THE CONCEPT OF GROWTH AND DEVELOPMENT

The Meaning of Growth

Growth has been described as the increase in size and structure of parts of the body. It is also the permanent increase in the number of cells acquired by an organism in the course of development. For example, if you notice an increase in size, height and weight of any part of the body in someone, that can be called growth. Growth is usually physical and therefore we can observe, compare and measure it. For example, most often you and I hear people say 'Kojo has grown tall' or 'Ama is not growing'

Growth is quantitative in nature and can be measured in grams.(gm) or centimeters (cm).

The Meaning of Development

Development refers to the qualitative changes that an individual undergoes in the course of his or her life span. Simply put, development implies an increase in our ability to function efficiently. If a baby who could only crawl can now walk, it means that there has been a qualitative change in the way he functions – now, he is able to walk and this is seen as development. These changes could be personality, physical and motor intellectual changes.

One other example, if a child who used to babble can now utter some words, it means there has been a qualitative change in the way he functions – his ability to use words.

This is seen as development. It must be noted that development is a much broader term which involves both qualitative and quantitative changes. For example, the child's ability to walk or speak will depend on a level of physical growth or maturation.

The difference between Growth and Development are:

a).While growth can be observed (seen) and measured, development although can be observed, cannot be measured.

b).Growth is quantitative but development is both qualitative and quantitative

Meaning of Maturation

Maturation may be defined as the process of gradually bringing the various parts of an individual's physical, physiological and psychological features to full development. Difference maturation processes occur for different parts of the body and traits of the sense organs or of the nervous system or of secondary sex characteristics of the psychomotor ability or of intellectual functions or of emotional reactions.

Maturation creates increasingly complex behaviours as the various organs and systems of the body develop in structure and function. An important and interesting aspect of development is the way in which organs are prepared and made functional long before they are needed. This avoids undue haste in development.

Thus at birth most children can adjust themselves to their new environment. Organs are sufficiently developed and mature for use. Many behavior patterns are not yet needed, and therefore are not fully developed.

They develop more slowly and become fully functional only when the child is old enough to require them. Thus, the human brain matures slowly, enabling some increasingly complex intellectual activities to be performed. The ability to sit, crawl and walk depends on the maturation of the brain.

For teaching to be purposeful and for educational programmes to be meaningful, they must be realized to the natural trends of maturation of the child's level of attention and his ability to do complex intellectual work. The child's words increase with the development of the sense organs as well as the brain.

It is important for teachers to be aware of this in making their plans for teaching particular subjects. Such plans should involve activities that are within the pupils' capabilities.

READINESS: The ability for a person to perform activity very well

Readiness for learning depends on physical and mental maturation and also on the accumulation of experiences as a foundation for the building of new learning.

One of your tasks as a teacher will be to recognize readiness in the child. Readiness in the child is often shown by an anger response to the learning task with which he is presented. It is always accompanied by rapid progress once learning is begun.

Lack of readiness may be due to lack of maturation or insufficient preparation of the child in those foundations of learning upon which the new learning will be built. The

result will be painfully slow progress or no progress at all. Readiness for a specific activity requires the maturation of the organs responsible for that activity. The organs concerned may any of the sense organs, the central nervous system, etc Readiness implies preparedness.

THETHREE DOMAINS OF DEVELOPMENT

1. Physical Development

It is the growth and changes that occur in a person's body. These include changes in height, weight, size, bone thickness, muscles, glands, the brain, and sense organs (eyes, ears, nose, etc). These are all parts of physical development. Motor skills such as learning to walk and to write are all parts of this domain.

Physical development also includes the effects of aging. These include changes in eyesight or in muscular strength but do not usually include physical changes that result from accidents, illness or other special events.

2. Cognitive Development

Cognitive Development can also be called intellectual development. Cognitive development refers to changes in reasoning, thinking and language acquisition. It also deals with how individuals gain and store knowledge.

3. Psychosocial Development

Psychosocial development concerns changes in feelings or emotions as well as changes in how individuals relate to others. It emphasizes the child's interactions with his environment. It includes relationships with family peers and teachers.

The three domains in fact influence each other in many ways. For example, physical growth makes the cognitive process of language acquisition possible and language also makes early social relationship more possible. In turn, social relationships provide settings for further cognitive learning, etc.

THE PRINCIPLES OF GROWTH AND DEVELOPMENT

The Principles of Growth and Development are:

1. Growth and Development are directional:

This principle tells us that development starts from a point and progresses towards another. The direction that development follows includes the following:

a).Development starts from the head and moves towards the heel or tail. This is known as cephalo-caudal direction. The head region (cephalo) develops before the heel or tail region (caudal). An example is that a baby's head develops before the torso (chest, arms and legs).

b).Development starts from the centre of the body to the outer parts. This is known as proximodistal direction. This means that the central or middle part of the body (proximo or near) matures earlier and becomes fully functional before the outer parts or those towards the periphery distal of far). For example, during pregnancy, the heart, liver and pancreas develop first before the fingers and feet.

2. Growth and Development are Continuous Processes

Development is said to be continuous because it begins at the time of conception and continues till death. This means that stages of development follows one from the other with no clear cut break. As the child develops, the changes which occur in his characteristics are so gradual that it is not possible to see such changes daily or at short intervals. For instance, there are spurts in physical growth such as the increase in height and weight during adolescence. Again there is sharp rise in vocabulary acquisition during the pre-school years (Owusu-Banahene, 2008).

3. Growth and Development are influenced by the heredity and environment

This principle explains that human development is of genetic or inherited factors and environmental factors. Heredity factors are those that are inherited from our parents through the genes. For example, colour of skin, height, size, etc, and environmental factors are the influences we receive from the environment such as the home, community, peer group, school, etc. The two forces interact to determine a particular trend of growth and development.

4. Growth and Development are Cumulative in Nature/ Epigenetic.

This principle explains that certain changes in the human body may appear sudden but in reality it is a result of a prior growth and experience. For example, before the child utters his or her first word, it is preceded by babbling of sounds such as 'da', da', 'ma', 'ma'. This then leads to the word 'dada' or 'mama'. In the same way, before the child's first step, he or she must be able to stand on both feet.

5. Growth and Development are Individualized Processes

This implies that all individuals develop in their own way. Each child has his or her own rate of physical, mental, emotional and social development regardless of the stage of development. For example, we may find differences in height, weight and emotional characteristics, etc, if we observe children of the same age. Hereditary and environmental factors may speed up or delay the growth of individuals born on the same day hence; there are individual differences in development.

6. There are Critical and Sensitive Periods in Development

There are certain periods in human development in which certain influences become very critical. For example, the first three months of pregnancy are very critical and sensitive. During this period, the various organs of the developing child are under formation so the environment of the mothers' womb needs to be well-nourished and free from diseases and other toxic materials like alcohol and drugs. At this critical period, anything that negatively affects the pregnant woman also affects the unborn child. For example, the infant can easily suffer from hearing impairment, mental retardation or visual impairment when a pregnant woman suffers from a disease called German measles or rubella.

In the same way, the developing child can be still born, miscarried, born blind or dead when a pregnant woman contracts Sexually Transmitted Diseases (STD's) such as Syphilis, Gonorrhea and Acquire Immune Deficiency Syndrome (AIDS) during the first three months of pregnancy.

7. Different parts of the body Develops at Different Rates:

This principle generally means that physical growth, cognitive ability, etc may grow at different rates and reach their maximum developmental levels at different rates.

Development therefore is not uniform for all features of an organism.

8. Growth and Development are Influenced by Maturation

This principle refers to the fact that before we can perform ay task, our physical organs necessary for the performance of that task must have reached a stage where

they are capable of performing the task. For example, a child cannot be trained to walk, when his legs are mature or ready to perform the task of walking.

9. Development follows an orderly sequence

Development follows an orderly sequence in all individuals. This shows that there is similarity in the order in which people grow and develop. For example, the child sits before he or she crawls, and crawls before he or she stands, and stands before he or she walks. In the child's language development, it starts with crying, cooing, babbling, using single words and finally using sentences. These sequences are the same for children of all cultures.

10. Development Proceeds in Stages

As human organisms, we develop in stages in almost all aspects of our lives and each stage is marked by certain characteristics. For example, during pregnancy, the foetus develops the rough three stages. These are the germinal stage, embryonic stage and fetal stage. After birth, individuals develop through infancy, childhood, adolescence and adulthood.

11. Growth and Development proceed from General to Specific

The first cells of the human organism immediately after conception are undifferentiated. Generally, we cannot see all the parts of the human body such as the heart, ear, leg, etc. with them, however, they become differentiated (specific) and we can see these body parts. The same thing applies to children's learning. At first, children see all men as 'dada' and all women as 'mama'. Later, they are able to make out who father is, and who the 'house boy' or visitor is.

EDUCATIONAL IMPLICATIONS OF PRINCIPLES OF GROWTH

AND DEVELOPMENT

1).A rich environment is an important factor to a child's total growth and development. A rich environment includes the availability of play objects, teaching and learning materials, good home or classroom accommodation or an environment that is suitable for learning. As a teacher, and probably a parent, you should create

an environment that I s enriched with a lot of teaching and learning ma terials that will enhance children's learning.

2).Since development is directional; you should do well to present your lessons orderly and systematically to pupils. The materials should be graded from known to unknown, from simple to complex, and from concrete to abstract.

3).You should give pupils enough exercises so that they will have enough practice of whatever is discussed in class.

4). Since development is an individualized process, individual differences exist during children in the same class. As a teacher, you should therefore cater for individual differences when presenting your lesson. You should sometimes spend some time to explain certain concepts further to particular problems with their needs.

5).Finally, as a teacher, you should draw upon the relevant past experiences and knowledge of your pupils. This is because, development is cumulative, and for a better understanding by pupils, you should build upon what they already know.

6).Development takes place at different rates in the body. This implies that as a teacher and probably a parent, you should note this and provide appropriate guidance to pupils so that they do not become alarmed at the changes that take place in their bodies.

7).With the principle which states that development proceeds in stages, you should present only the lessons that suit the age level of children. This is very important because pupils cannot perform, beyond the stage at which they are functioning.

8).We learned from lesson five that growth and development are influenced by maturation, and that children cannot perform an activity for which they are not mature to perform. This means that, teachers should assign tasks that match the maturation level of children.

9). Growth and development proceed from general to specific, therefore, teaching and learning should be designed in such a way that they move from general to specific. In other words, general ideas about things should be taught before the specific.

10).Development is said to follow an orderly sequence so in classroom instruction, teachers should present lessons orderly or systematically so that pupils can follow easily to help them to understand.

11).Finally, at PTA meetings, parents must be educated (by teachers) about the critical periods in the child's life to guard against things that can negatively affect the child's future development.

GENETIC AND ENVIRONMENTAL INFLUENCES ON DEVELOPMENT

Genetic Functioning

A gene is the part of a cell in a living thing which controls its physical characteristics, growth and development. It is contained in the chromosomes which the child inherits from its parents. There are two kinds of genes. These are the Dominant and the Recessive genes

The dominant ones are stronger and more active at particular periods, whiles the recessive ones are weaker and stay dormant at particular periods in the history of the organism. The sum total of all the genes an organism inherits from its parents is known as its genotype. The result of the interaction between an organism genes and its environment is known as its phenotype. How a person actually looks like, is thus an interaction between the individual's genes and the environment.

Genes consist of ceded strips of deoxyribonucleic acid (DNA) arranged in a ladder-like structure that form a double helix shape. When a gene is activated, it issues an instruction to a cell to synthesis a particular problem at a time. The combined effect of millions of genes working together in a complex and ordered fashion eventually result in the development and growth of a living creature. The stands of the DNA contain the genetic blue print or genetic cades, which give the right environmental conditions and nourishment will produce the individual.

Some of the genes may be defective and when these are activated and become the dominant gene, they produce detrimental effects on the organism. Two of such main defects are chromosomal abnormalities and genetic abnormalities.

Each cell in the human body except the egg cell in the woman and the spermatozoa in men contains 46 chromosomes. Forty –four of these chromosomes control all the physical characteristics and functions of the body.

They are called autosomes. The last two are sex determining chromosomes. One has an X shape and it is called the X chromosome.

The other has a Y shape-shape and is called the Y chromosome. A woman's body has 44 autosomes and two X chromosomes in each cell. The man has 44 autosomes and X and Y chromosomes. It is only the man who has the Y chromosome.

The egg cell in the woman has 22 autosomes and an X chromosome. The spermatozoon has 22 autosomes and an X and Y sex chromosome. If the egg cell is fertilized by the spermatozoon with a Y chromosome, the resulting baby would be a boy, if it is fertilized by one with an X chromosome, then the resulting baby would be a girl.

A fusion of the sperm and egg develop into a zygote having 46 chromosomes. In some rare cases, however, chromosomes may be accidentally multiplied or get lost. This results in certain abnormalities known as chromosomal abnormalities.

GENETIC FACTORS THAT AFFECTS DEVELOPMENT

1).CHROMOSOMAL ABNORMALITIES

a).Down's Syndrome

In Down's syndrome, there are 47 chromosomes instead of 46. Children with this problem are also called Mongoloids. Some of the features are that, they are short, have broad nose-bridge, large protruding tongue, open mouth and raund round face. They also have varying digress of mental retardation.

b).Turner's Syndrome

This is usually found in females. There is a missing sex chromosome (X) making the number 45. Women having Turner's syndrome are intellectually, but they show evidence of several physical abnormalities. Usually they do not develop secondary sex characteristics because their bodies do not produce female hormones.

c).Klinefelter's Syndrome

This is a genetic disorder in which males have an extra X chromosome making them XXY instead of XY. Males with this disorder have undeveloped testes, developed breast and tend to be extremely tall. There is another report that these men tend to be impulsive and antisocial and even violet.

2. RHESUS (RH) FACTOR

From the study of Rhesus monkeys and which was later undertaken with human beings, it was discovered that every human being has one of the two blood characteristics – a negative or positive blood character. However, more than 80% of humans have positive blood grouping. If a child inherits the RH Positive blood from the father, but the mother's grounds Rh negative then there occurs a blood incompatibility, (disagreement). The result is the production of antibodies by the mother's blood which attacks the red blood cells of the child's blood and prevents oxygen from being properly circulates. This cases a miscarriage or may lead to a still born.

3. METABOLIC DISORDERS

Metabolism in the body refers to the chemical changes which take place in the body when food is taken. Some enzymes produced by the metabolic system are supposed to work on it and break down the complex food substances to simpler forms which can be used by the body. For example, the inability to break down protein is a condition known as phenylketonuria (PKU for short). Such a condition would damage the central nervous system of the child and may lead to a poor mental ability.

4. OTHER COGENITAL DISEASES

- Asthma
- Sickle cell
- Diabetes

PRE-NATAL ENVIRONMENTAL FACTORS THAT AFFECT DEVELOPMENT

1).MATERNAL AGE

A recent finding indicates that the ideal age for a woman to bear children is between 20 and 35 years. If possible, it is best not to begin having babies before the age of eighteen and to complete childbearing before forty. The intellectual deficiencies suffered by children of teenage parents can be explained more by social and economic factors other than purely biological factors. The older mother is more likely to give birth to an infant who suffers from specific genetic diseases like Down's syndrome.

2).MATERNAL MALNUTRITION

The foetus receives its nutrients from the mother's blood stream through the placental membrane. Maternal diets which are no nutritious are associated with increased rates of abnormality. Diets deficient in calcium, phosphorus and Vitamin B, C and D are associated with higher frequencies of malformed fetuses, e.g. Rickets, faulty dental development, etc. Diets, deficient in proteins can result in various degrees of malformation and mental retardation.

3. DRUGS AND ALCOHOL

Certain drugs taken during pregnancy, especially at the early stage, are known to have certain effects. A typical example is thalidomide a drug that is taken to prevent morning sickness. It can result in producing a baby without limbs.

4. ATTEMPTED ABORTIONS

Unsuccessful attempted abortions can lead to several complications that may not see serious outward. Various forms of mental and physical handicaps or deformities may result from such attempted abortion.

5. MATERNAL ACCIDENTS

Some physical agents like motor accidents or heavy falls cause damage to the foetus. The degree of the effect depends on the severity and the timing of the accidents.

6. MATERNAL EMOTIONAL CONDITION

Research has shown ample evidence to indicate that pregnant women's emotions do have an impact on the foetus and can result prematurely, or prolonged pregnancy, etc.

7. X-RAY

When a mother is exposed to excessive x-ray or other radiations, especially in the first three months of the pregnancy, the foetus may be in danger of variations kinds of malformations.

