSION

The following are genetic principles that have been discovered and these include:

- Dominant-recessive gene
- Sex-linked genes
- Genetic imprinting
- Polygenic inheritance
- Reaction range

(a) Dominant-recessive gene

- It was discovered by Gregor Mendel was a German speaking monk who lived between 1822 and 1884. He was a scientist and the father of genetics.
- Mendel's experiments have been regarded as the foundation upon which many modern scholars have gained insight on how genes are transmitted from one generation to the other.
- In this experiment, Mendel wanted to see what would happen when he crossed yellow seeded pea plants with green seeded pea plants.
- The results of the experiment fascinated Mendel in that all the progenies were yellow seeded.
- What Mendel discovered was that genes determining colour in the pea plants were controlled by a pair of alleles, in which one was dominant and the other was recessive. In this experiment, the yellow colour was dominant and the green colour was recessive.

- The following is an illustration of the experiment by Mendel which more pragmatic. Let us take it that the green colour is represented by alleles yy whereas the yellow colour is denoted by YY alleles. The initial crossing he did is demonstrated in the following punnett square:

Y	Y
Yy	Yy
Yy	Yy

y
y

- As shown in the square above, all the offspring contained a dominant allele as well as a recessive one. The offspring were all yellow in colour because the dominant allele manifested itself more than the recessive allele. The recessive allele could only manifest itself in the presence of another recessive gene.
- Mendel developed some of the salient terminologies as a result of the crossings and these are as follows:
- Homozygous Dominant-this means that both alleles on the gene representing an attribute are dominant e.g. YY.
- Heterozygous Dominant- refers to a representation where one allele is dominant and the other is recessive e.g. Yy.
- Recessive- is where both the alleles are recessive.

Sex-linked genes principle

- According to Santrock (2005) X-linked inheritance refers to the inheritance of an altered gene that is carried on the X chromosome.
- You are aware that males have merely one X chromosome while females have two X sex chromosomes.
- Thus, if there is any alteration of the male X chromosome, males will carry an X-linked disease because they have no extra X chromosome to compensate.
- For females, if one X chromosome is mutated, the remaining one will backup and so they will just be carriers.
- Some of the conditions associated with X-linked inheritance include Fragile X syndrome and Hemophilia.

Polygenic inheritance

- This is the inheritance of traits such as skin colour which is determined by the interaction of many genes. This type of inheritance is in marked contrast to Mendelian inheritance model in which traits are determined by one gene.
- In this kind of inheritance, the genes contributing to a particular phenotype will have the same influence and the alleles for the gene have an additive effect. Thus, polygenic traits do not exhibit complete dominance as do Mendelian traits, but exhibit incomplete dominance.

- In incomplete dominance, one allele does not completely dominate or mask another. The phenotype is a mixture of the phenotypes inherited from the parent alleles.

Genetic Imprinting:

- This refers to a situation where the genes have diverse effects depending on whether they are inherited from the mother or the father (Santrock, 2005). In this case, an imprinted gene tends to dominate the one that has not been imprinted.

Range Reaction

- Range reaction is a concept in psychology, genetics, and related fields that the expressed characteristics (or phenotype) of an organism depend both on genetic characteristics (or genotype) and the environment. It's the current understanding that characteristics like intelligence depend upon both genetics and the environment to fully shape them in an individual.
- Using the concept of range of reaction, a scientist would say that intelligence is determined by genes but manifests according to what the environment demands. In other words, if a child has the potential to be a genius, that potential must also be nurtured through education, nutrition, and a safe environment.
- Lacking any of these makes it difficult for the brain to develop properly, resulting in the child not exercising his or her intellectual potential.
- Athletic ability is another area that the concept of range reaction can be applied to. A child with average genes can have above average performance with constant practice, exercise, and excellent nutrition.
- Some professional athletes have talents and abilities that are a result of good genetic potential, but most would attribute their success as athletes to hard work.

STAGES OF PRE-NATAL DEVELOPMENT

2.4.1 GERMINAL/ZYGOTE STAGE (0-2 WEEKS)

At this stage cells in the zygote divide rapidly to form a mass of cells called blastocyst. The blastocyst move slowly along the fallopian tube to the uterus wall where it implants itself. Cell division continues such that in three days after fertilization, there are 32 cells and the number doubles each day. Within a week there are 100-150 cells. The cells become specialized such that some cells form a protective layer around a mass of cells while others establish the umbilical cord and the placenta. The placenta serves as a life-support system for the fetus, allowing oxygen and nutrients to pass into the fetus and waste products to pass out.

Embryonic Stage (2-8weeks)

By the end of two weeks the zygote cells divides to form an embryo. Most vital organs and body systems form including the heart, nervous system, stomach, esophagus and ovaries or testes. By the end of embryonic stage, it looks a human with eyes, nose, jaw, mouth and lips, tiny arms with elbows, hands and fingers, legs with knees, ankles and toes.

Foetal Stage (8 weeks to birth)

The various organs grow and start functioning. End of third month, the fetus kicks, turn its head, open mouth and swallows etc.6 months, eyes open, can make sucking movements, have taste buds,

eye brows etc. By the end of 7 months, organ systems function.8th and 9th months, can respond to light and touch, hear what is going on outside. The foetus can also learn hearing of the mother's familiar voice. Its heart beat faster when it hears a stranger. 22-
26 weeks old it may survive if birth occurs. Chances of survival are much better the closer the term is to 36 weeks.

Stages of Child Development

Durojaiye (1976), Summarizes the Stages of Child Development as follows;

Germinal Stage:	First two weeks after conception
Embryonic Stage:	Two to six weeks after conception
Foetal Stage:	From six weeks after conception
Perinatal Stage:	The period of birth
Neonatal Stage:	The first two weeks after birth.
Infancy Stage:	The first two years.
Early Childhood:	Two to five years.
Later Childhood:	Six years to puberty (around 11 years)
Adolescence:	Puberty to adulthood
Adulthood:	Period above puberty

PRENATAL INFLUENCES ON CHILD DEVELOPMENT

- Prenatal-Period before birth

(a)Teratogenic influences-teratogens are environmental agents; physical or social that can lead to abnormal development of the foetus.

- Common teratogens

Medical Drugs

1. Thalidomide causes birth defects such as missing limbs. Most babies whose mothers took thalidomide during pregnancy were born with partial or missing limbs.

2. Antibiotics such as streptomycin and tetracycline, anti-depresant, and hormones such estrogen may affect embryo development

(b)Non -medical drugs

1. Alcohol- excessive intake by pregnant woman may lead to the child being born with condition called Foetal Alcohol Syndrome (FAS). FAS can lead to facial deformities, defective limbs and heart which may affect development later.

- Children with FAS exhibit irritability, hyperactivity and seizures.
- There is also damage to CNS and have low IQ.

2. Tobacco

- It may cause miscarriages
- Low birth weight and tend to develop at a slower rate
- Other complication include impulsivity, irritability, hyperactivity, nervous system impairment and neurological problems
- Tobacco smoking can lead to a condition called sudden infant death sydrome (SIDS)

3. Diseases

(a) Rubella (German measles) to complication to the foetus includes blindness, deafness, heart defects and mental retardation.