8. TRAUMA: The fall of a pregnant woman can affect the foetus.

9. SEXUALLY TRANSMITTED DISEASES

Such diseases include gonorrhea, syphilis and HIV infections. All these sexually transmitted diseases can case mental retardation.

10. RUBELLA (GERMAN MEASLES):

This is a childhood disease which also causes serious problems to a foetus especially in the early periods of development in the uterus or womb.

PERI-NATAL INFLUENCES ON DEVELOPMENT

The peri-natal factors that affect or influence growth and development include the following:

1).Anoxia:

Anoxia is lack of oxygen. The cause of this could be as a result of angulations of the cord or prolonged and complicated labour. When this happens, the brain does not always receive enough oxygen and therefore damage is done to the brain tissue. Labour, in fact, should not be unduly prolonged.

2).Breach-delivery:

In many cases of breach delivery, the baby may come out pictorially with the leg or arm rather than the head. This creates quite some problems because of the complications that will result in the delivery process. If the foetus is not properly handled at the level, a number of injuries relating to the brain and the limbs can result.

3. Narrow Pelvic

Narrow pelvic on the part of an expectant mother is of itself dangerous because damage may be caused to the head of the child. This explains why it is advised that girls under 18 years should not be encouraged to give birth.

4. Use of Forceps

Sometimes, as a result of the narrow pelvic of the expectant mother or the size of the child's head, doctors are compelled to use forceps. Forceps are dangerous because if wrongly applied, brains tissues, eye and ear may be damaged resulting disability.

5. *Fall of Mother*: Falls by pregnant women can also affect the foetus.

POST-NATAL FACTORS OR AFTER BIRTH FACTORS INCLUDE

The post-natal factors that affect or influence the growth and development include the following:

1).Measles: The consequences of measles are great. Blindness, brain damage, mental retardation and convulsion are typical. In Ghana, measles is responsible for a large number of disabilities as well as deaths.

2).Poison: Poisons are responsible for a substantial number of post-natal causes of mental retardation. Such poisons include toxins and other lead-infected objects such as the lead of a pencil other used by primary school children. The lead of a pencil is dangerous for children as increased accumulation of lead in the blood stream could result in brain damage. Children should therefore avoid putting these objects into their mouths. Poisonous substances include paint and the coating of walls.

3. Other post-natal factors are:

- ❖ Whooping cough
- ❖ Head injuries

THE CONCEPT OF NATURE-NURTURE

The Concept of Nature (Heredity)

Nature or Heredity refers to the transmission of traits or characteristics from parents to their offspring through the genes. The medium of this transmission is primarily through sexual intercourse between the male and female. Inherited characteristics include body size and wright, colour of hair, skin and eyes, level of intelligence (intellectual ability), some genetic diseases, blood type, etc.

Influence of Nature (Heredity) on Development

1).Heredity sets the upper and lower limits of an individual's developmental potential. For example, a child who has inherited a short height may never become tall. In other words, an inherited characteristic determines whether an individual will grow tall or short, intelligent or dull, etc.

2).The sex of every individual (male or female) is determined by nature. The nucleus of every human cell contains structures called chromosomes. The chromosomes came into two forms – X and Y chromosomes. The female sex cell (eggs or ova) are

all X chromosomes, but the male sex cells (sperm) are combination of X and Y chromosome. If an X chromosomes from the man fertilizes an X chromosomes from the woman, the result will be a girl ie. XX = a girl or female.

On the other hand, if a Y chromosome from the man fertilizes an X chromosome from the woman, the result will be a boy ie .YX = boy or man. See the diagram below:

| Mother | Father | Mother | Father |
| (XX) | (XY) | (XX) | (XY) |

XX= Girl   XY = Boy
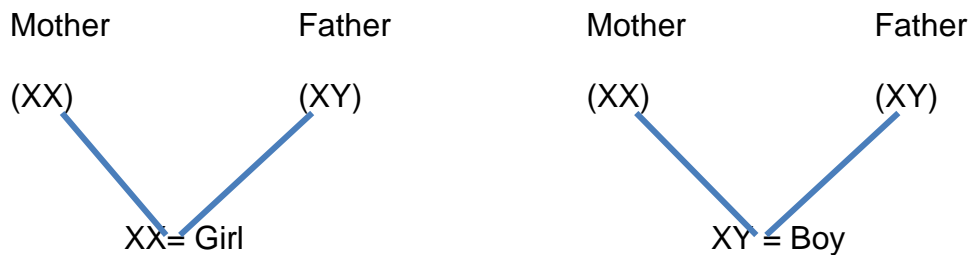
3. The blood type of an individual is also inherited. This is the reason why we can determine the father of a child through a medical test called paternity test.

4. Certain diseases which can greatly influence our lives are also inherited. Examples of such diseases which can be inherited are sickle cell and diabetes.

5. Abnormal numbers of chromosomes are inherited. At conception, the fertilized egg contains 23 pairs of chromosomes – 46 chromosomes. That is 23 from the male and 23 from the female. In some instance, a child may be born with one chromosome more or less. This is referred to as chromosome abnormality. For example, inheriting 47 instead of 46 chromosomes leads to a condition known as Down's syndrome which causes mental retardation.

What is Nurture (Environments?)

Nurture or environment refers to any influences which an individual comes into contact with after receiving the hereditary pattern through the genes. These influences starts from the womb of the mother (the pre-natal environment).It implies therefore that any factor that affects an individuals' growth and development but which does not pass through the genes, are environmental factors. For example, the mother's diet, use of drugs, accidents, 0etc are all environmental factors that affect development. Environment also includes the effects of learning, training, home, the school, church, peer group, neighborhood, infections, diseases, etc.

Influences of Nurture (Environment) on Development

1).Environment (nature) determines the level to which the limit of developmental potentials set by heredity will be reached. For example, a child who has inherited the potentials to be intelligent may not be able to realize that if he or she becomes mentally retarded because of unprescribed drugs that his or her mother took when she was pregnant. This means that an environmental factor (drugs) has prevented the child from reaching the limit of his or her potential (high intelligence).

2).The first environment of the child (i.e. the mother's womb) has very great influence on the growth and development of the individual. For example, the maternal diseases used of drugs, accidents and many other factors can affect the unborn child in many ways. These can lead to physical and mental abnormalities in the child.

3).After birth, other environmental factors such as malnutrition, diseases and infections and accidents can greatly affect the developing child. This can result in physical and mental impairments.

4).Finally, the type of environments in which the individual is brought up also affects his growth and development. For example, a child who is brought up in a slum area where prostitution and other social vices are rampant may develop such vices. Similarly an unhealthy environment may affect the child's health.

CRITICAL AND SENSITIVE PERIODS INDEVELOPMENT

The Meaning of Critical and Sensitive Periods

Critical and sensitive periods in developments are certain periods in human development that certain influence becomes very critical. The first three months of pregnancy is a critical and sensitive period, in that anything that negatively affects the pregnant woman will have effect on the development child. The critical and sensitive periods also apply to the early years of a child's life. For example, what happens to a profound influence on what he or she will be as an adult.

It is not easy to get the child to change after forming some ideas and concepts during these early years of life. This can be expressed more clearly by an ancient Chinese proverb which says "As the twig is bent so the tree is inclined". The principle therefore implies that early development is critical than later development.

Importance of knowledge of the critical and sensitive periods

1).Knowledge of the critical and sensitive periods in development will make parents careful of the factors that can endanger the smooth growth and development of the unborn child e.g. drugs, alcohol, peer nutrition, accidents, diseases, etc.

2).The knowledge will encourage parents to take steps to avoid things and practices that can harm the unborn child.

3).It will encourage parents and teachers to treat children with love and affection so that they will in turn develop positive values.

4).Furthermore, it will help teachers and parents to become careful about the type of information and knowledge that children get access to either from the home, school or the mass media.

5).A knowledge of the critical and sensitive periods will also lead to a deeper understanding of some of the developmental problems that children may have and put teachers and parents in a better position to give assistance to them.

6).Finally, the knowledge will encourage teachers and parents to see the need to provide children with ample opportunity to develop their potentials through the provision of relevant materials and space.

STAGES OF HUMAN DEVELOPMENT

There are two broad stages of human development. These are pre- natal stage and post- natal stage. The pre- natal stage spans from the time of human conception to the point of delivery, while the post- natal stage begins from the delivery till death.

In between the prenatal and postnatal is the perinatal stage. The perinatal stage begins from the seventh (7th) month of pregnancy to the point of delivery.

DEVELOPMENTAL TRENDS DURING PRE-NATAL PERIOD

The Meaning of Pre-Natal Development

Pre-natal development refers to the growth and development of a fertilized human cell in the womb of the mother before it is born. After the human female cell is fertilized, it normally takes about nine months or 270 days for the child which develops to be born. During this period, the fertilized cell passes through a certain process of pre-natal development.

Stages of Pre-Natal Development

The period of the Ovum/Germinal Stage

This is from the time the cell is fertilized to about 10 days later. It floats freely in the womb and the single cell becomes divided into many smaller parts. During this period, the fertilized cell is called the zygote. The period ends at the time when the zygote becomes implanted to the wall of the mother's womb.

The Period of the Embryo

From the conception to about 46 days later, the different parts of the body (head, trunk, legs, etc) are developing so by the end of his period, the organism takes the appearance of the human being. At this time, care is needed because if one part is damaged, a handicap would occur. Within this time, a connection between the blood stream of the mother and that of the child develops.

The Period of the Foetus

The growth and development which started during the embryo period continues here. The foetus grows in size and occasionally various parts of the body move. Organs like the lungs, the heart, etc begin to function and this situation continues till birth.

THE CONCEPT OF INDIVIDUAL DIFFERENCES

It is known that even though the pattern of development is similar for all children. Each child follows his/her own way and at his/her own rate. Some children experience development in a gradual step-by-step smooth way, while others move in spurts.

All children do not therefore reach the same point of development at all the same age. Even the development patterns of identical twins show the presence of individual differences in development. Hurlock (1973:34), quoting Dobzansky (1973), said ' *Every person is indeed biologically and genetically different from every other.*

In addition, no two people have identical environmental influences. This means that individual differences are caused by both internal and external conditions. As a result, the pattern of development will differ from child to child.

WAYS IN WHICH ONE CHILD MAY DIFFER FROM ANOTHER

- Physical structure – size, height, deformities, etc.
- Intellectual ability – high achievers, average, low achievers, etc.
- Health differences – some children may often fall ill while others are usually healthy body defects such as hearing and sight problems, etc.
- Temperature – children have different inborn emotional tendencies – anger, patience stress, etc
- Sex differences – boys and girls
- Rate of maturation – physical and mental change occur faster in some children and slower in others.
- Interests – some children like sporting activities and some others don't
- Aptitudes, talents, etc.
- Attitude towards many situations.
- Socio-economic background – poor homes, rich homes, etc.

IMPORTANCE OF INDIVIDUAL DIFFERENCES TO THE TEACHER

1).The teacher would realize that it is not useful to try to compare children upon a common yardstick. There is no ideal child and each child has his or her strengths and weaknesses.

2).Classroom instruction should involve enough individual teaching techniques. Vary teaching methods to suit different children, give individual attention.

3).In classroom management tactics, the teacher should also take individual differences into consideration. In seating children and sharing du ties in the classroom, consideration must be given to height, emotions, interest, etc.

4).In using re-inforcement (rewards and praises) in the classroom, each child must be awarded what would re-inforce him or her most.

5).The teacher needs to recognize and appreciate the fact that individual children have their specific problems and need to be offered special help and guidance.

6).It is easier to accept every child as a person who has worth if the teacher knows about individual differences. Acceptance is very vital in teaching children.

7). Quite often grouping is done in the classroom for special activities and knowledge of the individual child makes it possible to do a more effective grouping.

EFFECTS OF SOME MATERNAL DISEASES DURING PREGNANCY ON CHILD DEVELOPMENT

1).Rubella (German measles)

This kind of measles is a childhood disease which also causes serious problems for a foetus especially during the first three months of pregnancy. German measles or rubella, which is a mild disease, tends to be very serious and alarming for pregnant women, particularly at the early stages of pregnancy. This unborn child could become mentally retarded, visually impaired (perhaps blind) as well as hearing impaired.

2).Sexually Transmitted Diseases (STDs)

Sexually transmitted infections are infections of the reproductive tract, which spread from one individual to another primarily through sexual intercourse (vaginal, anal, oral) and every infinite contact. Such diseases include gonorrhea, syphilis and HIV infections. All these sexually transmitted diseases cause mental retardation, visual impairment, hearing impairment and learning disabilities. It is an established fact that HIV damage the Central Nervous System (NCS).

3).Influenza – mental retardation

4).Maternal Anaemia – Visual impairment

PHYSICAL EXERCISES THAT EXPECTANT MOTHERS SHOULD ENGAGE IN

The physical exercises that an expectant mother should engage in to prevent the improper development of the child.

Examples of some physical exercises that expectant mothers should engage in are walking, pounding fufu, weeding, etc. Only prescribed drugs should be taken by pregnant women. An expectant mother should visit anti-natal clinics periodically.

MATERNAL DIET

It is very necessary that the mother takes a diet which is balanced and rich in food nutrients. A diet which is balanced and rich in food nutrients can help the proper growth and development of the child.

Other Preventive Measures against threats to Growth and Development of the Child

➢ Parents should practice personal hygiene
➢ Fathers should show sympathy and tolerance towards expectant mothers.
➢ Expectant mothers should avoid wearing high heeled shoes and tight dresses.
➢ Taboos and other traditional beliefs about food nutrition, etc should be discouraged.
➢ Vaccinate pregnant mothers with RH immunization serum to neutralize blood from potential infections.
➢ Genetic counseling should be given to both parents in terms of sickle cell, etc.

THE EFFECTS OF CHILD REARING PRACTICES ON CHILD AND ADOLESCENT DEVELOPMENT

Child Rearing Practices in Africa

It is generally agreed that child rearing practices and the relationship between parents and child are important aspects of the education of the child. Child rearing practices refer to the various ways, methods and practices through which the child is brought up. Such practices include clear-out roles, obligations, rights, expectations, values that are cherished, and sanctions that can be meter out for non-compliance. For example, children are trained to know the roles that they are expected to p=lay certain tasks that children are expected to perform as a duty, the rights that children can enjoy, what adults expect of a child, the things that are cherished and those that are not, the punishment or sanctions that are meted out to children who disobey.

Some Negative Effects of Child Rearing Practices on Child and Adolescent Development in Africa

1).From about the age of five years, free communication and interruption of adult conversations are actively controlled in the African child. Thus, children are not allowed to participate or interrupt adult conversation. This practice does not augur

well for the development of the child. For example, it may not encourage the inquiring mind or discovery. It may even make the child less informed.

2).Belief system and taboos are a part of the African culture and infused into their child rearing practices. This can negatively affect development and learning. For example, in a situation where the child has been trained to attribute every natural occurrence to the unseen or supernatural forces, the child may initially find it difficult to accept the scientific explanation of things.

3).Because the child is trained to respect and accept adult suggestions without questioning he or she may grow up to become a person who accepts whatever he or she is told without questioning. This can affect the child's development and learning.

4).Over dependence on others due to effects of the extended family system may not be helpful. Children may grow up to be over-reliant on others of their needs.

Some Positive Effects of Child Rearing Practices on Child and Adolescent Development in Africa.

1).The traditional system of apprenticeship in the father or mother's occupation helps in future orientation ort job training of the child. This in itself is important education for children who may not receive formal schooling.

2).The traditional system of child rearing and family life promote strong bonds of loyalty between family members and the child grows into adulthood with a strong feeling at security.

3).Respect for old age and authority which is a child rearing practice in Africa leads to the acceptance and adherence to rules and regulations in the school and in the larger community.

4).Co-operation and mutual help are inculcated from infancy and extended family members are confident that help and support will always be forthcoming from other members of the family whenever this is needed. The child thus develops a healthy and secure personality who is well adjusted both to his environment and within himself.

UNIT TWO

PHYSICAL AND COGNITIVE DEVELOPMENT OF THE CHILD

PHYSICAL DEVELOPMENT

Physical Development refers to the changes in height, weight, bone thickness, muscles, teeth, hair, rain, sense organs (eyes, ears, nose, etc.) of the child as it grows to full maturity. Motor skills such as learning to walk, and to write are all parts of physical development

MOTOR DEVELOPMENT

This refers to the ability of the child to control and coordinate the movements of various parts of the body in performing activities. In motor development, there are two skills that the child develops. These are gross motor skills and fine motor skills. Gross motor skills involve the child's ability to control and make use of the gross (large) muscles located in various parts of the body such as arms and legs to perform various activities such as   running, jumping, throwing, climbing, etc. Fine motor skills involves the ability to control and use the fine (small) muscles such as those of the fingers or toes to perform such activities as writing, knitting, lacing shoes, threading beads, buttoning shirts, etc.

Physical Growth and Changes during Infancy (Birth – 2 years)

The main physical characteristics during infancy include the following:

1).At birth, the average infant weighs about 3kgs and measures about 50cm in length. The bones are soft and flexible because they are made up of cartilage. Have you seen a newly born baby before? We hope so. Now, what is cartilage? A cartilage is a strong flexible substance which surrounds the joints in the body.

2).Generally, boys are taller and heavier at birth than girls. Growth during the first two years of life is more rapid than at any other time in life. For example, by the fourth month, the   baby may have doubled in weight and height.

3).At birth, infants can already see and hear but without as much accuracy as adults. The sense of smell is well developed at birth and the ability to distinguish odours is present. Infants show a preference for sweets, liquids and less sensitivity to plan than older children. All the senses of the infant develop rapidly and reach adult levels by the end of the infancy period.

4).Motor skills such as sitting, crawling, creeping, walking, running and jumping are accomplished by the end of infancy.

The Childhood Stage (ie.2 – 11 years)

The childhood stage begins at approximately the age of two years and extends to the time when the child becomes sexually mature. This stage ends approximately at age eleven for the average girl and twelve for the average boy. Childhood is divided into early, middle and late childhood. Early childhood extends from 2 to6 years; middle childhood from 5-8 years and late childhood extends from 8 to approximately 11 years.

Physical Growth and Change during Childhood

The main physical characteristics during the childhood stage include the following:

1).Growth during early childhood proceeds at a slower rate as compared with that of the infancy period.

2).Head growth during middle childhood is slow, but limb growth is rapid. The face of girls usually has fine features and is less rugged than that of boys. Children at this stage are very active with their limbs and can perform a lot of motor skills. The first permanent teeth develop at about six years, and girls tend to get their second teeth earlier than boys. Children at this stage are very active with their limbs and can perform a lot of motor skills.

3).There is slow and relatively uniform growth during late childhood until the rapid growth that leads to puberty begins. During this time, growth speeds up markedly. Do you know what puberty is? We hope so. To refresh your mind, puberty is the stage in a child's life when he or she starts to change physically from a child to an adult. By the onset of puberty, the child normally has 28 of his or her 32 permanent teeth.

4).In motor development, boys are generally superior to girls in gross motor activities such as running, jumping, climbing and throwing. Generally, children at this stage run and jump and climb with increasing smoothness and variety. They can perform certain activities accurately. For example, balancing on one foot.

PHYSICAL GROWTH AND CHANGES DURING ADOLESCENCE

What is Adolescence?

Adolescence is the period of one's life during which he or she develops from being a child into an adult. In its simplest form, we can say that it is a period of transition from, childhood to adulthood. It starts from approximately eleven years to eighteen years.

Pubescence:

This is a stage in one's life when he or she is changing physically from a child to an adult. From the above explanations of adolescence and pubescence, it is clear that these words can be used in place of each other.

Physical growth and change during the adolescence period

After eleven or twelve years, the child enters the adolescence period when growth again becomes rapid.

1).During this period, the body gets to its maximum height but may not reach its maximum weight.

2).During the early years of adolescence, boys are heavier than girls but girls mature earlier.

3).Adolescents grow hair at different parts of the body.

4).Boys develop deep voices.

5). Girls develop breasts around age eleven and this is followed by expanded hips and rounded body contours.

6).Girls enter puberty earlier than boys.

7).Children find comparism with peers very important. This comparism is used as basis for self-evaluation.

8).The adolescent is concerned about his or her changing body and its attractiveness or otherwise. For example, they may worry about their hair, nose, pimple on cheeks, etc

9).The adolescent child is able to perform activities that require the use of both gross and find muscles with increasing smoothness and accuracy.

Educational Implications of Physical Development

Some of the implications of physical development to us as teachers are as follows:

1).The teacher should take note of individual differences in height, size and weight when assigning children work. This is important because the height, size or weight can make a child perform very well or poorly on a task. For example, a child who is not physically strong should not be assigned strenuous activities to do.

2).As growing children need regular exercises, the home and the school should try to provide ample opportunities to meet this need. Exercise such as chasing, jumping, running, climbing, swimming or skipping with the rope and other activities; promote good physical development and motor coordination. These activities should therefore be deliberately planned for children using the right types of materials. We should, however, exercise caution in order not to over-task pupils.

3).Until about the age of eight years, the eye balls of most children are shallow or flat instead of round. This may result in the inability of the child to focus clearly upon small near-point objects and a tendency towards eye fatigue or irritation. Until their eyes are mature, reading materials should be printed in large letters, and writing papers should have large spaces.

4).Children's physical development should be taken into consideration when activities and school work are given to them.

5).As teachers, we should provide relatively free and flexible situations for children who are just beginning to learn to write. Crayons and soft chalk or thick pencils should be used at the early stage of writing and drawing to help the development of hand and finger muscles. Young children should be provided with large objects such as balls, brightly coloured foam and rubber or fluffy clothing material and toys for games.

6).Script writing (single letters) consisting of single strokes should be taught at the early period of primary school. It usually gives good results with large muscle development.

7).Cursive writing (joined letters) can be introduced at a later when children have gained adequate control of the small muscles of wrist and fingers.

RITES OF PASSAGE MARKING TRANSITION FROM ADOLESCENCE TO ADULTHOOD

What are Rites of Passage?

Africans believe that human beings existed in the underworld before coming into this world. When a child is born back into the world, the child passes through several stages before he or she goes back into the world of the ancestors.

Thus, Africans consider this world as a transitional state where different preparations are needed to prepare the person before entering the world of the ancestors. These rites that prepare a person to be fully fit to enter the ancestral world are called '***Rites of Passage***'. Thus, rites of passage are rites that prepare a person from one stage of life to another. These rites are birth, puberty, marriage and death.

Puberty Rites

These are rites performed to usher an adolescent boy or girl into adulthood in traditional societies. These rites, after their performance, approved the adult status for an individual. Before the rites, the adolescent is considered as a child and cannot take part in decision-making in family matters. Puberty rites is therefore one of the several means by which independent status is conferred on the adolescent and brings him or her out of the total domination of the family. Among the various Ghanaian ethnic groups, there are no rigorous puberty rites for boys as it happens in the case of girls. Though there may be some differences in the details involved; there are some similarities in the performance among various Ghanaian ethnic groups. Some of the general similarities include the following:

1).The rites begin when the girl experiences her first menstruation.

2).There is a period of conferment when the initiate (the girl being initiated) is educated on, care of husband and babies, house-keeping, patience, and a host of other societal moral values.

3).After the conferment comes the out-dooring ceremony. The out-dooring ceremony is usually done by the girl being decorated with ornaments and costly beads, and made to sit in state for some time. During this time, a dance is organized as a form of entertainment. She is later taken through the principal streets of the town to show her maturity to prospective husbands.

Educational Importance of Puberty Rites

a).***Motherliness:*** The nursing of babies, sick people and old people is one of the things that the girls initiate is educated on. Thus, through the initiation, she learns these acts which are vital for any mother-to-be.

b).***Endurance***: Endurance is one of the moral values which puberty rites portray. Among boys, especially in other African countries, during initiation, the boy initiate is supposed to prove his entry into adulthood for showing how manly he is. For example, when he is made to hunt and to kill some wild animals, or perform a task that adults do. Again, when a girl initiate is out-doored, the upper part of her body (including breast) is exposed. The girl has to endure this exposure for sometime, thus inculcating in her a sense of endurance

c***).Obedience***: By not getting pregnant before the rites, the girl has been obedient to her parents. Furthermore, this indicates her honesty, truthfulness and submission to her parents' advice and adherence to the society's norms and vales.

d).***Respect:*** When a girl initiate is out-doored, gifts are presented to her by well-wishers. If a girl is not respectful, she would not be given gifts by anybody. So far a girl to earn these gifts, she should be respectful to both the elderly and the youth. So through this, a sense of respect is deeply inculcated in a girl before she even reaches the puberty age.

e).***Gratitude***: After the rites have been performed for a girl, she is dressed in rich clothes and costly beads and parade through the town and to thank those people who have given her gifts and those who have not given gifts but have attended the ceremony. By this, she learns to be grateful to her benefactors.

DEVELOPMENTAL TASKS OF ADOLESCENCE

Adolescence is probably the most challenging and complicated period of life to describe, study or experience. Between the ages of 11 and 18 years, more changes occur physically, psychologically and socially. These changes present some crisis or tasks which the adolescent seeks to resolve. All adolescents are confronted with developmental tasks such as resolving the crisis of personal identity, and adjusting to their new body, size and shape, adjusting to their awakening sexuality, concern for their body image and self-concept, striving for emotional maturity, and striving for

independence that characterize adulthood. The adolescent efforts to come to grips with these tasks are often touched with confusion.

Personal Identity: Erikson has singled out one critical issue as a major task of the adolescent stage – resolving the crisis of personal identity. Erikson states that, between 12 and 18 years, individuals must decide on what they want to be professionally and what they hope to make of their life. If they succeed, they come up with a strong identity, ready to plan for confusion and unable to make decisions.

Adjusting to New Body Size and Shape: In girls, breast development is an area for concern. In our society, breast development is a symbol of feminity so girls whose breasts are not as developed as those of other girls tend to feel embarrassed and also worried that their breasts will remain small. Similarly, the voices of boys and girls change during puberty and become lower as the larynx enlarges and the length of the vocal cord increases. In boys, this change is pronounced and is referred to as the breaking of voice. Until it actually occurs, boys tend to feel to feel embarrassed and conscious of their high pitched voice. Other noticeable changes are the growth of the hands, feet and legs which may take place not only at exaggerated rates but also at different times. Thus, the adolescent may feel awkward and clumsy, and becomes concerned that his or her body will never catch up to his or her hands and feed.

Adjusting to Awakening Sexuality

In boys, high levels of androgen secretion (a hormone) in puberty is said to increase the sex drive which refers to the basic biological need to achieve sexual stimulation and satisfaction. (Money and Ehrjardt, 1972). Since androgens are secreted in both boys and girls, it is likely that they affect the sex drive in girls as well. (Rutter, 1980). Do you know what androgens are? Well, they are hormones which are secreted into the bloodstream by the pituitary gland.

Concern for Body Image and Self Concept: In a culture such as ours, this places a premium on physical attractiveness and uses beautiful bodies to sell everything (i.e. from clothes and cosmetics to stereos and auto parts), it is no wonder that most adolescents begin spending hours of everyday in front of a mirror tirelessly checking and rechecking their hairs, the pimple on the face, etc. Similarly, adolescents often hold the belief that everyone else in the world is preoccupied with their appearance

and behavior. As a result of this, adolescents may be excessively self-critical or self-admiring.

Striving for Emotional Maturity. Offer (1969) notes that, during early adolescence, quarrels between adolescents and their parents are very common. These quarrels tend to diminish in many cases towards late adolescence. In addition, Rutter (1980) notes that early adolescence is associated with a marked rise in the incidence of depression especially among boys. Do you know that hormones do not cause only physical changes but affect mood and behavior as well? Yes, they do.

Striving for Independence: The onset of puberty affects not only peer relationships but also family functioning. Many studies indicate that pubertal maturation leads to increased emotional distance between youngsters and their parents. Boys as well as girls, and mothers as well as fathers, report less closeness in the parent-child relationship, greater adolescent autonomy and a slight increase in conflict over minor issues of daily living with advancing physical maturity (Papinix & Sebby, 1987, Steinbery, 1987, 1988 a).To make matters worse, adults seem to be unable to decide just when it is that an adolescent becomes an adult.

Aside the aforementioned developmental tasks, Havighust (1973) also identified ten developmental tasks that an adolescent is required to achieve in order to succeed in life. These include the following:

1. Accepting one's physical make-up and acquiring a masculine or feminine sex role.
2. Developing appropriate relations with age-mates of both sexes.
3. Becoming emotionally independent of parents and other adults.
4. Achieving the assurance that one will become economically independent.
5. Deciding on, preparing for and entering a vocation.
6. Developing the cognitive skills and concepts necessary for social competence.
7. Understanding and achieving socially responsible behavior.
8. Preparing for marriage and family.
9. Acquiring values that harmonious with an appropriate scientific world picture.
10. Developing personal identities.

Educational Implications

1. As educators, we are in a strategic position of help to guide the personal growth of the adolescent.

2. Adolescents feel a need to pull away from their own parents, and so other adults can be of special significance. It is therefore our responsibility to develop effective ways to make this influence work. Thus, we need to provide the adolescents with increasing amounts of independence and responsibility. For example, assigning him or her some role in the school.

3. ***The training of peer counselors and educators:*** This is important and because such role-taking involve genuine responsibility in these programmes, adolescents learn to teach, counsel and care for younger classmates. Such responsibility stimulates their individual leadership development.

4. *Provide* guidance and counseling services in schools and colleges for the adolescents.

5. *Organize* clubs and societies where adolescents can channel their energies into useful activities.

6. *Get* adolescents to be involved in sports and games.

COGNITIVE DEVELOPMENT (JEAN PIAGET 1896 -1980)

Cognitive refers to mental processes such as attention, perceiving, observing, remembering, imagining, thinking, and problem-solving, growth of intelligence and language.

Cognitive development refers to the process whereby the child progresses in his cognitive abilities for proper adjustment to and utilization of his or her environment.

Jean Piaget, a renowned psychologist delineated the process of cognitive development into four main stages, namely the sensori motor, pre-operational, concrete operational and formal operational.

STAGE OF INTELLECTUAL DEVELOPMENT

SENSORI-MOTOR STAGE (Birth – 2 Years)

This is the stage where the child basically learns through his sensory organs (eyes, ears, nose, mouth, skin) and through its bodily movement. The child learns through concrete actions, looking, touching, hearing, putting things into the mouth, sucking, grasping, etc. Initially these are involuntary or reflex actions. With time, they become

more coordinated and purposeful as the infant actively explores his environment and learns that specific action will produce specific results. For instance, the child learns that crying will bring the mother and putting the cup in his mouth will make him be provided with water.

The child achieves object permanence; the realization that objects continues to exist even if they cannot be seen. At the later periods of this stage, children begin to represent objects they cannot see with symbols. They can understand cause-effect relationships and begin attempts and represent objects with language.

PRE-OPERATIONAL STAGE (2 – 7 YEARS)

The quality of children's thinking at this stage is transformed from that of the sensory motor period and children's thinking are expanded from the sole use of their senses as their means of understanding the world. The pre-operational child has the capacity to store images, have expanded vocabulary and their understanding of language improves as they play and imitate adult behavior

They develop the ability to represent objects in drawing and in language.

This stage is further divided into two periods: pre-conceptual period (2 -4 years) and the intuitive period (4 -7 years).

The period of pre-conceptual though which falls under the pre-school ages is a period when the child is developing the mental schemes which serves as the foundation for the emergence of later mature cognition.

Children at this stage achieve symbolic functioning. They are able to create a mental image of an object which is not present. For instance, he/she can refer to a doll as 'baby' or a wooden block as 'car' and making steering motion with his bowl.

Children also show egocentrism at this stage. They see the world only from their perspective and are unable to appreciate things from other people's perspective.

They show animalistic tendencies; a situation where they attribute thought and feelings to lifeless objects in an attempt to understand and explain the nature of the environment and objects within it. They feel that the sun and moon and stars can hear, see ad smile (Rain, rain, go away, talking to dolls and being angry with them, etc.).

They also hold the misconception of artificialism. By this, they hold the notion that all environmental phenomena including natural objects and events are created by

humans. When the thunder strikes, they will ask daddy to make the thunder go away.

The period of intuitive thought is a time when the child's thinking is characterized by what he perceives to be right rather than on logical mental operations. They are still egocentric at this period.

Another characteristic of this stage is centering or failure to decentre. They concentrate only on single outstanding characteristics of an object while ignoring its other features which leads to distorted reasoning. They see their father only as a father but cannot understand that he is a son.

They also cannot grasp the concept of conservation, which is the understanding that physical properties do not change when their form or appearance changes.