(b) Syphilis. Babies born to a mother who have suffered from syphilis during pregnancy are likely to suffer blindness, deafness, heart problems and brain damage.

(c)HIV/AIDS

(d) Malnutrition- maternal maltrition during pregnancy leads to slow foetal development which leads to babies being born with low birth weight

- Other effects include disruption in the formation of the spinal cord.
- Malnutrition can inhibit the optimal development of brain cells and can lead to stillbirths
- Children born from mothers who were malnourished during pregnancy suffer some cognitive defects during infancy and childhood.

4. Environmental Hazards

- Environmental pollutants and waste can cause abnormalities in developing embryo eg mercury can lead to mental retardation, physical deformities, language and speech delays and brain damage.
- Lead has been linked to premature births, low births weight, brain damage, decrease in IQ
- Carbon dioxide has been found to reduce the blood flow and oxygen to the embryo.

5. Maternal age

- Teen pregnancies are associated with complications during pregnancy and at delivery.
- Optimal age for having children is between 18-25.
- Older women have a higher chance of experiencing a miscarriage and more likely to experience complication at delivery
- Women at 35 and above are likely to give birth to children with Down syndrome and mental retardation.
- But other research has shown women at 40 can give birth to healthy babies.

6. Maternal emotion condition

- Maternal stress and anxiety during pregnancy can lead to high levels of adrenaline being produced which restricts the release of adequate oxygen to the foetus.
- Santrock (1999) revealed that maternal stress anxiety is linked to motor delays in newly born babies.

DEVELOPMENT IS INFLUENCED BY BOTH HEREDITY AND ENVIRONMENT

- If a human being is indeed defined only by heredity, schools would have little reason to exist and there would be little cause to believe that education could be a positive influence.
- If on the other hand, a child is a blank slate, to be defined only by his or her experience, the responsibility on the shoulders of educators is overwhelming.
- Inheritance of intelligence from parents can affect the child cognitive both positive and negative.
- If a human being is indeed defined only by heredity, schools would have little reason to exist and there would be little cause to believe that education could be a positive influence.

- Gene disorder such as Down syndrome can affect the child's growth.
- Environment can have both positive and negative effect on the child's development eg children from families of high socioeconomic classes are taller than their age mate in lower socioeconomic classes
- Therefore, both heredity (nature) and environment (nurture) influence the development of the child.

DEVELOPMENTAL DOMAINS

Developmental domains helps us understand the primary areas of child development and learning that can help us to identify a child's strengths and areas in which they could further develop skills. Below are the main developmental domains:

Cognitive Development Domain, focusing on creative arts expression.

Cognitive development involves how children think, explore and figure things out. It refers to things like memory and the ability to learn new information. This domain includes the development of knowledge and skills in math, science, social studies, and creative arts.

Creative arts is about creative thinking. Allowing children the opportunity to express themselves through creativity is beneficial to many areas of their development. Children become less fearful, learn that there can be many solutions to any given problem, and develop fine motor and communication skills. Because of this, we integrate opportunities for creative arts expression into all areas of the school day.

You can encourage creative arts expression at home.

Infants:

- Listen to music and sing with your baby.
- Provide your infant with child-safe paint and allow them to paint with their hands. Display their work where they can see it.
- Allow your child to experiment with using different objects to make sounds. This could be musical toys or household objects—a pot and wooden spoon can be a wonderful drum!

Toddlers

- Play your child's favorite music and dance with them.
- Go outside, collect objects such as leaves, sticks, flowers, grass, etc., and make a collage with your child.
- Provide materials (for example, dress-up clothes, purses, briefcases, hats, etc.) for your child to use in dramatic play.

Preschool

- Ask your child to explain a piece of artwork they have created. Ask why they chose certain colors and shapes and what the piece is meant to represent.
- Point out different musical instruments when you see them in books or when you hear them in a song. Help your child to make associations between instruments and the sounds they make.

- Create stories with your child and act them out together. You can be the actors in the dramatization or you can use puppets.

School Age:

- Introduce your child to different genres of music. Ask them about the differences they hear between genres. Also, ask what their favorite genre is and why.
- Dance to different genres of music with your child. See how they change their movements between genres and ask why they did this.
- Provide opportunities for your child to draw. If possible, have a space for them with paper, pencils, crayons, and markers.

Here are some great resources about how to support creative arts expression at home:

Physical Development and Maturational changes

Physical Growth

Physical growth in children is faster during the first 3 years, especially during the first few months than the later periods of their physical development.

At 5 months, the average baby's birth weight has doubled from 3½ kg to about 7 - 10 kg. at the end of the first year the birth weight will have been 13 kg.

- This rapid growth slows down during the second year.
- Height increases by about 10 to 12 centimetres (cm) during the first year (making a typical 1 year-old about 30 centimetres tall).
- The child's height increases by about 5cm during the second year, and by 3 to 4 cm during the third year
- As a young child grows, body shape and proportions change too. The head becomes proportionately smaller until full adult height is reached
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PRINCIPLES OF DEVELOPMENT

- Papalia (1998) suggests the following Principles of human development:

1. Development is a Never-Ending process

Human beings continue to develop, to change, to be affected by experience throughout life.

- The most dramatic growth, the most noticeable change takes place in childhood.

2. Each child is an Individual, Developing at His or Her own rate

Not all 6 year olds are at the same stage of development, exhibit the same traits or are equally ready to learn. One may be ready to read, another may not. Both children are normal.

Teachers must therefore, understand "averages" and "norms" but see children as individuals.

3. All Growth is Related

- Physical, emotional and mental growths are related.
- Every aspect of human growth influences every other aspect. There is a positive correlation, a direct relationship, among physical, emotional, social and mental development.
- if a child is ill or fatigued, he or her may not be able to concentrate on their studies. Improvement in physical status improves self- concept, positive self- concept is related to academic performance.
- Social development influences behaviour as well.

4. Development has direction

- While each human being develops at an individual rate, there are predictable sequences: each does go through the same stages.
- Babies usually crawl, then stand, and later walk. Most children can draw circles before they can copy squares.
- Each stage and task mastered successfully makes the next stage and task, though more complex possible.

5. Development has direction

- While each human being develops at an individual rate, there are predictable sequences: each does go through the same stages.
- Babies usually crawl, then stand, and later walk. Most children can draw circles before they can copy squares.
- Each stage and task mastered successfully makes the next stage and task, though more complex possible. Some of the major directions of development are listed below;

(a) Cephalocaudal and Proximal-distal

Humans develop from the head to the feet and from the centre of the body toward the extremities. Following the cephalocaudal direction, the head develops first, then the trunk, then the arms and legs, then the hands and feet. Large muscles develop before small ones.

You can expect a child in grade one to be far more skillful with large muscles than with small to be more adept at running than at holding a pencil.

(b) Structure Precedes Function

- Children cannot use their bodies until the body is capable of being used.
- Muscles must be ready before reading or the fine finger control necessary for penmanship.

(c) Differentiation

- Development proceeds from the general to the specific. It moves in the direction of reduced confusion, increased precision of responses and fine discrimination.
- The distinctive features of objects are gradually differentiated.
- Young children see only the whole until they mature enough to be able to focus on parts of the whole, a skill essential for reading.

(d) Concrete to abstract

- Mental growth proceeds from an ability to think only about things that are physically present to an ability to visualize things that are not there, to conceptualise and to understand cause effect.
- The young child solves a Mathematical problem by counting beads or fingers, while the older child no longer needs such concrete aids.
- In the early grades historical time sequences are more easily understood with visible devices, such as a poster board time line stretched around the room. Older students can understand the idea of time in an abstract sense expressed in words alone.

(f) Outer Control to Inner Control

- Young children are dependent on others not only for physical care but for values and principles.
- They feel guilt "on command" as a toddler, when an adult tells them they did wrong and they grow to develop their own value system, their own conscience, their own set of inner controls.
- These inner controls develop in a parallel course with growth toward perspectivism, toward the ability to see things from other points of view.

(g) Absolutism to Relativism

- The young child sees everything as absolute, rules as unchangeable.
- The older child knows that there can be exceptions to rules, that rules can be changed to meet specific situations.

(h) Spirailing

- The same task is mastered at varying degrees of complexity, at different stages of development. Independent, for example, is asserted differently at different stages and alternates with dependence.
- The course of development is uneven (in some children more than in others).
- It zigzags and sometimes it spirals backwards in a way which suggests retreat and regression.

Emotional domain

The emotional domain allows children to express themselves, recognize their own feelings and those of others, and develop ways to manage their emotions. Emotional development is fundamental for a child's well-being. This is arguably the most difficult domain as adults sometimes struggle with this. A good place to start is by developing the language to talk about emotion and modeling positive emotional responses for young children, especially in real-time

situations. Children are able to express a wide range of emotions within the first couple of months after birth. Crying is one of the earliest means through which infants make their emotions known. Further, infants develop the primary emotions such as joy, surprise, sadness, disgust, anger, fear within the first six months of life. Infants can express primary emotions through different facial expressions until about the age of eighteen months or slightly before the age of two years.

At about eighteen months, secondary or self-conscious emotions emerge. In secondary emotions infants develop awareness of who they are in relation to other people. For example, they develop the ability to express embarrassment, shyness, nervousness, and they can also express sympathy (Munsaka and Matafwali,2013).

At age of two children begin to express self -conscious emotions of pride, shame, guilty, and self -confidence. Another emotion that is commonly expressed in early childhood is anger. Anger or aggression is displayed through tantrums. Children are able to express their anger explicitly because of the ability to use language to express their feelings.

Social Domain

Mwamwenda (2004) pointed out that the process of child socialisation is two dimentional; the child is influenced by society (parents, siblings, peers etc), the child influences society. Initially the child circle of interaction is limited to the immediate family, but broadens to the larger community as the child grows. Therefore, early childhood period is critical to the social development of a child. During this period, the child's circle of social interaction expands significantly. This is mainly due to the increased developmental abilities which allow children to be agile and mobile, but also due to exposure to more peers in and outside the school environment. The major activity during early childhood is play. It is for this reason that the early childhood years are sometimes referred to as the play years.

The following are the importance of play according to Maria Montessori:

(1) Play grooms children for the roles that they will perform as adults

(2) Play sharpens children's cognitive skills. Research has shown that children who engage in pretend play, tend to perform well on cognitive tests involving language skills and creativity.

(3) Research has also shown that pretend play enhances children's social skills.

(4) Play has been found to improve healthy emotional development in children. Through resolving emotional conflicts and other challenges encountered during interactive play, children gain mastery of how to handle themselves and others emotionally.

- The social interaction during middle and late childhood is mainly centered around peers; children begin to establish friendships with their peers. For this reason, the majority of children during this stage will tend to value the connections with their peers than the connections with their parents. With psychoanalysis and behaviourism . it was developed in the early 1950s.

BEHAVIOURAL LEARNING THEORIES

Learning

Learning- is a relatively permanent change that happens to behaviour and/ or knowledge due to experience. This includes changes that happen intentionally, and those that happen unintentionally (Munsaka, 2011).

The definition of learning excludes changes that happen due to natural processes such as growing older, growing taller etc.

Classical Conditioning Theory by Ivan Pavlov

He was a Russian behaviourist developed a theory around 1920

The main principle governing classical conditioning is the principle of contiguity (learning is explained by association). When two events repeatedly occur together, they tend to become associated.

Pavlov used the principle of contiguity to explain how an organism could learn how to give involuntary or physiological responses.

Involuntary responses are those responses that an organism has a genetic ability to do; in short they are not learned e.g fear, salivating, sweating etc

These responses are genetically programmed in all living organisms. When the right stimulations are there, an organism will just give the responses.

In an experiment Pavlov set to teach a dog how to salivate to a neutral stimulus

According to Pavlov, neutral stimulus meant stimulus which did not have the biological/ genetic ability to cause a dog to salivate

For the experiment to be successful continuously paired a neutral stimulus (sound of a bell) with unconditioned stimulus (meat powder) to trigger salivation.

He would sound the bell and within a few seconds, present the dog with some meat powder. The procedure was repeated a numbers of times, until the dog was able to make an association between sound and meat powder

Following the pairings, the bell that started as a neutral stimulus, which possessed no power to cause a dog salivate, eventually acquired the ability to trigger salivation in the dog.

Therefore, the sound of the bell became a conditioned stimulus because it only acquired the power to trigger salivation through contiguous pairing.

The salivation that came as a result of the presentation of the bell alone became known as conditioned response as opposed to the unconditioned response which was triggered by the meat powder.

Summary of three phases in Classical Conditioning

Phase 1: pre-conditioning phase

Neutral stimulus (NS) leads to- no response

(Sound of bell)

Unconditioned stimulus (US) leads to-Unconditioned response (UR)

(Meat powder)

Phase 2: Conditioning Phase

Neutral stimulus (NS)+ Unconditioned stimulus (US) leads to- salivation

(Sound of bell) (Meat powder) (After pairings)

Phase 3: Post-conditioning phase

Conditioned stimulus (CS) triggers Salivation

(sound of bell) (Conditioned response CR)

From the experiment Pavlov made the following observations;

Generalisation- He noticed that the dog did not just learn to salivate to the exact sound of the bell that it had been conditioned to. The dog also salivated at the presentation of a range of similar sounds. Pavlov called this process as stimulus generalization. However, the more the stimulus deviated from the original stimulus, the less the dog salivated.

Discrimination- Pavlov was able to teach his dogs to respond only to one particular sound of the bell. He did this by presenting the dog with meat powder only when that desired sound was given. He called this process as stimulus discrimination.