CONCRETE OPERATIONAL (7 -11 YEARS)

The child at this stage has entered the primary school and show qualitatively different reasoning. They have better vocabulary, think more logically and understand functional relationships better. They come to understand the principles of conservation, reversibility, grouping and cause and effect. They show the capacity to do mental operations such as addition, subtraction, multiplication, division and categorization of numbers, people, events and actions. Instances of conservation can be tested or demonstrated under conservation of volume, conservation of matter or substance, conservation of space and conservation of distance.

Under reversibility, the concrete operational child shows the ability to reverse a process to the point of its origin and to realize that the actual quantity of the material remains unchanged. They can perform activities that bring out the principle that for any operation, there exist an opposite operation that can cancel it. They can understand that objects can have their original conditions reversed after changes have been made in their physical shapes.

Evidence of the child's growing intelligence is also seen in his understanding of the concept of seriation. The child can arrange object in terms of some attributes such as size, weight, colour, shade, length, serialize or classify objects in a hierarchical order.

The thinking of children at this stage is termed as being concrete because their thinking is still grounded to concrete concepts and experience. It is always related to the concrete real world and shows transductive reasoning.

Children can now decenter. They can see things now from other people's point of view. She can now understand that her mother is tired and should not be disturbed in her sleep. They can now show mutual respect for and cooperation with other people.

FORMAL OPERATIONS (11 YEARS +)

This is the adolescent stage and the child is able to think abstractly, develop logical, arguments, participate in debates and generally think about their own thinking (metacognition) and about other peoples' thoughts.

The teenager understands that ideas can be compared and classified, just as objects can be compared and classified. They apply reasoning to situations they have not personally encountered and they can think about future possibilities.

They can search systematically for answers to problems. They can apply logic to ideas and propositions and make inductive and deductive reasoning in various situations. They can thus follow principles of logic considering the 'form' of an argument, disregarding its 'content'. This explains the use of the term 'formal operations'.

They are able to think in relation to time. They can reflect on the past, think about the present and predict how the future will be like, based on the present.

At this stage, the child's comprehension and use of language improve considerably. His vocabulary expands and represents a prepared system of ideas and classification relationships. He develops a flexible intellectual capacity which allows him to adapt to whatever tasks he is challenged by.

EDUCATIONAL IMPLICATION OF PIAGET'S COGNITIVE DEVELOPMENT

1. The child at this stage learns basically through perception which involves the use of the senses. The teacher should therefore engage the child in perceptual (weight), manual (hand) and verbal discriminating activities. The child should be made to handle different objects so that he can generalize and discriminate (tell differences and similarities). He should be encouraged to express himself orally so that his verbal skills will be sharpened.

2. According to Piaget, the environment plays a critical role in the child's intellectual development. The child should therefore be engaged in expository or investigatory behavior to broaden his knowledge.

3. Parents and teachers should not ignore the status of the child learning process but rather they should take the child's level of development previous experience into consideration in designing tasks.

4. The pre-school and lower primary child must be provided with a rich learning environment to stimulate and promote learning.

5. The thinking of the child at this stage is based on concrete ideas. Though, the child can think logically, he still cannot comprehend abstract principles. The teacher should therefore use concrete objects and actively involve the child in the teaching and learning process.

6. The teacher should provide a rich classroom environment with a lot of stimulating activities such as sorting, counting, manipulating and construction of objects to facilitate the child's understanding of conservation, reversibility and seriaion while field trips, role play/dramatization and other classroom activities stress the principle of learning by doing.

7. Children grow in their ability and willingness to cooperate at this stage. They also show appreciation of value of rules and regulations. The teacher should therefore design activities that reinforce these values in children.

8. The teacher should provide opportunities for the child to discover things for himself and to monitor his own learning. This promotes independence and creativity.

9. The teacher must acknowledge the limitations of this stage and not saddle the child with tasks that are far beyond their intellectual capabilities.

10. The school curriculum should be flexible to adapt the programme of the school to the unique needs of the adolescents.

11. Teaching and learning resources are vital for the promotion of intellectual growth. Materials that would enable the child to predict, compare, contrast, analyze and evaluate should be provided.

12. Piaget's theory emphasizes self-learning. The teaching should therefore encourage discovery learning. He should promote questioning and develop the adolescent's ability to do logical thinking and follow systematics procedures and novel means to solve problems.

13. It is important that the teacher regulates the level of difficulty and order of presentation of materials and learning experiences to students. His teaching should proceed from known to unknown, simple to complex, concrete to abstract. His teaching should suit the mental age of learners.

14. The teacher is expected to organize activities which stimulate thinking and expression such as debates, discussion, essay competitions, quizzes, etc.

In general, Piaget's theory suggests that:

- A child's level of development should be taken into consideration when deciding on what and how to teach.
- A rich learning environment equipped with suitable materials should be provided.
- The teacher must consider individual differences and make room for them in his teaching.
- Teaching should be activity centred and should encourage self-exploration and discovery.
- Teachers and parents should use probing questions when dealing with children.
- Encourage vocabulary and develop their linguistic skills.

PSYCHOSOCIAL DEVELOPMENT BY ERIK ERIKSON

Definition:

Psychosocial is a two-word term and these are psychology and social. It is defined to mean the science that studies the human being in the society. That is, how the individual's life is influenced socially, emotionally, temperamentally and physically by the immediate society and how he or she interacts with the society for a healthy living.

In Erik Erikson theory, the individual's psychological development is assumed to occur through resolution of basic psychological conflicts, which forms the foundation for later ones. To Erikson, psychological development took place through the resolution of basic psychosocial conflicts, with each stage building on the successful resolution of conflicts in previous stages. The unsuccessful resolution of earlier stages would leave unsettled conflicts remaining to interfere with current psychosocial development. Erikson delineated eight stages of psychosocial development over the life span with each stage focusing on one issue or crisis that is especially important at that particular time of life. How the person resolved these issues is reflected in his or her personality and social relationships. If an issue is resolved positively, Erikson claimed this will be reflected in positive characteristics such as trust, autonomy, initiative and industry. If the crisis is not resolved positively, the person will be troubled and cope less effectively with subsequent crisis.

STAGE ONE: TRUST VRS MISTRUST (BIRTH – 18 MONTHS)

Infants develop a basic trust or mistrust of others through their relationships with their parents. If their parents respond to their needs, the develop social trust. The degree of trust which the infant develops will depend upon the quality of the parent-child relationship. If the child fails to develop basic trust at this stage, a distrust of other people may lead to unhappiness and considerable personality difficulties in later life. Parents are expected to help the child to form a sense of trust by feeding and caring for the child as well as working to build an affectionate and warm relationship. The child must develop autonomy for healthy ego and personality development to continue.

The goal of infancy is to develop a basic trust in the world. Erikson defined basic trust is "an essential trustfulness of others as well as a fundamental sense of one's own trustworthiness". The mother or maternal figure is usually the first important person in the child's world. She is the one who must satisfy the infant's need for good and affection. If the mother or the caregiver is inconsistent or rejecting, she becomes a source of frustration for the infant rather than a source of pleasure. This creates in the infant a sense of mistrust for his/her world that may persist throughout childhood and into adulthood. The teacher or parent must understands this stage and be a figure the child can trust and have confidence in so as to come for counseling and to overcome certain problems.

STAGE TWO: AUTONOMY VRS SHAME AND DOUBT (18 MONTHS – 3 YEARS)

By age two most babies can walk and use language to communicate. They no longer want to be totally dependent and strive to do little things for themselves and at times this brings a clash between parents and the child.

Erickson cautions parents against strict toilet training, since he believes this leads to unfavorable problems which makes such a child an over compulsive adult.

Parents who are flexible and permit their children to do things for themselves and provide guidance, help them to establish a sense of autonomy. Parents who are strict with children make them powerless and incompetent and this can lead to shame and doubt of one's own abilities.

During this stage, children start to develop autonomy and confidence in their abilities when they are taught how to master tasks or do things for themselves. They learn to exercise will, to make choices, and to control themselves. If the child is made to feel that independent effort are wrong, by their parents' criticisms, then shame and doubt develop instead of autonomy. The children become uncertain and doubt that they can do things by themselves.

STAGE THREE: INITIATIVE VRS GUILT (3 – 6 YEARS)

Children at this stage learn to initiate activities and enjoy their accomplishments acquiring direction and purpose. They no longer rely on others to provide tasks for them and ask for help only when they need it. If they receive encouragement and praises from their parents, they develop positive feelings and guilt will be avoided. They develop an increasing sense of personal responsibility and initiative. If parents respond by discouraging children's initiative, criticizing it or ignoring the children when they ask for help they develop a sense of guilt about performing tasks and feel guilt for their attempts at independence.

Also the motor and language skills continue to mature and so become aggressive and explore both their social and physical environment. At this stage parents who permit them to run, jump and play and throw can encourage their initiative. This helps the child to know the kind of person he would become during adulthood.

On the other hand, parents who punish children for attempting to be initiative make them feel guilty about their natural endowment. At this stage, even young creative abilities are exhibited so teachers should capitalize on this and give the needed motivation and encouragement.

STAGE FOUR: INDUSTRY VRS INFERIORITY (6 – 12 YEARS)

The child at this stage is in school and this brings about a huge expansion in the child's social world. The influence of parents decrease and that of teacher and peers increases. Children now want to make things on their own; success brings a sense of industry, a good feeling about oneself and abilities. Failure on the other hand creates a negative self-image, a sense of inadequacy that may hinder future learning.

Teachers and parents should understand this stage of the child's development and provide all materials that would enhance learning. Inferiority complex should be killed at this stage by making children explore their potentials and capabilities.

STAGE FIVE: IDENTITY VRS ROLE CONFUSION (12 – 18 YEARS)

The child is now in the adolescent stage and now depends heavily on peers for answers to some pressing questions which parents feel reluctant to answer.

Erikson believed that during adolescence, the child's rapidly changing physiology, coupled with pressure to make decisions about education and career, creates the need to question and redefine the psychosocial identity established during earlier stages. This is a critical stage in the child's life since peer influence is strong. Waywardness, rebellion, etc. are prevalent and this is the time parents and teachers should reason with the child, accept constructive suggestions, make them feel wanted and accepted to grow up to be responsible adults.

STAGE SIX: INTIMACY VRS ISOLATION (18 – 35 YEARS)

Individuals at this stage seek stable interpersonal relationship with a spouse, friend or colleague or through marriage. If individuals are able to share with others and care about others, and if others respond similarly, the individuals achieve the benefits of intimate relationships. They become able to commit themselves to another person and to develop intimate and trusting relationships with others.

Conversely, if individuals are unable to care or share or are afraid of becoming too close to others of if the others in their life are unable to establish intimate relationships, individuals become isolated from close human contact. They feel they have no one in the world but themselves and they avoid relationships as threatening and painful.

Once young people understand who they are and where they are going, it is an indicator that they are prepared to share their life with another person. The young adult is now prepared or ready to form a new relationship of trust and intimacy with another individual; it could be someone from the opposite sex, same sex, etc. This relationship should enhance the identify of both partners without hindering the growth of the other. The young adult who does not seek such identity, or choose life, which is full of failure, ay retreat into isolation. It is then the duty of teachers and parents to help young adult through sex education to understand the implications of such relationship, and personal hygiene. The adult should also understand this stage so as to avoid conflict that would make the young adults more confused.

STAGE SEVEN: GENERATIVITY VRS STAGNATION (35 – 50 YEARS)

According to Erikson, generativity means expanding one's love and concerns beyond one's immediate group to include society and future generations.

Generativity refers to one's effort to be creatively productive and useful to other people. Stagnation refers to becoming pre-occupied with one's own material and physical well-being and having no concern for society or the next generation.

STAGE EIGHT: INTEGRITY VRS DESPAIR (LATE ADULTHOOD-ABOVE 50 YEARS)

This is the final stage and people look back over their lifetime and resolve their final identity crises. Acceptance of accomplishment, failures and ultimate limitations brings with it a sense of integrity and a realization that one's life has been one's own responsibility. This means that every individual is responsible for what comes in later years. You can either make or mar your life.

Despair can occur in those who regret the way they have led their life and how it had turned out. The psychosocial theory stresses the roe of the environment in causing the crises at the various stages and determining how they will be resolved. Constant interaction with people and the society as a whole is the main focus of the theory. The first two stages stress on the child's interaction with parents and other family members and the role of the school is found in the third and four stages.

EDUCATIONAL IMPORTANCE OF PSYCHOSOCIAL THEORY OF DEVELOPMENT

1. The theory emphasis the use of rewards such as praise, grades and gifts among others which is an indication that the teacher is interested in pupils' achievements. It helps in making pupils to take initiative and also becoming autonomous.

2. To avoid the occurrence of inferiority and guilt in pupils, the tasks that are given to them should fall within this capability.

3. The teacher should encourage group work among pupils because it will not only promote cooperative learning but also leadership skills. It also develops tolerance and respect among pupils.

4. Teachers should encourage the use of discovery instructional method. This will encourage pupils participating in the learning process and thus provide them as an opportunity to be creative and industrious.

MEANING AND ACQUISITION OF LANGUAGE

MEANING OF LANGUAGE

 Man has gained superiority over all other animals on earth. This is simply because man has been able to develop and use a detailed manner of communication through language. Language is an accepted system by which man expresses his ideas and conveys information to others. It takes the form of speech in which voice, written words and signs or gestures which have meaning are used. It is therefore an established way by which a specific message is always conveyed. Language includes sound, drum language, gestures and words used that are combined in different and complex ways to produce specific meaning.

LANGUAGE ACQUISITION THEORIES

What are the theories behind Language Acquisition? These are what we are going to explain.

A: REINFORCEMENT THEORY

This theory was formulated by B.F. Skinner. Skinner is highly associated with issues on Language Development. According to Skinner, speech is acquired by imitation. He goes further to say that, speech acquisition involves the use of a system of reinforcement. According to him, words or sounds that are rewarded or positively reinforced have the tendency to be used by the child very often. Additionally, parents

reinforce sounds of words made by the child in the environment. The repetition of the sounds and words enable the child to have the encouragement to pick more words and sounds which will develop his or her language.

B: SOCIAL LEARNING THEORY:

This theory was propounded by Albert Bundura. According to him, a child learns language or acquires speech through observation and imitation of adult language. To him, no one repeats anything to the child. There is no reinforcement. The child learns language from the home or the environment.

C: INNATE MECHANISM THEORY:

This is a theory propounded by Noam Chomsky. He believes that there is a biological explanation for language development. Chomsky says the child has an innate or in-born language structure for acquiring speech. He calls this system Language Acquisition Device (LAD). As the child hears speech in the environment, the LAD makes it possible for selective processing of the linguistic data (words and sounds) he or she hears. From this processing, the child discovers and formulates grammatical rules which he or she uses to create his or her language.

STAGES OF LANGUAGE DEVELOPMENT

The stages of Language Development are:

1. PRE-LINGUISTIC

Linguistic means language or speech communication. The word 'Pre' means 'before'. Sound is the first form of communication used by the child. In the child's early stage, before one year, his or her communication network is through sound making. This means that the child is unable to use words for communication, but rather concentrates on sounds as well as signs and gestures.

FORMS OF PRE-LINGUISTICS

The child can use other media as forms of communication. These include crying, babbling and gestures.

A: CRYING: When a child is in a state of discomfort of having a basic psychological need unsatisfied, he or she cries. Parents then quickly attend to the child. Would you say there has been any form of communication? Crying is a sound and the first form of communication after birth. It is a vocal noise made by insect. This happens at the early stages which the child may cry on purpose. When a child is hungry, thirsty, ill, needs affection and love, or if it soils itself, it tends to cry.

B: BABBLING/COOING: Babbling or cooing is the child's first use of sounds which contain one syllable such as 'da' or 'ta'. Initially, the sound the child makes involving the mono-syllable is sometimes for pleasure. Parents, upon the child's sounds attend to him or her. As attention is continually given the child it develops language through reinforcement. Babbling may be a play activity for the child.

C: GESTURES: Gestures refer to the movement of the hands or head to express some meanings which are communicative. The kicking, stretching and grasping movements of the young infant may have no meaning but a simply reaction to the need for activity.

2. THE HOLOPHRASTICS STAGE OF LANGUAGE DEVELOPMENT

These are single words that most children speak by the end of the first year. The words spoken by the child convey complex ideas. Some of the single words that the child speaks in its daily life of the language are, "Mama", "Dada", "Car", etc.

3. TELEGRAPHIC STAGE:

 The third stage of language development is marked by the appearance of the child's first sentences. This occurs at about 18 months after birth in most cases, such sentences consists of two words. For example 'Mummy sleep', 'Daddy eat', 'Mama drink', etc. At this stage of the child's language development, it is able to make two words speeches. The fact that these early sentences usually contain only nouns, verbs and adjectives, gives speech at this stage a telegraphic quality.

4**. RULE ACQUISITION STAGE**: The last stage of language development is the stage of rule acquisition. This begins at the age of 2 ½ years. The child uses inflections, plurals, pronouns, articles, preposition, etc. Until the sixth year, the speech of most children is characterized by omissions and incorrect expressions. But the rate of acquisition of both vocabulary and expressions is very rapid. This is the rule acquisition stage of language development.

THE IMPORTANCE OF LANGUAGE

Importance of Language include:

1. Identification of Human beings from other animals. Through language, man has been described as a 'Homo Sapien' that is to say a Wiseman. Man has gained superiority over all other animals on earth and has been able to develop and use a detailed manner of communication in language. With language, man is able to think

and or reason is compared to other animals. This therefore is a distinguished feature of language between man and other animals.

2. Language promotes trade and commerce. This is the act or means by which goods and services are transacted within and outside the country. The act of buying and selling as well as rendering services is due to the availability of language that makes interaction and exchange possible the existence of language enables one to learn the language of the other which brings understanding and for services to be imported from one country to the other.

3. Knowledge and experiences are also transmitted through language and it becomes possible for later generations of man to improve upon such knowledge and experience.

4. Language promotes communication and better understanding. Through language information or messages can be sent from one place to another and therefore becomes useful in understanding what other say. This communication can either be a written message or transmitted orally.

5. Entertainment and leisure become enjoyable through language. These manifest through storytelling, rhymes recitals. Telling of proverbs using the talking drum, drumming and dancing are all essential elements of language that create entertainment and pleasure enjoyed by man through language.

6. Record keeping of information. Language enables ideas to be documented and preserved for several years as a safe keeping and for the survival of the culture. It becomes necessary that some aspects of our culture are written in books, magazines, etc. and preserved for future generation.

FACTORS INFLUENCING LANGUAGE DEVELOPMENT

There are a number of factors that influence the development of language. They are as follows:

- ➢ Maturation and Readiness
- ➢ Level of Intelligence
- ➢ Socio-Economic Factors
- ➢ Home Background
- ➢ Exposure to two or more Language Health

1).MATURATION AND READINESS:

Maturation is one of the important factors that influence language development. Maturation serves to affect language acquisition because initial physical characteristics such as cleft palate and large tongue in relation to the mouth coupled with few or no teeth may be contributing influences to babbling. The greater use of the anterior of the tongue and an increase in the muscle control that permits less reliance on the throat for articulation serve to fine language maturity.

As the child grows, however, these physical parts mature and assume their correct proportional size and thus pave the way forte child to be able to speak. Readiness depends on the maturation of the relevant organs and functions of the body, namely the vocal organs and the brain. The child's language is affected when the organs are not matured.

2. LEVEL OF INTELLIGENCE

Generally, children with high intelligence show superiority in speech acquisition than those with lower intelligence. The child with higher intelligence understands better, as he or she is able to see relationships more easily, and draws out various rules governing the production of correct grammar better as compared with the child with a lower level of intelligence. As a rule, middle subnormal children learn to talk much later than children of normal or superior intelligence. A mentally sharp person articulates and speaks well while a feeble-minded child is usually retarded in language acquisition and use.

3. SOCIO-ECONOMIC FACTORS

Marked differences in language acquisition have been found in comparing children from different socio-economic backgrounds. Generally, children from families of professional and educationally higher social class membership are linguistically more advanced than their counterparts of lower socio-economic homes. Lower class children have poorer articulation than middle-class children. The positive explanations of these occurrences include differences in verbal stimulation, emphasis on verbal communication, and greater parental pressures and expectations for competence in academic performance.

4. HOME BACKGROUND

The home that the child lives in may also influence his or her language development. It is necessary to accept that children who come from homes where many books, pictures, objects and cultural interest exist stand a better chance of being spoken to about these things. Parents may read to them, tell stories, and explain pictures to them. All these activities tend to expand the child's vocabulary and speech. On the other hand, children born in homes where such a stimulating environment does not exist may not develop such a wide vocabulary.

5. EXPOSURE TO TWO OR MORE LANGUAGES (BILINGUALISM):

When children are exposed to two or more languages at the same time, they do not only learn to associate meanings to sounds, but also to distinguish between the sounds in the languages. This may take the language development of such children very slow. However, after they have mastered the fundamental mechanics of the two languages, they may have as much ability to develop as one language. (Durojaig, 1976).

6. HEALTH

A child who is often ill from the early stages of infancy may not have the opportunity to create sounds for pleasure and to imitate adult sounds for speech development. Such a child may be constantly bedridden and lack enthusiasm to make vocal sounds. Ill-health may also thwart the normal development of the speech organs leading to a delay in speech development. On the other hand, a child who as good health interacts more with adults and would learn language faster.

COMMUNICATION DISORDER

Communication Disorder refers to a situation where there is deviation from both Speech and Language. It is therefore a situation where communication becomes conspicuous, unintelligible and unpleasant.

TYPES OF COMMUNICATION DISORDERS

The two types of communication disorders are:

- ➢ Speech disorder
- ➢ Language disorder

What is speech disorder? According to Van Riper and Emerick (1984), speech is abnormal when it deviates so far from the speech of other people, that it calls for attention to itself, interferes with communication or causes the speaker or their listener to be distressed.

FORMS OF SPEECH DISORDERS

What form does speech disorders take? Let's look at the forms. These are:

Articulation or Phonological Disorders

These are deviations from the normal production of speech, sounds, words or phonemes. These deviations include:

(i).Substitution e.g. 'Web' for 'Red', 'Fry' for 'Fly', 'Blown' for 'Brown'.

(ii).Omissions e.g. 'tant' instead of 'stand', etc.

(iii).Adding a sound to a word e.g. 'bulu' instead of 'blue'.

Voice Disorders: These have something to do with quality, loudness and pitch.

Quality – when one habitually speaks as if one is out of breath, speaking with harsh voice and also nasality (speaking through the nose).

Loudness – when one habitually speaks too loudly or too softly.

Pitch – when one habitually speaks at a pitch that is too high or too low for a person's age.

Disorders of Fluency – These are disturbances that affect and prevent the normal flow of speech e.g. an abnormal long pause between words, excessive repetition of sounds,   syllables or words, e.g. stammering, stuttering, etc.

What is Language Disorder?

According to Bloom and Lahey (1978), language is ideas about word represented through conventional systems of arbitrary signals and communication. A breakdown in any of these conventional channels results in disorders. According to Mykleburst (1971), language disorders involve the central nervous system's dysfunction that impedes the comprehension and use of words.

FORMS OF LANGUAGE DISORDERS

The two forms of language disorders are:

  ➢ Expressive disorders
  ➢ Receptive disorders

Expressive Disorder – This deals with giving out information and having difficulty in expressing oneself.

Receptive disorder – This concerns taking in information and having difficulty receiving information.

REASONS FOR LANGUAGE RETARDATION

Some of the reasons for language retardation include:

- ➢ Bilingualism and its effects on language development
- ➢ Chromosomal abnormality, especially down syndromes
- ➢ Hearing impaired children
- ➢ Severe possession of cleft palate
- ➢ Diseases such as measles, mumps, meningitis, etc
- ➢ Malformation of speech organs

1. BILINGUALISM AND ITS EFFECTS ON LANGUAGE

This is a situation where the child is constantly and regularly exposed to two or more languages by his or her parents at a tie of acquiring language. The situation could also be in an environment where people speak different languages to the child at the critical period of the child's development. The child picks the languages been spoken an misses them up in his or her speech making it difficult for people to better understand what is communicated. This creates a disorder in the language of the child because of the initial influence at that critical period.

2. CHROMOSOMAL ABNORMALITY

This condition has something to do with the genes. During pregnancy, when there is fusion of the gamates, the female and male contribute 23 chromosomes each from the ovum and the sperm. This results into the formation of a normal child. However, due to genetic constituents and other factors during pregnancy or pre-natal development, the expected 46 chromosomes may increase to 47. This increase causes abnormality in the child and his or her physical development and features are affected. The child may therefore develop characteristics such as having a very big head, big mouth, protruding tongue, and teeth, short and stubby hands, etc. The voice and fluency of speech may be affected creating voice and fluency disorders which may lead to stuttering or stammering. An example is the mongoloid or dawn syndrome.

3. HEARING IMPAIRMENT

This is a damage or weakness or loss of some organs of the ear either during the pre-natal, peri-natal or post-natal development stage of the child. The causes of hearing impaired may be as a result of genetic or environmental factors. The genetic causes deal with defects in the chromosomes and genes. The environment includes infections, trauma, toxin and noise pollution from heavy duty machinery. The child may also be affected as a result of complications in the middle ear. For example, e.g. The accumulation of wax in the auditory channel may lead to a child having hearing problems. A further example is any damage caused to the cochleae and auditory nerves in the inner ear. The organs of the ear are all connected together to support the speech and hearing level of the child. As these organs become genetically or environmentally affected, the child's hearing will automatically be affected resulting into improper of abnormal speech of the child. The 'ENT' which is ear, nose and throat are all affected causing language retardation.

4. POSSESSION OF SEVERE CLEFT PALATE:

This situation is as a result of an opening in the upper part of the child's mouth which makes it impossible for proper speech. Again, improper (increase) teeth formation, absence of teeth development or missing upper teeth or the incisors, may also affect the child's speech. This resulting into a language disorder.

5. DISEASES

Diseases can also contribute to a child's language retardation. Some of the known diseases are (German measles, mumps, meningitis, etc.). During pregnancy, when the mother contracts some of these diseases, it may affect the internal organs of the foetus causing damage to the brain and some of the hearing organs that support language development.

6. MALFORMATION OF SPEECH ORGANS

The malformation of certain speech organs contribute to the child's language retardation. In certain children, the speech organs do not form properly. This may be due to malnutrition and the intake of drugs. When there is malformation, certain organs are seriously affected especially the hearing organs, visual organs, as well as the vocal organs or the throat. The improper development of these organs may cause language or speech retardation.

TEACHING FOR EFFECTIVE LANGUAGE DEVELOPMENT

As an experienced teacher in the classroom, if you want your English Language lessons to be interesting, enjoyable and for good use, you may either use stories, picture description, rhyme recitals, speaking good language to pupils, involving pupils in conversation and allowing them to write what they say. This takes us to the topic: "Teaching for effective language development". To ensure effective teaching of language the teacher can employ the following:

1).Oral activities: This is one of the way by which a teacher can make pupils acquire language skills and good language. This method could be achieved by involving the pupils in story-telling. This method could be achieved by involving the pupils in story-telling, picture descriptions, telling proverbs, poetry recital and acting children's plays, etc. These activities expose children to a lot of vocabulary and at the same time offer them the opportunity to practice and solidify the vocabulary they have.

2).*The use of Language Games*: These are games that help the child to use and recognize sounds, words, phrases and sentences that have been learnt. They stimulate children to use speech. Examples of these games include the treasure hunt, dominoes and call a word.

3. As a teacher, you need to provide good speech models for children to emulate or imitate. You should not only speak often to children but must always speak clearly and use vocabulary which is within the ability of children. Encourage them to repeat important statements you have.

4. Another way of encouraging speech development in children is by providing them with the opportunity to listen to good speech from the tape-recorder or radio sets and to imitate these. Where the possibility exists, children could be made to listen to their own recorded conversations. To improve children's interests in speech development, teachers are advised to make good use of the language lesson provide by the Ghana Broadcasting Corporation over the radio for schools.

5. Regular reading is important for language development. The development of reading skills often begins with the introduction of children to pre-reading activities. These include eye-movements, identification of symbols and words. The mastering of these activities promotes children's progress in reading.

6. Constantly make use of reinforcement in the form of rewards and praises to encourage effort in good speech competition. Also help children to develop interest in language games.

7. The teaching of vocabulary should always be followed by children's using them to form sentences. Sentence construction should be a regular exercise and this should be done both orally and in written for. Flash cards should be useful here as words learnt from such cards could be used in the formation of sentences.

8. Use conversation lessons to promote good speech development. However, care must be taken in the selection of topics for such convention. Topics chosen should be interesting suitable and relevant to children's level and they should be properly structured and controlled. They could even be organized in the form of children's reproduction of simple stories.

THE ROLE OF THE HOME IN THE LANGUAGE DEVELOPMENT OF THE CHILD

The home provides a wide range of knowledge through activities that promote or develop the child's language. These include:

1. ***Story telling***: Parents engage their children in story telling during the evenings. As children participate in this activity, the incorporate a lot of words which are used and to help them develop their language.

2. ***Daily conversations***: Parents at home are expected to interact with their children. In so doing, they use proverbs and idioms to express their ideas. As the child is involved in everyday conversations or talks with others, it picks the sounds, words, and sentences and registers them in his or her schema. When the child is matured and ready for the language, he or she accurately speaks it.

3. ***Singing of songs***: The child is exposed to different types of activities such as coddling, lullabying, and maiden singing. These enable the child to pick words and sentences and then put them into practice.

4. The kind of education children receive at home also helps the child to develop language. At home, parents may engage the child through reading and rhymes. They expose the child to playing and learning materials such as toys, pictures, etc, as they take the child through some activities. This, in effect, envelops the child's language as it is exposed to a lot of information that may be assimilated into his schema.

ROLE OF THE MASS MEDIA IN THE CHILD'S LANGUAGE DEVELOPMENT

The mass media plays an important role in the child's language development. These include the following:

1).The television and the radio expose children to radio programme of 'Everyday English and also 'French for Beginners'. The child is therefore encouraged by his or her parents to listen and to incorporate into their grammar what is expected of them to know through listening.

2).Certain articles are written in newspapers containing issues on social, economic, political and religion matters. Information of this kind is read and the child makes words, expressions and meanings from them which help in developing their language. An example is the Junior Daily Graphic that has been introduced recently for children.

3). The mass media enables the child to acquire and develop language skills especially through the use of words or verbs, adverbs, adjectives, figurative speeches, pronunciations etc. that enables him or her to form and to express ideas. These activities are derived from video and cinema and other forms of mass media.

4. Promotes self-education through publications, programmes on the radio, T.V. etc. As the child does his or her own reading, he or she builds interest and confidence, enabling himself or herself to assimilate information that he or she has great delight in this helps to expand his or her horizon.

PEER GROUP CONTRIBUTION TO LANGUAGE DEVELOPMENT

Let's look at the role peers play in language.

1).**Through conversation among themselves**: They learn different sounds, words, expressions, as well as sentence construction. Some ideas are mastered and as they move about these learnt words or sounds become the order of the day. Such ideas enable them develop language.

2).Through their studies or learning: They play with learning materials such as toys, pictures, drawings, scribbling, etc and educationally, these activities helps them to develop their knowledge as they share together and also acquire the necessary language skills. This increases their vocabulary and thereby makes them exposed to sentence formation.

3).Entertainment and Leisure: Children enjoy at recreational centres where they play different kinds of games or get involved with varied activities. Getting involved in activities, children are exposed to interactions and therefore use a lot of words to form their own sentences. In such instances, their language is developed.

MORAL DEVELOPMENT

The term 'Moral' is derived from a Latin words "mores" which implies custom, manner and folk ways. Every society has special ways of doing things referred to as its culture. Each member of the society is expected to behave in accordance with the culture of the society.

Moral behavior therefore means any behavior which is in conformity with the moral code of a given social group. It is usually controlled by moral precepts. The precepts are behavior in the culture which has been observed over the years by the embers, and which determine their accepted behavior patterns.

IMMORAL BEHAVIOUR

These are behaviours that do not conform to the expectations of the social group. They are not due to ignorance of what the society expects from the individual but rather due to disapproval of the social standards. Such people do not feel obliged to conform to social expectation.

MORALITY

Morality refers to forms of behavior that are in conformity with what are generally acceptable to a group or society as good. Remember that moral behavior is a complex mixture of cognition (thinking about what is actual), and behavior (what is actually done).

IMMORALITY

There are a lot of people in our society who do not do what is acceptable in the society. Immorality refers to behavior that is not acceptable to a group or the society.

TYPES OF MORALITY

There are two main types of morality. These are: idealist morality and Pragmatic morality. Let us try to explain each of them and give examples.

THE IDEALIST MORALITY

The Idealist perception of morality is that moral rules are fundamental, valid in themselves and worthy to be obeyed for their own sake and not because of their intended purpose they serve. For instance:

- Idealists believe that it is not good to have pre-marital sex
- They also believe that it is not good to steal or cheat
- They also believe that it is good to work hard.