Extinction- as Pavlov repeatedly presented the conditioned stimulus (sound of bell) alone without the accompaniment of the meat powder, he noticed that the dog eventually stopped salivating. This meant that the behaviour of salivating had gone into extinction. He further noticed that when he gave the dog a break from the experiment and brought it back into the laboratory after few days of rest, the dog was able to resume salivating to the conditioned stimulus. He called this process of resumption of salivating as spontaneous recovery

John Watson's View of Learning

Other than concentrating on animals, the American Psychologist John Watson proved that classical conditioning happens in humans through fear. In his famous experiment, he took a 9 month old boy named Albert and showed him several items including a whit rabbit. At first the boy did not seem fear any animal presented to him. Watson presented little Albert with a white rabbit, as Albert reached for the rabbit, Watson struck the steel bar with a hammer just behind his head which attracted fear from the little boy. Watson's emphasis was on the three stages of classical conditioning which was already noted by Pavlov.

Three Phases in Watson's Experiment

Phase 1: Pre-conditioning Phase

Neutral stimulus leads to – no response

(Rabbit)

Unconditioned stimulus leads to- Unconditioned response (fear)

(Loud noise)

Phase 2: Conditioning phase

Neutral stimulus (Rabbit) + Unconditioned stimulus (Loud noise) leads to fear (after pairings)

Phase 3: Post-conditioning phase

Conditioned stimulus elicits conditioned response (fear) (Rabbit)

Adopted from Munsaka,2011,p 6

Application of the principles of Classic Conditioning to the Teaching-Learning Processes

Classic conditioning can be used to help students begin to like certain aspects of school which they may have disliked

Teachers can use classical conditioning principles to extinguish unwanted behaviour in students for example, a teacher can eliminate the disruptive behaviour through rewarding the desirable behaviour.

In line with the principle of spontaneous recovery, a teacher has to bear in mind that while undesirable behaviour can be extinguished, with some passage of time, it can re-surface, therefore, teachers need to be ready to handle the situation.

BEHAVIOURAL LEARNING THEORY: OPERANT CONDITIONING

INTRODUCTION

The presentation intends to discuss the operant conditioning theory of learning. To achieve this, the discussion attempts to:

- Trace the historical background of operant conditioning.
- Describe operant conditioning experiments.
- State the basic view and assumptions of operant conditioning.
- Explain the basic principles of operant conditioning.
- Apply operant conditioning to classroom situations.

Therefore, it is after this outline of objectives that the presentation is structured.

Skinner's operant conditioning experiments

- Skinner conducted a series of experiments with animals. Dissatisfied with Thorndike's puzzle box, Skinner designed an apparatus to study animal behaviour in a slightly different fashion. The apparatus was called the operant chamber or Skinner box. It was designed to prevent human interruption of the experimental session and to allow the study of behaviour as a continuous process, unlike in separated trial-by-trial procedures. In Thorndike's puzzle box, the animal would have to be physically placed back into the box after each rewarded escape trial. Skinner felt that such procedures interfere with behaviour as a "stream of events".
- For rats an operant chamber has a lever (technically called an operandum) that can be pressed over and over to deliver food pellets, with each press counting as a single occurrence of the behaviour.
- For pigeons, one or more disks can be pecked as the operand a to deliver reinforcement for this behaviour, usually in the form of food grain. The disks are often lighted for stimulus discrimination and generalization training.
- After an animal receives reinforcement for pressing a bar or pecking a disk, there is no need to reset the system; the chamber is ready to deliver more reinforcements as soon as the animal responds again.
- The cumulative recorder was another innovation introduced by Skinner to automatically graph response rates, that is, it shows an accumulation of the number of total responses as this total is distributed across time. In its original form, this machine recorded the number and timing of an operant behaviour by using a continuously rolling piece of paper with a fixed ink-pen to mark time across a continuous X axis, as well as another pen that advanced one step up the Y axis each time a bar was pressed or key was pecked.
- Skinner was able to study animal behaviour for as long as he deemed necessary without ever having to interfere with or even observe his animal. Nearly all of that Skinner discovered about operant conditioning principles came from his use of the operant conditioning chamber and its cumulative recorder-produced data.

Basic View of operant conditioning

Operant conditioning's basic view was that:

- Voluntary responses are strengthened or weakened as a result of their consequences.

Assumptions of operant conditioning

The following were the assumptions of operant conditioning:

- Human behaviour can be explained by a set of laws.
- Behaviour should be studied at its simplest, most fundamental level.
- Principles of learning derived from research with animals should apply to humans.
- A change in behaviour is the only basis for concluding that learning has occurred.

Basic Principles of Operant Conditioning

The following were the basic principles of operant conditioning:

- Reinforcement

Reinforcement is a consequence that increases the probability that a behaviour will occur (the behaviour strengthens). Note that when something is added or presented, the process of learning is called positive and when something is removed or taken away, the process of learning is called negative.

- Positive Reinforcement – Strengthening behaviour by presenting a positive stimulus immediately after the behaviour has occurred (increasing the probability that it will reoccur). For example, awarding a physics textbook to a student for best results in a physics test.
- Negative Reinforcement – Strengthening behaviour by removing a negative stimulus immediately after the behaviour has occurred (increasing the probability that it will reoccur). For example, improving student class attendance by exempting them from writing an examination.

Schedules of Reinforcement:

Reinforcers are more effective when they are given as soon as possible after a student performs the target behaviour. Behaviour is reinforced after a set number of responses have occurred or over a given period of time.

- Variable-ratio schedule – The number of responses needed to gain the reinforcement is not constant. For example: Rewards could be given after 3, 5, 9, and 15 mathematical problems solved. Rate of extinction: very slow.
- Fixed-ratio schedule – Behaviour is reinforced after a set number of responses have occurred. For example: A student may be given five sweets for every ten mathematical problems solved. Rate of extinction: fairly fast.
- Continuous schedule (similar to fixed ratio) – Behaviour is reinforced after every response. For example, awarding a pupil after passing each test. Rate of extinction: very fast.
- Fixed-interval schedule - Behaviour will be reinforced after a certain period of time. No matter how often it occurs, the behaviour will not be reinforced until the time is up. For example: Students are given a quiz every Wednesday. Rate of extinction: fairly fast.
- Variable-interval schedule - Also based on time passing but the time period keeps changing. For example: Students are given pop quizzes. Rate of extinction: very slow.

Punishment

Punishment is a consequence that decreases the probability that a behaviour will occur (the behaviour weakens). There are two types of punishment:

- Positive punishment (presentation punishment) – Weakening a behaviour (decreasing the probability that it will reoccur by presenting an aversive stimulus immediately after the behaviour has occurred). For example, making a student dig a pity for beating a friend.
- Negative punishment (removal punishment) – Weakening a behaviour (decreasing the probability that it will reoccur by removing a positive stimulus immediately after the behaviour has occurred). For example, deducting marks from a student's results for copying in an English test; and also reducing game time for a pupil who rarely attended training in a competitive inter school match.

Dangers of Punishment: Punishment presents the fastest way to changing behaviour. However, punishment might be dangerous to an individual. Some of the effects of punishments are:

- Punishment can be abusive. For example, a teacher might become so aroused when he is punishing a student that he becomes abusive.
- Punishment may create a new problem, that is, aggression. Students commonly react to physical punishment by learning to dislike the punisher and perhaps by reacting aggressively toward the teacher.
- Punishment does not convey any information about what an alternative and more appropriate behaviour might be. It may suppress one inappropriate behaviour only to be replaced by another one.
- Punishment can turn out to be reinforcing. A student might learn that misbehaving will get the teacher's attention.
- Extinction – When a previously reinforced behaviour decreases in frequency and eventually ceases altogether because reinforcement is withheld. For example, when the teacher withholds rewards when the pupil performs well in tests, the good performance of the pupil will eventually disappears in the following tests.
- Spontaneous Recovery – When an extinguished behaviour reappears having been reinforced. For example, when a pupils who stopped coming early to school as a result of not rewarding him or her eventually resumes early coming after reintroducing the rewards.
- Generalization – When an individual learns to make a particular response to a particular stimulus and then makes the same or a similar response in a slightly different situation. For example, a pupil may think just because he or she was rewarded for hard work in Mathematics, he or she is also going to be rewarded for hard work in Geography or other subject.
- Discrimination – When an individual learns to notice the unique aspects of seemingly similar situations and thus responds differently. For example, a student realises that it is only after Mathematics tests when rewards are given and not after tests from any other subjects, and as such he or she may pay less attention to these other tests.
- Shaping – Reducing complex behaviours into a sequence of more simple behaviours. Reinforcing successive approximations to the complex behaviour. These are taught one by one using reinforcement and punishment and gradually combined to create the desired complex

behaviour. Shaping is frequently used to teach tricks to animals. For example, teaching a dolphin to jump through a hoop and teaching a monkey how to play guitar. Another example is teaching a student to solve a complex mathematical problem by rewarding him or her at every level from simple to complex.

- Chaining – Reinforcing complex behaviour by breaking it into chain of behaviours through giving cues. For example, a rat in a double storey rat house pulling a small staircase, after a little help, from the lower room to the upper room and climbing on it to gain access to food. Another example could be teaching students to solve a complex mathematical problem by solving the first part for them or writing part of the English composition for the students to finish.

Application of operant conditioning techniques to behaviour in classroom situations

In operant conditioning, the consequences of behaviour produce changes in the probability that the behaviour will occur. Reinforcement and punishment are the main concepts in operant conditioning. Operant conditioning can be applied in the classrooms in the following ways:

- Using attractive teaching and learning aids.
- Decorating the classrooms.
- Encouraging students to work in small groups for difficult learning tasks.
- Greeting the students and smiling at them when coming to the classroom.
- Informing the students clearly and specifically the format of quizzes, tests and examinations.
- Making the students understand the rules of the classrooms.
- Giving ample time for students to prepare for and complete the learning tasks.
- Recognizing and reinforcing positive behaviours and genuine task accomplishments.
- Using various types of reinforcement such as teacher approval (praise, smiles, attention, or pats on the shoulder), concrete reinforcement (snacks, books or stationery) and privileges (longer recess time and more time with friends).
- Reinforcing good behaviours and punish bad ones consistently.
- Using schedule of reinforcement, such as surprise rewards, to encourage persistence.
- Use positive punishment as the last option. Use negative punishment, such as class detention, instead.
- Punishing students' behaviour, not their personal qualities.
- Telling the students which behaviour is being punished.
- Teaching students from simple to complex (shaping).
- Teaching students, especially slow learners, through giving them cues to a complex problem (chaining).

CONCLUSION

The theory of operant conditioning complements the classical conditioning theory. It simply conveys an alternative approach in the study and training of animal behaviour. As opposed to classical conditioning which focuses on behaviour being initiated by the environment and the organism simply responds, operant conditioning focuses on behaviour being initiated by the organism itself and the environment simply responds. Under operant conditioning, therefore, the

consequences of behaviour lead to changes in the probability that the behaviour will occur. When behaviour is reinforced using various schedules, it will strengthen or repeat in future; and when it is punished it will weaken or get removed. In spite of being used to study animal behaviour, the theory can be applied to human behaviour as well, especially in the classroom situation. It can be applied by teachers in teaching and learning situations using reinforcement and punishment. However, teachers must not wait for their students to initiate a particular behaviour especially when dealing with complex behaviour; they should apply the principles of shaping and chaining, especially when students are still young.

JEAN PIAGET'S COGNITIVE DEVELOPMENT

- Cognitive development-refers to change in thinking.
- In short it involves understanding how human beings use their minds to effectively deal with their environment.
- The proponent of this theory is Jean Piaget a swiss psychologist
- In 1920s Piaget began studying how children and adolescents deal with their environment
- He developed a model that he used to explain how children and adults make sense of the various novel situations that they encounter
- He concluded that all species of animals including humans are born with two natural tendencies which help them to function effectively in any environment. The following are the two natural tendencies;

(i) Organisation- involves how human beings organise, re-organise and alter their behaviour and thoughts, in order to form more coherent systems.

The process of organisation yields schemas or schemes which are mental models or cognitive structures which people use to understand their environment.

- On other ways schemas refers to the organised systems of actions or thoughts which enable people respond appropriately in different situations. For example, you are baking, you will follow all the process whether it is simple or complicated.

(ii) Adaptation- refers to adjusting oneself to the environment.

Adaptation has two processes namely assimilation and accommodation

(a) Assimilation- involves individual incorperating new experiences into already existing schemas or assimilation entails applying what one already knows to understand what is familiar. Eg A 2 year child refers to a goat as a dog. The concept of a dog is generalised to all four legged animals.

(b) Accommodation- here one requires to adjust or modify the existing schemas in order to more adequately make sense of new situations. Eg the child may notice that the goat does not bark like a dog or behave like a dog.

- Piaget argues that as human beings we are constantly assimilating and accommodating and by so doing, we attain equilibrium.
- When we attain equilibrium, we enter a higher realm of seeking more new knowledge leading to another state of disequilibrium.
- Therefore, life continues that way through a series of adaptation-equilibration-disequilibration-adaptation-equilibration-disequilibration till death occurs.

FOUR STAGES OF COGNITIVE DEVELOPMENT

(1) Sensorimotor Stage From 0-2 Years

- It covers the period from birth to 2 years
- He called sensory- motor stage because children made sense of their environment through motor actions directed by the sensory organs.
- He emphasised that children's understanding at this stage is aided by a combination of sensing the environment as well as acting on it.
- Sensori-motor is divided into six sub-stages which shows the qualitative transformation that takes in the reasoning of a child at this stage. Below are the 6 sub-stages of sensori-motor stage:

Age in Months	Sub-stage	Characteristics
0-1	Reflex Activity	Involuntary reflexes eg rooting, sucking, grasping, looking
1-4	Primary circular reactions	Repetition of actions centered on the child's body eg sucking a thumb, kicking legs, blowing bubbles with saliva
4-8	Secondary circular reactions	Repetition of interesting actions centered on objects eg shaking a rattle to produce an interesting sound
8-12	Coordination of secondary circular reactions	Combination of actions to solve simple problems eg push aside an obstacle to gain access to an interesting object
12-18	Tertiary circular reactions	Experimentation to find new ways of solving problems. Varying actions to get more interesting consequences
18-28	Beginning of symbolic representation	Images and words come to stand for familiar objects. Invention of new ways of problem solving

- The first 2 sub stages children's activities are centered on their bodies.
- The first month children learn to control and coordinate reflexes.
- In primary circular reactions- children get fascinated by playing with their bodies and play with toys.
- The third stage infants getting fascinated in applying their actions to the external world. As a result of this new interest in the external world often repeat actions that produce desirable consequences.
- In the fourth stage infants show purpose and intention of their actions. This intentionality continues in the tertiary circular reactions where infants like to experiment with several actions to see what consequences will up.
- The final sub-stage of sensori-motor stage makes the beginning of thought processes. Infants for the first time, develop the ability to conceptualise their environment through images and words.