THE PRAGMATIC MORALITY

The pragmatists are of the view that morality implies producing what is considered good and avoiding what is considered bad. To them, good rules should be kept and bad ones rejected. For instance:

- It may be right to carry out an abortion to save a pregnant woman's life.
- It may be right to kill in an attempt to defend oneself or save the life of another.

AGENTS OF MORAL DEVELOPMENT

Every society or group of people cherishes members with high standards of morality. Individuals and organizations therefore, put in a lot of efforts to ensure that their children develop quality moral values. We believe there are several individuals and groups who have influenced out moral life. The agents of moral development include:

The home/family, Peer group, The school, Mass media, Religious organizations.

THE HOME/FAMILY

Immediately after the birth of every child, the home is the first environment he/she gets into contact with. As children develop, they observe and imitate every aspect of the life of their parents including their moral judgements. The child therefore adopts the moral judgments expressed by the parents and significant others in the home. For instance, as the child observes people being rewarded and loved by everyone for their behavior the child also imitates in order to win such praises and love. The home/family provides moral training to the child through the following:

1. Educating them to obey and respect authority
2. Serving as role models by putting up desirable and acceptable behaviours such as kindness, honesty, loyalty, faithfulness, etc.
3. Encouraging children to use disciplined and polite language such as please, thank you, sorry, etc.
4. Teaching them basic rules of right and wrong which will inculcate quality moral standard like love and truthfulness in them.
5. Teaching them the "dos" and "don'ts" of society. For instance, work hard, respect, avoiding the habit of stealing, etc.
6. Teaching them decent dressing, what to wear, when to wear and how to wear it, etc.
7. Teaching them both personal and environmental hygiene.

THE PEER GROUP

Do you have friends who are of the same age as yours that you play and study with? What are some of the things you do together? We guess you are smiling, interesting. Peer groups share a lot of experience through their discussions. They influence the moral training of the child by:

1. Providing emotional understanding and other moral values to their colleagues.
2. Learning and helping each other to respect and obey peer/group regulations and norms.
3. Providing security and training opportunities for various interpersonal skills necessary for quality adult life.
4. Teaching high moral standards and ensuring that members exhibit such moral standards.
5. Establishing and working cooperatively towards the achievement of a common goal. For instance, setting an academic target and using cooperative learning strategy to achieve it.

THE SCHOOL

The school does not only exist to transmit academic knowledge and skills to people but also prepares the individual in other aspects of human development. Moral training is one of the key development areas which the school prepares the child morally by:

1. Providing several services including Guidance and Counseling Service which helps in quality moral preparation.
2. Teaching subjects like Religious and Moral Education, Social Studies, Culture, etc which contain essential moral elements.
3. Providing leadership training and problem solving skills. This can be done through the prefectorial system and the use of disciplinary committees.
4. Proper supervision of examinations, quizzes and class exercises to prevent children from cheating and other forms of examination malpractices.
5. Creating several opportunities for students to share and use school properties. Examples are; furniture, library facilities, etc.
6. Establishing and implementing rewards and punishment schemes. This will make pupils behave in accordance with school rules and regulations.

RELIGIOUS INSTITUTIONS

Christian religion, Islamic religion and Traditional religion which are the main religious bodies in Ghana have roles to play in the moral development of the child. Among the activities through which they play their roles include the following:

1. Teaching and inculcating of moral values such as honesty, faithfulness, obedience, etc into children and nurturing these roles.
2. They preach on moral issues during congregational meetings or services. For instance, Christians use the Ten Commandments contained in the Bible.
3. The teaching of acceptable behaviours to children through Koranic schools and Sunday Schools by Muslims and Christians respectively.
4. Provision of spiritual satisfaction which leads to physical and material needs of children.
5. They also promote citizenship education and obedience to authority. Various activities are organized in children to educate children on their rights and responsibilities as well as the need to respect and obey authority.
6. Provision of welfare services in the mosque and churches. This educates children to be caring and support others in times of needs.
7. List other roles played by religious bodies in the moral development of children.

THE MASS MEDIA

Newspapers, magazines, journals, books (print media), radio, television and video shows (electronic media) constitute the mass media. The mass media play various roles in the moral development of the child which include the following:

1. Publication of news items on moral issues such as presentation of relief items to the vulnerable.
2. Provision of information on moral issues on radio and television. This exposes children to moral issues which affect their development.
3. Provision of opportunities for children to observe ad listen to people with high moral standards. This provides quality models for children to emulate.
4. Putting up programmes and articles which expose children to their cultural values and that of other people's culture.

STAGES OF MORAL DEVELOPMENT

Lawrence Kohlberg categorized moral development into six stages of three main levels. The levels are:

1. Pre-Conventional or Pre-moral level
2. The Conventional or Role Conformity level
3. The Post-Conventional level.

LEVEL 1: THE PRE-CONVENTIONAL LEVEL

At this level, children have little conception of what socially accepted moral behavior means. As they grow, they begin to display signs of initial moral behavior.

STAGE 1: Obedience and Punishment Orientation

Children basically follow rules in order to avoid punishment. They conform to rules imposed on them by figures they consider as authorities. The child at this level find it difficult to determine whether his behavior is good or bad. He is only influenced when he sees that his action has resulted in either punishment or reward.

STAGE 2: Instrumental Relativist Orientation

At this stage, the child judges an act as right or wrong depending on how it satisfies his needs. The moral situation is thus determined by the needs of the individual. Occasionally, other people's needs are considered but such consideration is given

as a debt to be collected later on. (Hand go, hand come). I scratch your back, you scratch my back. According to Kohlberg's, the notion of reciprocity works here.

LEVEL 2: CONVENTIONAL LEVEL (ROLE CONFORMITY LEVEL)

The child basically conforms to rules in an effort to avoid punishment or to receive reward. He tries to maintain good relations with people and to win their approval. His conformity to rules is because he does not want to be found guilty and be condemned by his social group. He learns the nature of authority both from his family and the society.

STAGE 3: Conformist or 'Good boy/Good Girl' Orientation

The child judges moral behavior to be what pleases others. He/she tries to be good or nice in order to win approval of others. They conform to rules in order to identify with emotionally important persons. As the child grows, the identification is extended from individuals to social institutions such as the church and school.

Egocentricism is pushed to the background and others are given a helping hand.

STAGE 4: Law and Order Orientation

Children at this stage show respect for authority and try to maintain the social order. They believe that moral behavior is that which upholds the social order and right behavior entails doing one's duty or obeying authority. He believes that the laws of society are put in place so as to set the same standards of conduct for all citizens. Moral judgements are made by individuals in accordance with these laws and rules.

LEVEL 3: POST-CONVENTIONAL LEVEL (AUTHORITY OF SELF-AFFECTED MORAL PRINCIPLES)

At this level, the individual's morality reaches a mature stage. The child realizes that he has an individual right and can determine what is right and what is wrong irrespective of what others might think. He recognizes himself as an individual within a group and has the right to hold a different opinion. He can thus behave according to his own values.

STAGE 5: Morality of Social Contract (Legalistic Orientation)

The individual realizes his rights and democratically accepted laws which exists and their necessity. He examines every issue on its own merit. He behaves according to a social contrast, a situation where mutual respect is expected and given to

members of the society. Written documents such as a country's constitution can be interpreted to help resolve conflicting laws and dilemmas.

The individual personality selects moral principles to guide his behavior and is careful not to violate the rights of others. The stage is referred to as contractual legalistic orientation, because the individual considers moral issues in their legalistic sense.

STAGE 6: Universal Ethnic Principle Orientation (Morality of Personal Conscience)

This is the highest state of moral development or moral reasoning. The individual behaves according to universal principles such as justice, equality of human rights, and respect for human dignity. An individual at this state believes that citizens have a right to disobey laws that deny human dignity and equality. A right or correct behavior is defined as a decision of conscience in accordance with self-chosen ethnical principles that are logical, universal and consistent.

WAYS BY WHICH TEACHERS CAN ASSIST PUPILS IN THEIR MORAL DEVELOPMENT

(i).Through the teaching of subjects on the time-table e.g. subjects which contain a lot of moral issued e.g. Religious and Moral Education, Story Telling, etc.

(ii).Formation of rules and regulations to guide the behavior of children.

(iii).Children should be encouraged to form and join clubs and societies (social relationships are important in moral development)

(iv).Exposure of children to moral or religious issues at school morning assembly, worship, etc.

(v).Assigning leadership role and positions of responsibility to the pupils.

(vi).Organization of talks and symposia on topics which are related to moral issues.

(vii).Use of rewards and punishment – Rewards and praises should be offered for good moral conducts, rebel reprimand, etc for poor conducts).

(viii).Teachers as role models.

(ix).Guidance and Counseling Services

(x).Encourage children to read books which contain moral issues

(xi).Improving pupils in sports and games.

EDUCATIONAL IMPLICATIONS OF MORAL DEVELOPMENT

1. Subjects that contain a lot of moral issues should be emphasized in school e.g. R.M.E.

2. Rules and regulations should be formulated to guide behavior.

3. Children should be encouraged to form and join clubs and societies because social relationships are important in moral development.

4. Expose children to moral or religious issues at school morning assembly and worship periods.

5. Assist children to develop continued discipline in self-control without repressing their emotions or forcing to behave like adults.

6. Give children opportunity to widen their social horizons with experience of cooperation, tolerance, sympathy and consideration for the rights and privileges of others.

7. Use methods such as role plays where children dramatize the feelings and attitudes of a number of different characters in particular moral situations.

UNIT THREE

CHILD AND ADOLESCENT LEARNING

MEANING AND CHARACTERISTICS OF LEARNING

DEFINITION OF LEARNING

The concept '*Learning*' has been variously defined by psychologists depending on their orientation. Two of the commonly accepted definitions were given by Kimble and Wittrock.

Kimble (1960) defined 'Learning' as "a relatively permanent change in behavioral potentiality that occurs as a result of reinforced practice".

Wittrock (1977) also defined 'Learning' as "the process of acquiring relatively permanent change in understanding, attitude, knowledge, information, ability and skill through experience"

The above definitions give some insight into the nature of learning. They reveal that:

1. Learning must always be the result of an observation, practice, training or experience. This implies that behaviourial changes that cannot be attributed to observation, practice or training cannot be termed as learning.

2. Learning is evidenced by performance of some sort.

3. Learning involves a change in behavioural potentiality

4. The change is relatively permanent

5. Learning could be described both as a process and a product.

Learning as a Process	Learning as a Product/Outcome
Learning is: (i).Acquiring knowledge and skills (ii).Getting information (iii).Getting conversant with an idea	*Learning is*: (i).A change in behavior more or less permanent (ii).A sort of experience

CHARACTERISTICS OF LEARNING

1. Learning is an ability hidden within the individual in the process of learning, where the individual begins to gain insight or understanding, a latent capacity develops which later manifest in behavioural change when the opportunity is provided.

2. Learning as a process has a beginning and an end. The individual goes through a process of acquisition and the process come in the form of performance.

3. Learning can only be inferred and cannot be seen. Learning is a mental process. In acquiring skills, knowledge and attitudes, the individual uses various mental processes which are not observable. It is the result of these processes that can be observed through the application of knowledge, exhibition of emotions, and performance of skills.

4. Learning is an interaction with an experience. For learning to take place, the individual must be presented with challenging situation and in Piaget's parlance assimilate, accommodate and adjust to the situation to achieve equilibration.

5. Learning is observable. The mental activities that take place in the mind of an individual manifest in the performance which can be observed. This means that every learning experience is an action potential. It is an internal act (covert observed through the learning overt response).

6. Learning is relatively permanent. The learned experience should linger on until forgetting takes place (or new information displaces old learning).The individual should be able to show evidence of learning without any internal influence and this should be within the appreciable time span. This implies that events like fatigue, illness and the effect of drugs are only temporary; their effects do not last as compare to learning.

PRINCIPLES OF LEARNING

1. **The Principle of Multiple Responses**: This principle states that the individual may try many responses before getting the right response through the process of trial and error. The trial and error theory was propounded by E.L.THORNDIKE

2. **The Principle of Mental Set**: According to Worthman, Loftus and Marshall (1988) mental set is a tendency to transfer previously learned knowledge to new situations. It refers to the pre-disposition to act in a giving way. For learning to occur, the

individual must have a positive mental set since inappropriate mental sets can be counterproductive. The child must have the right psychological frame for lessons.

3. **The Principle of Analogy or Assimilation**: This principle states that when an individual encounters a new situations or problems of which he has no natural or learned responses, the response he or she makes will resemble an earlier response to similar situation. The individual will analyze the situation using his previous knowledge. Any new information would then be assimilated by adding the new information to old ways of thinking or behavior. A child who knows the concept 'dada' will call his uncle 'dada' since he is also a man.

4. **The Principle of Associative Shifting**: This principle states that any response of which a learner is capable may be attached to any stimulation which he or she is sensitive. We learn to associate certain events in nature. By this, we are able to predict the consequences of certain actions and understand or identify the causes of certain events. This makes it possible to use reinforcement to promote learning.

5. **The Principle of Partial Activity**: This principle states that a response made only to parts or aspects of a total number than to be totally. According to Thorndike, when attention is focused on a part, learning is more effective and faster than trying to gain insight into the totality of a learning situation. This principle contradicts Gestalt's position which emphasizes on learning the whole or trying to gain understanding into phenomenon by looking at the whole picture.

FACTORS THAT INFLUENCE PUPILS' LEARNING

Pupils' learning is influenced by a number of factors among which are the following:

1**. Level of intelligence**: The higher a child's level of intelligence, the easier it is for him to understand, learn, retain and remember whatever material he has learnt.

2. **Maturation and Readiness**: Maturational theorists point out that I tis virtually impossible for an individual to perform tasks for which he is not matured enough to undertake. The more physiologically and psychologically ready a person is, the easier it is forte individual to perform and master a task.

3. **Type of materials to be learned**: Effective learning depends on the type of materials to be learned and how materials are presented. For instance, the more meaningful, the material to be learnt, the easier it is to the learner. There should also

be proper linkage between new material to be learned and the child's previous experiences.

4. **Gender factors**: Gipps et al (1944) and other researchers observed that generally, girls have few reading, speech and general problems of backwardness than boys. Boys on the other hand are better at figures and computations than girls. In spite of these controversial findings, the teacher should identify areas and levels of learning and plan their lessons to incorporate the relative needs of both boys and girls.

5. **Health Status**: It is said that a sound mind lives in a healthy body. Pupils learn better when they have good health. Protracted illness adversely affects pupils' learning.

6. *Emotional Factors*: Children learn better when they are emotionally stable. When they are denied love and affection by their parents and teachers, they suffer from anxiety and may feel rejected. This disturbs their studies and retards their progress in school.

7. **School Environment:** The physical and social environment in the school affects the learning of learning. a sound, well equipped and healthy environment supports learning while an environment which is deprived or filled with social strife retards progress in learning.

8. *Repetition and Practice*: Practice makes perfect. When children have the opportunity to practice what they learn, it enhances greater understanding and promotes memory. Lack of practice leads to forgetting.

9. *Socio-Economic Factors*: Various studies have established that children from deprived backgrounds experience lower school achievement than their counterparts from homes with better environmental conditions. This is accounted for by issues such as:

(i).*The number of facilities in the child's home* e.g. lighting, TV, radio, library materials, toys, suitable furniture for studies, etc.

(ii).*Parental interest and encouragement*: Children, whose parents show interest in their academic work, supervising them and providing their needs, guiding them along certain academic goals, stand at a higher advantage for academic excellence.

(iii).*Motivation*: Children who are motivated put in more effort into their studies.

BEHAVIOURISTS' PRINCIPLES IN LEARNING

The behaviorists are psychological school also called Stimulus-Response (S-R) theorists, Associationists, and Connectionists or Connectivists. They explain the process of learning as the establishment of bonds or forming connections between stimuli and responses. They strictly see learning as overt responses or behavior which is reinforced.

According to Roger and Allan (1978), a stimulus is any event, which is perceived by the human sense receptors. It can thus be a visual, a sound, a taste, a touch, a smell or a combination of any of these. A response is an event, which s elicited (or results) from a stimulus. Some responses are purely reflexive, that is, they are automatic or unlearned (innate) e.g. blinking the eye in the presence of an approaching object. Other responses develop as a result of learning e.g. 2*2 = 4, and 2*4 = 8, etc.