In order for children to successfully pass through all the sub-stages in the sensori-motor, it is important that they are provided with adequate toys and a safe environment where they can play. Failure to provide a safe play oriented environment would inhibit a child's development.

Pre-Operational Stage 2-7 Years

- Much cognitive development takes place during this stage because children here developed the ability to use language.
- With the development of language children's ability to represent the world internally is enhanced.
- It is the stage where children start attending preschool
- During this stage children use various things to represent real objects in the environment eg girls use dolls or teddy bear to represent real objects.
- At this stage children develop deferred imitation because of their ability to use language.
- Deferred imitation-involves children observing older people doing something, and imitating it later during play.
- Through observation and learning, children get socialised into mainstream society.
- Regardless of achieving substantial amount of reasoning, there are still a number of cognitive activities which children cannot achieve, among them are;

(a) Lack of Conservation-refers to the fact that some characteristics of an object remain the same even when its appearance is changed. The following are the examples of lack of conservation;

(i) Conservation of Liquid-if you ask a pre-operational child aged 4 or 5 years to solve a task involving conservation of liquid he or she would fail. Here is how you would test a child.

- Get two glasses of the same size and pour the same amount of water in each one of them. After you have filled both glasses, ask the child to confirm that the amount of water in both glasses is the same. While the child is looking, pour the water from one of the glasses into a taller or thinner glass and then ask the child whether the water in the taller glass and the one in the shorter glass is the same. The child will point to the water in the taller glass is more than that in the shorter glass.

(ii) Conservation of volume-To test a child's ability to conserve for volume, roll some clay into two equal balls. Make sure that the child is satisfied that the two balls are the same. Again while the child is looking, roll one of the balls into sausage shape and then ask the child to compare the modified version with the ball. A pre-operational child is likely to judge the sausage like clay to be bigger than the ball shaped one because of being longer.

(iii) Conservation of number- Here arrange ten beads, or any other round objects, into five columns. Now, while the child is looking, spread out the objects in the bottom row, so that the two columns are now diagonal. If you ask the pre-operational child which row had more objects, he or she would indicate that the bottom row has more objects because it covers more space.

(iii) Conservation of area- is the most challenging for pre-operational children. To test it, place some square blocks, say ten of them, on two sheets of paper of the same size. Make sure that the child agrees that they are the same. While the child is looking, spread out the blocks on one of paper all over the sheet and ask the child which one of the two sheets of paper has more uncovered space. Again, a pre-operational child is likely to judge the sheet with spread out blocks to have less uncovered space because of the inability to conserve.

Reasons For Failing To Conserve

- Therefore, children fail to give correct responses because they engage in centration. Centration- is when children tend to focus on one dimension of a problem at a given moment.
- In the case of conservation of liquid, children centre on the height of the glass and conclude that the taller glass has more water in it because children are unable to engage in decentration. Decentration is the ability to consider two or more aspects of a given situation at a goal.
- Pre-operational children are not able to conserve because they are not capable of reversibility. Reversibility is the process of failing to undo a mentally action taken.
- Pre-operational children fail to conserve because they cannot engage in transformational thought. Transformation thoughts involves the ability to conceptualise changes of processes from one state to another. Eg when a ball of clay is rolled into a sausage like shape, pre-operational cannot comprehend the transformation that takes place. As a result of this inability, pre-operational children are said to engage in static thought.

(b) Egocentrism-refers to a tendency for children to view situations only from their own point of view, children here trouble seeing others' perspective on a situation.

- For example, often children conclude that if they know something, then everybody else should know it.
- It is from this reason that stories told by children at this stage are difficult to follow they usually use pronouns, without first using actual names for people to know who or what the pronouns are referring to.

(c) Inability to understand relationships between classes

- Pre-operational children are able to classify objects according to shape, colour, function or some other quality.
- But they still find it difficult to think about relationships that exist between classes and sub-classes or relationships that exist between wholes and parts.

Concrete Operational Stage 7-11 Years

- Starts around 7 to 11 years
- It concides with the time children start grade one
- Here children are able to successfully handle most of the mental operations which they could not handle at preoperational stage.
- Children at this stage have developed the ability to place objects in series.
- The ability to solve tasks involving seriation allows children to mentally arrange objects along logical, quantifiable traits such as length or height.
- Here also children develop the concept of transivity. Transivity refers to the relationship that exists between or among things that are placed in sequential relationship. Syllogistic statements make good example here eg Wiza is smarter than Lukundo and Lukundo is smarter than Selina. Who is smarter between Wiza and Selina? Children at this stage would easily decipher the logic that Wiza is smarter than Selina.
- Concrete operational children overcome egocentrism which characterised the operational stage. They increasing get better at seeing situations from others' perspective.

- Children at this stage have a limitation that's the inability to engage in hypothetical and abstract reasoning.
- Note that all the cognitive operations of concrete operational children are tied to observable world of physical objects.

Formal Operational Stage 11-12 Years

- It starts at the age of 11 and 12 years and continues into adulthood.
- Here children develop the ability to perform mental operations on ideas
- Adolescents have the ability to deal with ideas that are divorced from the world of reality. It involves systematic ways of solving problems.
- Children at this stage are able to decipher syllogistic statements.
- They also engage in hypothetical-deductive reasoning.
- Hypothetical-deductive reasoning involves reasoning from a general premise of an idea to its specific implication. So when solving a problem adolescents are able to generate a range of possible solutions which they can try out on the problem at hand.

Educational Implications of Piaget's theory

- The teacher should understand each individual learner's thinking because children vary in their level of cognitive and academic development.
- Teachers should focus on the process of learning, rather than the end product of it.
- The teaching strategies must be matched with the abilities of the learners
- Using collaborative, as well as individual activities so that children can learn from each other.
- Devising situations that present useful problems, and create disequilibrium in the child.
- Evaluate the level of the child's development so that suitable tasks can be set.

Vygotsky's Sociocultural Theory of Cognitive Development

- He was born in 1896
- He died at age of 38
- Both Piaget and Vygotsky believed that children learn and develop through active interaction with their environment.
- Two difference between piaget and Vygotsky
- .Vygotsky believed that culture provides the unique ingredient that determines how children's cognitive development progress
- . Unlike piaget who saw private speech as egocentric Vygotsky saw it as a positive mental tool which facilitates information processing.
- However, vygotsky stressed that culture is the arena in which biological and environmental factors meet to influence development. Eg the research conducted by saxe (2002) found that children learn better mathematics concepts using unique cultural method than conventional methods.
- Vygotsky explains cognitive development from the collectivistic cultural perspective, while Piaget explains it from individualistic perspective.

- Therefore, Vygotsky believed that children cognitively develop in non-western cultures through the concept called Zone proximal development (ZPD)
- ZPD is the gap between what children can accomplish independently and what they can accomplish when they are interacting with others who are more competent (Lightfoot e at. (2009)
- The lower limit of the ZPD is the level of problem solving reached by the child working independently.
- The upper limit of ZPD is the level additional responsibility the child can
- accept with the assistance of an able instructor
- The ZPD captures the child's cognitive skills that are in the process of maturing and can be mastered only with the assistance of a more skilled person.
- Scaffolding- involves changing the level of support.eg as the pupils' competence increases ,less guidance is given.
- Scaffolding is mostly provided in African cultures where most learning of cultural tasks happens through participation and observation.

The Role of Language acquisition in cognitive development

Vygotsky was particularly interested in the role of language in cognitive development and came up with three forms of language;

1. Social Speech: This is what Vygotsky referred to as the external communication that people use to talk with other people, and he believed that this form of language was typical in children from the age of two.
2. Private Speech: This is what Vygotsky referred to as the internal communication that a person directs to themselves. It serves an intellectual function, and it is typical in children from the age of three.
3. Silent Inner Speech: Vygotsky believed that this is what happens when private speech diminishes in its audibility until it becomes a self-regulating function. He believed this was typical in children from the age of seven.

Implication of Socio-cultural theory to teaching

1. The teacher should use the child's zone of proximal development in teaching. It is important for the teacher to know what the child can do alone and what he or she can only do with the support of a teacher.
2. Teacher should utilise peer tutoring as a method of delivering instructions to learners with low abilities. Skilled peers should be used to teach their weaker peers.
3. Instructions must be placed in the meaningful context. This entails that the teacher should provide learning situations that will allow the learners of experience the content or material he or she wants them to learn.
4. Educators should also monitor and assess children's use of private speech. Encourage the secondary school pupils to employ internalised private speech when solving mathematical problems for example.
5. The teacher should effectively assess and determine the child's ZPD by using tests of varying degrees of difficulty in order to know where to begin teaching.

THEORIES OF PERSONALITIES

PERSONALITY DEFIN.

•Santrock (2002) defines personality as the set of habitual behaviour, cognitions and emotional patterns that evolve from biological and environmental factors

•Travers(1997) defines personality as the pattern of collective character, behavioural, temperamental, emotional, and mental traits of a person

•Sigmud freud concentrated on four aspects of theory of personality namely, levels of personality, structure of personality, psychosexual stages and defense mechanisms

LEVELS OF PERSONALITY

1. Conscious level of personality-it is the state of being actively aware of what is happening now.

•Sigmund argued that conscious life involves the psychological part of our life and the prime cause of behaviour.

2. Preconscious level of personality-involves life experiences that can be brought to consciousness if sufficient attention is directed to them. Eg you can remember the course you did at diploma level.

3. Unconscious level of personality- involves ideas, stories, events and experiences that have been repressed and therefore are not readily available to the conscious level but from subtle ways through a person's behaviour or a slip of the tongue or on a dream.

•Responsible for most of man's behaviour

THE STRUCTURE OF PERSONALITY

•Id-it represents the most unsocialised aspect of the child and continues to be part of personality of an individual's existence. It is unconcious part of our personality. It is the most primitive part of our personality containing biological reflexes and drives.

•Main function is to maintain a balance amount of energy or tension within an individual.

•Child (2000) argues that if there is an increase in tension, the id seek immediate ways of either eliminating or reducing excessive tension. Controlled by pleasure principle and moral standard are irrelevant. In short it influence our behaviour

The ego

•Ego develop through the process of socialization which is governed by the reality principle. eg the interaction between a child and its environment.

The ego helps us to deal with reality. (Reality principle)

The ego controls the blind passions of the ld to protect the organism from injury.

The ego tries to forestall action until it has a chance to perceive reality. Although it is independent from ld it borrows energy from the ld.

Superego

•It is the part of a person's mind that acts as a self-critical conscience, reflecting social standards learned from parents and teachers.

•It plays the critical and moralizing role.

•Here the ego mediates between the desires of the id and the superego.

PERSONALITY DEVELOPMENT (PSYCHOSEXUAL STAGES)

•They are 5 stages and are called psychosexual because they are pleasure oriented where a person experiences special pleasure similar to the pleasure derived from sexual intercourse.

Oral stage (0-1year)

•Mouth stands out as an area of pleasure.

•This covers the mouth, the tongue and the lips in generating pleasure. Eating becomes a pleasurable activity.

• Satisfaction the baby receives at this stage is similar to the pleasure and satisfaction it will experience in adulthood.

•Here the mother is important in the development of the child's personality.

•Warm relationship with the mother is important at this stage.

•Failure to satisfy the baby at this stage it result into fixation(persistence of sexual traits) eg talkative, finger biting, smokers, heavy drinkers, kissing, thumb sucking etc

Anal stage (2-3 years)

•Anal area becomes the pleasurable region for the child.

•As the child excretes waste matter, it experiences pleasure because of expelling the fecal matter which causes the state of tension.

•Toilet training becomes important.

•The child experience conflict ie (i) conflict between retention and elimination.

•This reflects the discrepancy between the id and ego.

Failure in gratification may result in ;

(a)Being dirty in adulthood

(b) Others develop compulsiveness cleanness disorder (CCD)

(c) Others become stingy because by that time there were trained to delay gratification instead of releasing the fecal matter.

(d) Others become smart.

However the train by the mother at this stage may frustrate or reward a child later in adulthood.

Phallic stage (3-6 years)

•Playing with a penis or clitoris become prominent feature

•Oedipus complex- the boy takes interest in his penis.

•The organ produces pleasure and takes the desires of comparing the organ with others males and animals.

•The boy imagines the role he might play as adult and become attached to the mother and thinks of having sex with her.

•Later the boy fears to continued love with the mother might lead to his genital being cut off by the father.

• The fear of being castrated ,the boy resolves his oedipus complex

•Electra complex- from birth the girl has a warm relationship with the mother until she discovers that she has no penis.

•Lack of penis makes her feel both inferior and jealous and develop penis envy.

•She develops hatred towards the mother who possess similar organ and perceive her as rival and longs to overthrow her so that she takes the love and attention she receives from the father.

•The girl longs to have a baby with her father so as to compensate for the missing penis.
•Impact of this stage seems to persist during adulthood and later in life e.g. The choice of an individual is largely influenced by the kind of relationship he/she had with the parental of the opposite sex.
•Some do not value relationship with opposite sex
•Cannot keep friends.
Latency stage (6-11 years)
•Child is sexually dormant. No interest in sexual gratification
•The child begins to acquire cultural skills, values and roles to its sex e.g engaging in games, school work etc
•This strengthens the superego of the child.
•If fixation features include failure to engage in conversation with opposite sex.
•Failure to maintain friendship.
Genital/ Puberty stage (11 and 13 years Above)
•They begin to develop interest of the opposite sex with whom they can experience intimacy relationship that is legitimate and socially acceptable.
•They are also interested in planning for their careers and raising families.
• It is important to note personality development can result into fixation, normal growth and regression (experiencing frustration at a certain stage of development)
•It is important for the caregivers or parents to help children achieve each stage successfully.