Behaviourists' View of Learning

The behaviorists hold the view that learning occurs when the organism interacts with the environment and encounters some experiences. Stimuli are provided by the environment and the organism responds to it. Bonds are formed through this process. They believe that people behave in response to stimulation. Learning thus involves behavior or action which is put up anytime the appropriate stimulus is given.

Another assumption of the behaviorists is that, learning is an outward behavior that is shown by individuals. A person can thus be trained put up a particular behavior through techniques such as conditioning. Conditioning as a learning technique involves arranging stimuli in such a way that it can bring forth the desired response through the use of reinforcement.

The behaviorists contend that humans and animals have similar neuro-physiological structures in their brains. Consequently they possess similar learning processes and capabilities. Common laws thus explain both human and animal learning. We can therefore study the behavior of animals like dogs, rats, pigeons, and apes to understand human behavior and learning.

CONDITIONING THEORIES

CLASSICAL CONDITIONING

Conditioned behaviours are learned behaviours. In classical conditioning, previously neutral stimuli are associated with certain events that lead to certain responses which are then reinforced. Pioneering work in this field was conducted by a Russian physiologist called Ivan Pavlov (1849-1936). His investigations led to the conclusion that an organism's natural behavior can be elicited by a neutral stimulus. His finding came as an accident when he was studying digestion. As gods eat or smell food, they salivate and this aids digestion. He realized that dogs could salivate even before they tested or smelled food. He reasoned that this might happening since the dog had learnt to associate the trainers, who brought them food with the food itself. The process is explained in three phases:

PHASE 1: UNCONDITIONED PHASE

UCS   →   UCR

(Food)   (Salivation)

PHASE 2: CONDITIONING PHASE

NS   UCS   →   UCR

(Bell)   (Food)   (Salivation)

PHASE 3: CONTITIONED PHASE

CS   → CR

(Bell)   (Salivation)

Phase one is the natural phase where no conditioning has taken place. The natural response to food is salivation.

In phase two, the bell which is a neutral stimulus is continuously paired with the food which is an unconditioned stimulus

In phrase three, the bell through continuous pairing with the food acquires the characteristics of the food and elicits salivation from the dog. The dog has thus learned to respond to the bell the same way it responses to food.

Classical conditioning is seen in everyday life. The child extends fear of a nurse to all who wear white gowns or green attire or white capped persons because of an injection he might have received. The same applies to fear of policemen, soldiers and even cats and dogs because of an unpleasant experience.

In school, children learn to react to bells and drum through conditioning.

Pavlov's research brought out three factors that influence conditioning. These are:

1. **Contiguity:** This deals with the connection in time and space between two events. The two events should be closed enough for them to be associated.

2. **Frequency:** This is how often a stimulus is followed by the response. This will establish whether the response is incidental to the stimulus or that it is a consequence of the stimulus

3. **Reinforcement:** This is how the learned association is strengthened.

PAVLOWIAN PRINCIPLES

1. *Stimulus Generalization*: The organism could be conditioned to respond to similar stimuli e.g. responding to bell and siren.

2. *Stimulus Discrimination*: The organism could be conditioned to respond to particular stimuli and ignore others e.g. respond only to the whistle and ignore the bell.

3. *High Order Conditioning*: Non-related stimuli could be paired to elicit the same response. For example, the organism could be conditioned to respond to a red light, then a clap, then a whistle blow, and then a green light before food is presented.

4. *Extinction*: When reinforcement is withheld for a long time, the conditioned response will fade away.

5. *Spontaneous Recovery*: Extinguished responses could be brought back through re-establishment of reinforcement.

OPERANT CONDITIONING

Another group of psychologists opined that the classical conditioning theory of learning was too narrow and that learning was a more complex activity. The organism at learning situation is not first a passive recipient but an active participant who operators on this environment and learns out of the process. Among these psychologists are:

B.F.SKINNER (OPERANT CONDITIONING)

Skinner work focused on the organism's observable behavior. In Skinner's work, he developed a box known as the Skinner box on which he placed a hungry rat.

The box has a lever mechanism that allows food to drop into a food tray when a protruding bar is pressed. The cat after a number of random actions in an attempt to escape eventually stumbled on the lever and presses it. Immediately following the action the experimenter deliver a pellet food into the tray. The rat moves about some more and happens to press the lever again. Another food pellet is delivered. The rat learns to focus on the pressing the bar at opportune times to receive the food pellet which Skinner described as the reinforcement for the bar pressing action.

According to Skinner, behavior must occur before it can be reinforced. The rest learned to operate on the environment to gain reward. Skinner claimed that most human behaviours appear to be emitted and not elicited by any obvious stimuli.

Such emitted behaviours Skinned labeled operant, while those responses that are elicited by stimuli, he called respondents.

To Skinner, any behaviour are acquired and maintained through what he called operant conditioning. Operant conditioning because the organism operates on the environment and every such action is followed by a specific consequence.

KEY VARIABLES IN OPERANT CONDITIONING

Many variables affect operant conditioning. Important ones include the strength of consequences, timing of consequences and frequency of consequences.

1. *Strength of Consequences*: This can be measured in terms of either tie or degree. For instance, the length of time a child stays in a time out room without positive reinforcements affects how soon and for how long an unacceptable behaviour will be suppressed. Similarly, an unconcerned "please do not do that darling" will not be as effective as a firm" don't do that again".

 2. *Timing of Consequences*: This deals with the interval between a desired behaviour and the delivery of the consequences (reward or punishment). Generally, the shorter the interval, the greater the likelihood that the behaviour.

3. *Frequency of Consequences*: When a researcher varies the frequency with which an organisms is to be reinforced, the researcher is said to manipulate the schedule of reinforcement ie. The pattern of presentation of the reinforce over time schedules of reinforcement generally are based either on intervals of time or frequency of response.

REINFORCEMENT

Skinner posited that the type of consequences that follows the behaviour is crucial, since it determines whether the behaviour is likely to recur. The consequences can be a reinforce or punisher.

The Meaning of Reinforcement

To a psychologist, reinforcement is any event that increases the probability of recurrence of the response that preceded it. It could also be described as any consequence that can increase or decrease the occurrence of behaviour. A reward therefore acts as a reinforce if it increases the likelihood that what was targeted for conditioning will occur

Types of Reinforcers/Reinforcements

1. Positive reinforce/reinforcement is anything we present to subject following a response in order to strengthen that response. Food pellets serves as an effective reinforce for humans. Positive reinforcers could thus be described as things the subject likes, which are given to him/her as a reward for making a particular response.

2. Negative reinforce/reinforcement on the other hand is something unpleasant that we remove in order to strengthen a response. The removal of something unpleasant will be equally rewarding as the presentation of something positive. If a rat that is being shocked escapes from that shock by jumping a barrier, then jumping will be a response that reinforces strengthens. Both positive and negative reinforces strengthen responses.

3. Punishment conversely is an unpleasant stimulus that is presented with the aim of suppressing response. Both punishment and negative reinforcement involve unpleasant stimuli. The difference is that punishers are designed to strengthen a response by removing a negative stimulus.

Primary and Secondary Reinforcers

A primary reinforce is one that increases the likelihood of a response that has survival value for the organism. The organism needs these things to meet physiological needs such as food, water, rest, termination of pain and exercise.

A secondary reinforce is a neutral stimulus that initially has no intrinsic value for the organism, but rather when they are linked with a primary reinforce can become

rewarding. Such secondary reinforcers include money, grades, certificates and award cups. etc that have acquired value.

SCHEDULES OF REINFORCEMENT

This focuses on variations in the frequency with which an organism is to be reinforced. The simplest and easiest reinforcement pattern is continuous reinforcement in which reinforcement is given for every occurrence of the targeted behaviour.

Schedules of reinforcement are generally based on either intervals of time or on frequency of response. There are four basic schedules of reinforcement two of which deals with intervals or time periods and the other two deals with work output and are known as ratio schedules.

1. Fixed Interval Schedule (FI): This is where the subject is reinforced based on predetermined fixed time periods. For instance, the Skinner box is set to deliver food pallets after two minute's time intervals. This implies that irrespective of the number of times the rat presses the lever, food is delivered only after the bar pressing which occurs after the elapsing of the two minutes' time intervals.

This type of schedule produces a pattern of response with a scalloping effect. This implies that the rat will pause after reinforcement and will begin to speed up its response rate only as the end of the interval approaches.

2. Variable Interval Schedule (VI): This schedule involves the giving of reinforcement after variable or changing interval. Reinforcement might be given after ten seconds, then the next comes after fifteen seconds, the next after five seconds and so on. This schedule does not produce scalloping, as the subject cannot judge the length of the waiting period. The shorter the average interval, the more responding we will observe.

3. *Fixed Ratio Schedule (FR):* This schedule involves reinforcing the subject for a specified number of responses (amount of work). For instance, a rat in a Skinner's box might be reinforced after every tenth bar press. This will make the rat to work at a steady rate in order to gain the reward on a regular basis.

4. *Variable Ratio Schedules (VR)*: In this schedule, the subject is reinforced for a predetermined but variable number of responses (amount of work). Even though the rat

learns that hard work produces a reinforce, it cannot tell when the reinforcer will be delivered. The rate therefore works at an even steady, high rate to earn more rewards and this helps to generate the highest available response.

PREMACK PRINCIPLE

In the 1960's, David Premack suggested that any response that occurs with a fairly high frequency can be used to reinforce a response that occurs with a relatively lower frequency. The reasoning was that probable behaviours, that is behaviours likely to happen, including behaviours such as eating and social behaviours such as watching television, playing football, listening to music and dancing can reinforce less probable or unlikely behaviours. Such unlikely behaviour includes sweeping, weeding, washing plates, cleaning closets or burning toilet papers, etc.

EDUCATIONAL IMPLICATIONS OF SKINNER'S THEORY

1. Learning is likely to occur if reward is made contiguous (close in time) upon the behaviour that we want the subject to learn. Teachers can reinforce desired behaviour in children by showing approval when the behaviour appears.

Reinforcement is necessary in building desirable behaviour in pupils (behaviour shaping)

2. Lesson Objectives should be stated in behavioral and observable terms. They should be specific and well-defined.

3. Materials to be learned should be arranged in a systematic and sequential step from known to unknown, easy to difficult, simple to complex.

4. Conducive classroom atmosphere with relevant and ample materials enable students have healthy and active interaction.

5. Emphasize self-competition rather than group competition. Students should be made to progress at their own pace given individual attention.

6. Practice skills learned should be regular and systematic.

7. Formative evaluation or continuous assessment should be advocated with prompt feedback to enable learners correct inaccurate responses.

8. Punishment should be avoided as much as possible.

EDWARD LEE THORNDIKE INSTRUMENTAL LEARNING (TRIAL AND ERROR)

Edward Lee Thorndike (1874-1947) is one of the pioneers of operant conditioning. Out of his experiments he formulated, his theory if instrumental learning of instrumental learning or Trial and Error success learning.

In his experiment, he placed a hungry cat in a puzzle box and placed a plate of meat outside the box. The cat was pressing to find a way to escape from the box and get the food by pressing a lever that opened a door in the box. The cat's initial behaviour was random. Eventually, however, it accidentally stepped on a catch opened the cage for it to eat the meat. On subsequent trials the cats actively became less random and focused on the cage near the released mechanism. The time to escape decreased until the cat eventually operated the release as soon as it found itself in the box. Thorndike then concluded that animals learn through active behaviour, accidents and through chance to success. Through trial and error, the stimuli(S) or the puzzle box were connected with the response (R), which brought release. Thorndike termed it instrumental conditioning because the animal was instrumental in the process of getting the food first by accident and then deliberately. He called these behaviours instrumental behaviours.

THORNDIKE'S LAWS OF LEARNING

On the basis of the experiments, Thorndike suggested three laws which he believed governed the learning of both humans and animals.

A: The Law of Effect: This law states that, when a response is followed by a feeling of satisfaction, it is likely to be repeated in a similar situation. Conversely responses which bring little or no satisfaction which the learner derives from performing a task or for making a response. If a pleasurable situation follows a learning event or experience, the learning will be remembered more strongly, whereas behaviour which is not rewarded will tend to die away.

B: **The Law of Exercise**: This law is in two parts: (i).The law of use (ii).The law of Disuse.

The law of use states that the more frequently a learning situation is repeated, the better and more permanent the learning. The law of disuse states that, the less frequently a learning situation is repeated, the weaker the bond established between stimuli and responses. This can be stated as Practice strengthens competence and lack of practice weakens skills. Practice makes perfect.

C:The Law of Readiness: This law has to do with the psychological neurons to operate or to conduct in order for connections to be made The organism must be mentally set to perform the instrumental behaviour moving to some motivation e.g. hunger, curiosity, etc.

Behaviorists make this propositional a conducting unit ready to conduct, conducting by it is satisfying a conducting unit ready to conduct not conducting by it is frustrating by it is annoying.

What this law simply means is that when an individual is ready to act in a particular way, to do so is satisfying. However, when the individual is not ready to act and he is forced to do so is satisfying. Readiness depends on both maturation and experience of the learners.

EDUCATIONAL IMPLICATIONS OF THORNDIKE'S THEORY OF LEARNING

1. Practice is one of the most important aspects of classroom learning. Prolonged practice is needed for polishing skills (stamping in connections).

2. Provide satisfying consequences or positive reinforcement for correct responses.

3. School activities should be organized in increasing difficulty so that pupils can progress without failure.

4. Provide materials in varied ways so that novelty may be maintained.

5. Ensure readiness for learning tasks.

COGNITIVISTS' PRINCIPLES IN LEARNING

The word 'cognition' derives from the Latin word Cogito which means "Think". Cognition therefore implies the use of the mind to reason or analyze events in order to come to a conclusion or give appropriate responses. It implies knowing or knowledge.

Cognitivists' View of Learning

The cognitivists' theory of learning therefore focuses on the use of the mind in an organized manner to perform operations that lead to behavioral changes which can be termed as learning. Cognitive theory asserts that people are actively and regularly involved in determining their goals and their means of achieving them. It focuses on thought as an initiators and determinants of behaviour.

The Cognitivists see learning as the result of the active organization and utilization of the manner's cognitive capacity that leads to adaptation to the environment.

According to them, learning involves the power of the mind which is rooted in the brain and depends on the whole body for its expression. They therefore would not accept any passive reactions to external stimulation.

They maintain that, if human beings are aware of their thought patterns, they can control their reasoning and ultimately their overt behaviour. It is this that leads to intrinsic motivation, which is engaging in behaviours for no apparent rewards except the pleasure and satisfaction of the activity itself. For fun, people engage in wide variety of behaviours that bring no external tangible rewards. Children play with toys while adults do crossword and jigsaw puzzles.

Some prominent cognitivists are Jerome Burner, David Ausubel, Robert Gagne, Benjamin Bloom and Jean Piaget.

The cognitive learning theories include Insightful learning, Discovery learning and Meaningful reception learning.

INSIGHTFUL LEARNING

This was derived from the work of gestalt psychologist also known as Field Psychologists, notable among which are Kurt Kofica, Kurt Lewin, Wolfgang Kohler and Max Wertheimer

Gestalt is a German word that means pattern, configuration or organization that makes meaning. The Gestalt psychologists believe that we experience the world in meaningful wholes and not as isolated stimuli. We hear music not isolated sounds; we see people not isolated hands, legs, ears, eyes, etc. To them, the whole is more than the sum of the parts, and therefore, the whole makes more sense than looking at disjointed parts of the whole.

Gestalts consider learning as the organization of one's perceptual field into new categories or 'gestalten' about a situation that leads to sudden insight into relationships of factors to solve a the gestalt psychologist believes that learning is understanding and that understanding can be achieved through a series of three successive steps:

1. Grouping elements of the learning situation into organized wholes

2. Perceiving or realization of the structure or relationship among parts of that whole

3. Awareness of the meaning and function of the parts of the whole or of the steps to the solution.

The Gestalts propose that the most characteristics form of human learning is the understanding of relationship through sudden awareness or insight, referred to as the 'Aha' experience. It is that feeling of having a sudden discovery. Archimedes referred to it as 'eureka' or 'I've found it'.

Insight learning is that situation where when confronted with a problem, the learner draws upon the patterns of his past experiences to help him understand the new situation. For learning to take place, the learner must re-organize old ideas to permit him to grasp the relationships in the new problem. Perception of the new relationships leads to insight into the problem.

Wolfgang Kohler, a psychologist, used chimpanzees in his research experiments. He noted that the animals developed insight into methods of finding and bringing back food that was beyond reach.