DEFENCE MECHANISM
•It is a process in the brain that makes one forget or ignore painful or disturbing thought situations.
•Defence mechanism are often unconscious mental process (repression) by a person to protect himself or herself for the time being against psychological dangers (Morgan,1983:123)

Examples of defence mechanism
1. Repression-this mechanism enables a person to block certain painful experience from becoming part of consciousness which are pushed into unconscious mind.
2. Regression- enables a person returning to the time in life which was more comfortable through ache like crying, regret etc. Eg a lady may resort to regression by returning to her parent's home after failing to cope with marriage.
The only danger is lack of confidence but also they feel secure in old tried situation.
3. Isolation- can lead a person to separate ideas or feelings from the rest of their thoughts. In this way, a person attempts to protect the ego from anxieties caused by a specific situation.

4. withdrawal- this is type of mechanism makes an individual to withdraw himself from the situation that causes frustration or failure.
5. Displacement-this is the mechanism that re-direct unwanted feeling or thoughts from more threatening or powerful person to a weak one.
6. Rationalization-it enables a person to justify his or her otherwise unjustified behaviour by giving socially acceptable reason for it.
Two types of rationalization;
(i) sour grapes-this where a person fails to obtain what he wants and tries to avoid the bitterness of disappointment by maintaining that he did not want it any way.
(ii) Sweet lemon attitudes-this is where people maintains that whatever happens is all for the best.
7. Projection- a mechanism that enables an individual to attribute one's undesirable character to others. Eg Adam said it Eve who made to sin.
Applications of Freud's theory to teaching and learning
•Psychodynamic models continue to have an effect on education and intervention for children with special needs.
•Freud wrote that only he could be an educator who knew how to empathize with the psychical life of the child. An educator should have knowledge about psycho-analysis in order to understand children better.
•Teachers need to consider that unconscious drives or motives may affect classroom behaviour and that, defence mechanisms, such as rationalization and denial may be used by students to reduce their feelings of anxiety during a conflict or confrontation.
•Classroom behaviour will sometimes reflect the aspect of displacement. For example, children who are abused at home may act in a very anti-social way towards their teachers and classmates. This is the principle of transference.
•Freudian theory can help teachers understand their significant role in early personality formation. Excessively restrictive measures or practices such extreme discipline can lead to resentment and the attempt by learners to resolve the conflict in potentially harmful ways.
•The teacher ought to provide a positive mirror and model of competence for the student to emulate during classroom instruction.
ERIK ERIKSON'S PSYCHOSOCIAL STAGES
Erik Erikson (1902-1994) was concerned with human development from birth to death, he was interested in how children socialize and how this affect their sense of self.
•Successful completion of each stage results in a healthy personality and successful interactions with others.
•Failure to successfully complete a stage can result in a reduced ability to complete further stages and (unhealthy personality and sense of self.
Trust versus Mistrust (Birth-1 year)
•Children learn to either trust or mistrust their caregivers based on their consistency in providing care.
•Successful completion makes a child to have trust and confidence. Also feel secured

•Unsuccessful completion result into mistrust and fear about the world and brought about anxiety, suspicions etc
•They also believe that the world to them is unpredictable
Autonomy vs Shame and doubt (1-3 years)
•Children focus on developing sense of personal control.
•Children are allowed to do what they are suppose to do on their own with minimal supervision. In this way they develop confidence and sense of autonomy (independence)
•Over controlled, critized and not given opportunity develop lack of self -esteem, feel sense of shame or doubt in their abilities.
•If not given the opportunity to assert themselves, he or she will begin to feel inadequate in their ability to survive, and may then become overly dependent upon others.
Initiative vs Guilt (3-6 years)
•One key feature is that children at this stage are very curious and ask a lot of questions some of which are very embarrassing. If teachers and parents answer these questions honestly, openly and using a language they can understand, the child is likely to develop a sense of initiative and inquiry.
•It is a preschool stage. Children start to engage in activities like games. This makes feel secured, lead others and make decision.
•Those who fail at this stage they feel guilt and remain followers.
•They also lack self- initiative.
Industry vs inferiority (7-11 years)
•During this time, teachers play an increased role in the child's development. If children are validated, encouraged and reinforced for their initiative, they begin to feel industrious and feel confident in their ability to achieve goals.
•Children at this stage develop a sense of competence by mastering new skills.
•They develop sense of pride in their accomplishment
•They initiate projects and see them through completion.
•If praised for achievement they tend to be industrious in life.
•If not encouraged the child tend to feel inferior, doubting his abilities and may not reach potential
Identity vs Role confusion (12-18 years)
•Children achieve independence from their parents and reach physical maturity
•Adults are concerned about what kind of person they are becoming
•The goal of this development is ego identity
•Failure to accomplish this stage it results into role of confusion, doubt about sexual and occupation identity.
•If they accomplish many aspects they develop an identity
Intimacy vs Isolation (18-45 years)
•Begin to share ourselves more intimately with others.
•Exploring relationship leading toward longer term commitment with someone and other family members.

•Successful completion can lead to confortable relationships and sense of commitment, safety and care within a relationship.
•Avoiding intimacy, fearing commitment and relationship can lead to isolation, loneliness and sometimes depression.

Generativity vs stagnation (45-65 years)

•We establish our career, settle down within a relationship.
•We give back to society through raising our children, being productive at work, involved in community activities and organisation.
•Failing to achieve these objectives we become stagnant and victims of self- absorption.

Integrity vs Despair (65 and above)

•Older adults reflect on their lives, looking back with a sense of fulfillment or bitterness

Implications of the theories to education

•It helps to further modify and consolidate both pupils and teachers behaviour in the learning and teaching process
•Psychosocial theory can help teachers provide learners with leadership skills
•The structure of personality that is id, ego and superego are also importance to the task of a teacher. Further helps the teacher to understand the personality of pupils.
•The teacher can emphasis on the development of superego because it stresses the importance of values, morality and justices.
•Psychosexual and psychosocial stages make it possible for teachers to understand some behaviour exhibited by their learners.
•The theories help a teacher to understand that children's behaviour must be guided by parents or caregivers in order for them to move in a sequential manner.
•Helps the parents and teachers to guide desirable behaviour

Application of Erikson's theory to teaching and learning

•Give children the opportunity to make choices and act upon those choices. Because the crisis of initiative vs. guilt determines whether a child learns to plan activities on her own or comes to associate self-directed behaviour with punishment, she must have the opportunity to make decisions.
•A teenager who successfully navigates the crisis of identity vs. role confusion will be able to answer the question, "Who am I?" with confidence.

GOD BLESS