In one of the experiments, Kohler placed a chimp named Sultan in a cage and put a bunch of banana outside the cage out of the animal's reach. At the end of the cage within reach of the ape, was a stick. According to Kohler, Sultan solved the problem by picking the stick using it to rake in the fruits. Unlike Thorndike's cart that used random trial and error activity, Kohler ape, after failing to reach the fruits with its hands and feet, reached the solution suddenly after surveying the total situation.

EDUCATIONAL IMPLICATIONS

Teachers can promote insight deliberately in pupils through the following:

1. Prepare lessons carefully and select materials thoughtfully. Systematic and effective presentation also involves much u se of previous knowledge with which new material is associated.

2. Present materials clearly so that pupils can easily grasp the relationships within them.

3. Use suitable teaching aids and meaningful practical activities.

4. Use questioning technique that calls for divergent and higher order thinking. Probe children's responses further.

5. Use concrete materials and examples in teaching, especially with pupils at the basic level of education.

6. Give opportunity to students to make their own discoveries. Help them to develop reflective thinking so that they can gain insight into the rules upon which solutions are based.

ADVANTAGES OF INSIGHTFUL LEARNING

1. There could be time wastage in trying to grasp the idea and arriving at insight.

2. It needs special skills from the teacher.

3. It is difficult to Use for large classes with little teaching and learning facilities.

4. The inability to arrive at insight can frustrate the learner.

5. It can lead to inaccurate understanding of what has been learnt.

DISCOVERY LEARNING – JEROME BRUNER

Jerome Brunner is one of the psychologists with a cognitivist orientation. He explained learning as a process of discovery. Discovery learning can defined as learning that takes place when students are not presented with subject matter in its final for but rather are required to organize it themselves. This places in the learner the task of discovering for himself/herself the relationship that exists among items of information.

Bruner proposes that teachers should confront children with problems and help them seek solutions either independently or by engaging in group discussion. To him, true learning involves figuring out how to use what you already think. He argues that if children arrive at conceptions on their own, they are usually more meaningful than those proposed by others. Again, students need not be rewarded when they seek to make sense of what puzzles them.

Bruner maintains that when children are given a substantial amount of practice in finding their own solutions to problems, they develop problem solving skills and also acquire confidence in their learning abilities as well as a propensity to function in later life as problem solvers. They learn how to learn as they learn.

The discovery approach to teaching requires far less teacher involvement and direction than most other methods.

Categories of Discovery Learning

A: Pure Discovery: Students are given a topic or problem to work on and they are free to explore the topic with little assistance or guidance by the instructor.

Conclusions to the assignment and strategies they adopt to solve the given problem are solely given to students.

B: Guided Discovery: Students are given a topic and materials to work with as well as procedures to follow, but they arrive at any conclusions themselves.

Bruner suggests that teachers can stimulate learning in the classroom, especially by guiding their students to discover principles and relationships for themselves.

Key features of discovery learning include the following:

➢ The learner is active; he does the learning himself so as to discover the principles or relationship.

➢ Emphasis is placed on the individual's active manipulation of concrete materials.

➢ The learning can be more meaningful and long lasting when successful.

➢ The teacher should be ore oriented towards instructing individuals than groups. He should be sensitive to individual differences and response to students' initiative or evidence of readiness for learning experiences instead of just teaching in a routine manner

MEANINGFUL RECEPTION LEARNING – DAVID AUSUBEL

David Ausubel stresses the importance of linking new information to existing knowledge schemes as a requirement for meaningful learning. Ausubel argues that good qualities expository teaching involves presenting learning materials to the learner in its final form. The information should be organized in such a way that it can easily be related to student's existing knowledge schemes (P.K).

According to Ausubel, the task of the teacher is to present the materials in a way that encourage the learners to make sense of it. To do this, the teacher must be related new materials to the R.P.K. of children. He proposes that teachers can structure the content of lessons for students through effective expository instruction designed to produce meaningfully reception. The teacher must use advance organism organizers to provide the learner with a conceptual framework by which text can be understood. In this regard, the organizers must be stated in terms already familiar to the learners.

Meaningful reception is undertaken through the use of expository teaching.

There are two types of expository teaching:

a).Guided learning where the teacher leads pupils through a series of activities.

b).Receptions learning where the teacher presents the materials in a well-ordered way.

Steps in Meaningful Reception

1. Start the lesson with advance organizers or with preview that include the general principles, outlines or questions that establish learning set in learners.

2. Briefly describe learning objectives and alert the students to new or key concepts.

3. Present new material in small steps organized logically and sequenced in a way that are easy to follow.

4. Elicit student's response regularly in order to stimulate active learning and ensure that each step is mastered before moving to the next.

5. Finish with a review of the main points stressing general integrative concepts.

6. Follow up the lesson with questions or assignments that require learners to encode material in their own words and apply or extends to new contexts.

ADVANTAGES

1. Expository teaching saves time and therefore reduces the cost required for learning.

2. It permits a better organized and more exact statement of what is to be learned.

3. It permits topics to be treated into greater details.

4. It permits topics to be reacted into greater details. It is adequate for teaching pupils who have reached the formal operations stage.

UNIT FOUR

INFORMATION PROCESSING

This approach attempts to account for learning in terms of events that take place in the body particularly within the brain and nervous system. Theorists of this approach to learning focus on what happens in the brain during learning. They examine issues such as:

a).Processes and encoding techniques involved in storing information in the rain in a relatively permanent manner

b).Retrieval of information to guide later performance.

c).The nature of change that occurs in the brain when learning takes place and how this change persists or fades.

They share the standpoint of the cognitivists that intake of information from the environment is active and systematic rather than passive and controlled by cue stimuli. To them, learning involves active cognitive processing of information rather than mere stimuli response association.

MEMORY

Memory may be defined as the ability to assimilate, store or retain and reproduce information when needed. It consists of two intellectual processes.

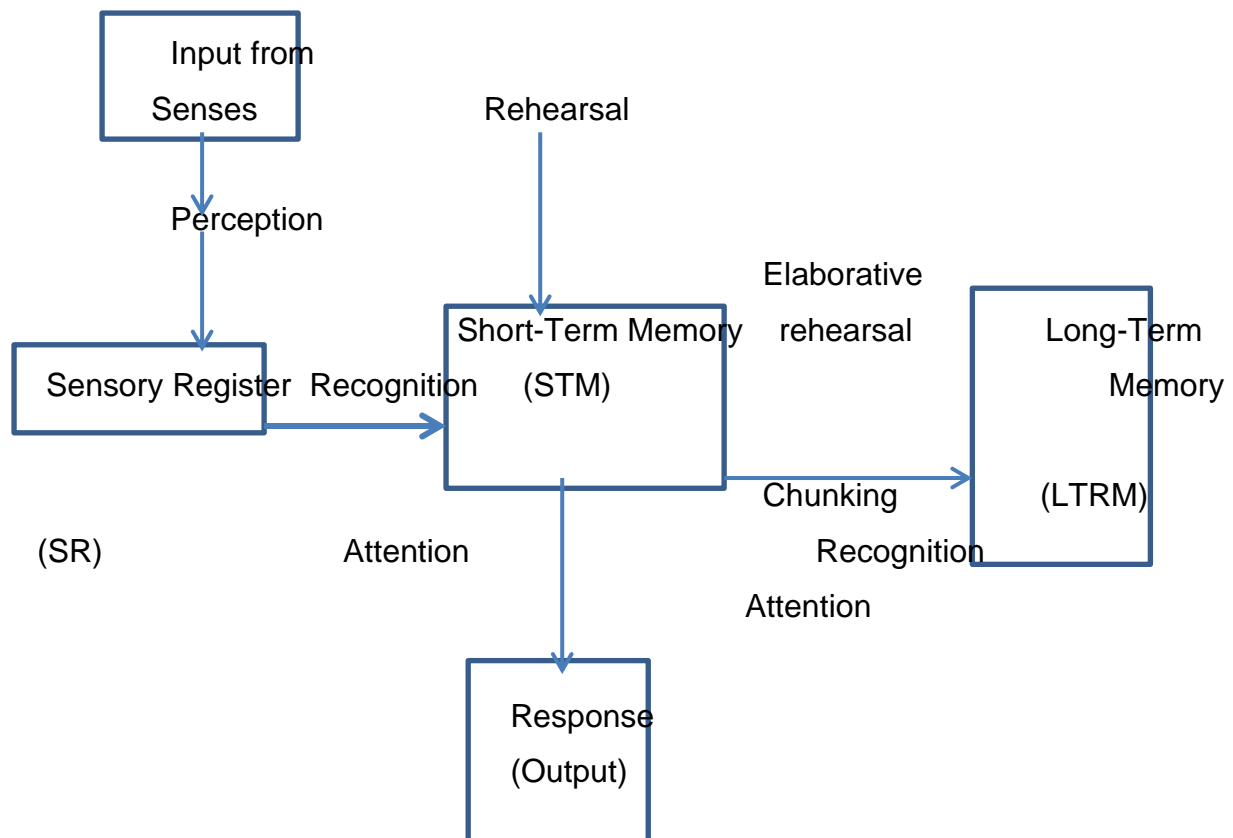- ➢ Storing information
- ➢ Retrieving information

Memory thus serves two inter-related functions.

(i).   Conservation and retention of past experiences, knowledge, skills, etc.

(ii).   The recall or recognition of what has been retained.

The process of memory thus involves three stages viz:

a). Learning

b). Retention over a period of time

c). Recall or remembering when we need the information.

COMPONENTS OF MEMORY

```
┌──────────────┐
│  Input from  │
│   Senses     │                    Rehearsal
└──────────────┘
      │
   Perception                                      Elaborative
      │          ┌────────────────────┐            rehearsal          ┌──────────────┐
      ▼          │ Short-Term Memory  │                               │  Long-Term   │
┌──────────────┐ │      (STM)         │                               │   Memory     │
│Sensory Register│ Recognition                                         │              │
└──────────────┘ │                    │──── Chunking ────────────────▶│   (LTRM)     │
                 │                    │     Recognition                └──────────────┘
   (SR)          └────────────────────┘
              Attention    │              Attention
                           ▼
                  ┌──────────────┐
                  │   Response   │
                  │   (Output)   │
                  └──────────────┘
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The information Processing theorists divide the memory system into three components: Sensory Register, Short Term Memory and Long-Term Memory.

1. **The Sensory Register(SM/SR)**: This is the receptor system, the eyes, nose, ears, etc. the senses are what we use to monitor whatever is happening in the environment. These receive impressions from the outside world which are initially processed and they last less than a second. It does not keep information but acts as a conduct for the information to pass through.

The sensory register performs initial encoding and provides brief storage of stimuli from which human beings can retrieve information. It transforms visual. Auditory or chemical stimuli (such as odour) into a form the brain man interprets. Sensory memory is temporary and fragile. It must be transferred elsewhere for additional encoding and storage or it will be lost.

Processes such as perception and attention are identified at this stage. Perception refers to the interpretation a person gives to the external stimuli and it is influenced by the individuals' metal state, past experience, knowledge and motivation.

According to Gestalt psychologists such as Max Wertheimer, Kurt Kofika and Wolfgang Kohler, we perceive whole units rather than pieces of sensation and the 'whole' perception promotes better understanding.

Attention refers to focusing one's sense receptors on particular in-coming stimuli. For information to pass on from the sensory register to the short term memory, the individual is required to pay attention.

Teachers can gain the attention of their students by doing the following:

(i) Use cues that suggest indicate that the information is important.

(ii) Raise or lower voice to signal that the are about to receive important information.

(iii) Use gestures.

(iv) Use colours, underlining, bolding, etc.

(v) Increase emotional content of what is to be learnt.

(vi) Use unusual, inconsistent or surprising stimuli.

2. ***The Short Term Memory (STM):*** This is the memory storage system that temporarily holds current or recently attended information for immediate or short term use. The information is further encoded and stored for about 20 -30 seconds.

Braddeley and Hitch thought of the STM as a working memory, in which several substructures operate to maintain information while it is being processed. One sub-system may encode and rehearse auditory information, another visual-spatial, another semantic, etc, the working memory actively integrates both conscious and unconscious processes. The STM actively processes information. It is a system in which decisions are made, problems solved, and information flow directed. Retrieval of information from the STM I s quite fast and accurate.

Strategies used for process information for transfer include:

➢ Rehearsals

➢ Meaningfulness

➢ Mnemonics

➢ Ridiculous association.

3. ***The Long-Term Memory (LTM):*** Information Processing researchers think of the LTM as a store house where information is stored fairly permanently when we are not recalling it. Information such as names, faces, dates, places, smells and events, both important and trivial-can be found in a relatively permanent form in long term memory. The duration of information in long term memory is indefinite and may last

from minutes, to days, weeks, months, years and even a life time. The information stored in long-term memory may be typically encoded due to its frequency of use or importance.

Tulving (1985) outlined three types of Long-Term Memory. These are episodic, semantic and procedural memory.

Episodic Memory: This refers to our memory of personal experiences, a mental movie of things we saw or heard. For example, when we remember how we celebrated a birthday, we are recalling information stored in our long-term episodic memory.

Semantic Memory: This contains the facts and generalized information that we know e.g. concepts, principles or rules and how to use them, and are problem-solving skills and learning strategies. It is mentally organized in networks of connected ideas or relationships called schemata or schemes.

Procedural Memory: This refers to our memory of processes or how to do something. It is stored in a series of stimuli response pairings.

FACTORS THAT PROMOTE RETENTION

Retention refers to the ability of keeping in memory what one has learnt and producing it when it is required. The following factors can be taken into consideration in order to promote retention.

1. Meaningfulness of materials to be learnt.

2. Use of multi-sensory approach.

3. Use of appropriate teaching and learning materials that engender pupils' participation in lessons.

4. Provision of opportunities for revision, practice, exercise and drill.

5. Use mnemonic devices.

6. Provide appropriate linkage between pupils' previous knowledge and new learning materials.

7. Motivate pupils to have interest in lessons.

THEORIES OF FORGETTING/REASONS WHY LEARNERS FORGET WHAT THEY LEARN

1).***INTERFERENCE THEORY (MCGEOCH, 1932):*** This theory says that forgetting is determined by what we do between learning and recall. If we learn new or additional material in the interval between original learning and recall, then the recall of the original material may be impaired. The new learning thus, interferes with our ability to remember the old learning. There are two types of such interferences between old and new verbal associations. A phenomenon called Retroactive Inhibition occurs when new learning interferes with our ability to remember old facts eg. Insaidoo 022212539, Akos -022-213905, Kwabena-021-381467, Bernice 021-487615, John 022-219305, Smark 022-213569

After learning the numbers of Kwabena, Bernice and John, it becomes difficult to remember the number of Insaidoo, though the number of Smart may be easily remembered. Another type of interference is when old learning interferes with our ability to learn new materials. This is known as proactive inhibition. The remembering of new information is impaired by old information from the earlier example of the telephone numbers, the remembering of the number of Smart would be hindered by the number of Insaidoo.

2).DISUSE THEORY (THORNDIKE, 1913): The Behaviorists of S-R- Psychologists give this as an explanation for forgetting. The theory assumes that forgetting takes place because we fail to use or practice what we have learned. Thorndike's position was that when one fails to practice, the bond between a stimulus and a response connection gets weakened resulting in forgetting. In general, the disuse of a mental function weakens it and the longer the lack of exercise, the greater the amount of weakening.

3***).THE DECAY THEORY (KURT KOFFKA -1935***): This is the Gestalt version of the disuse theory. It states that forgetting occurs through the gradual decay of memory traces. According to Koffka, memory traced decay or organized. To him, forgetting is the autonomous destruction of traces through lack of cohesion. The information from memory decays as a result of passage of time disuse. According to decay theory, unimportant events fade from memory and details become lost, confused, or fuzzy. Memory in physiological form can be looked as a trace with the passage of time.

4).LACK OF SUBSUMPTION/INTEGRATION THEORY (DAVID AUSUBEL):

This theory held by the Cognitivists explained that we forget because we do not incorporate new material learned into our cognitive structure. Ausubel suggested that if new materials is understood and related to one's body of original knowledge, it will be retained and will be readily retrievable; if it is not so related but remains isolated it will tend to be forgotten. Integration or subsumption is done by relating new material to old-looking at the differences and similarities between new knowledge and existing knowledge.

5).MOTIVATED FORGETTING/REPRESSION (SIGMUND FREUD, 1916):

Freud theorized that we forget because we subconsciously want to forget an experience. We literally 'elect' to forget traumatic or deeply emotional, embarrassing experiences, which will result in overwhelming anxiety when brought to consciousness. He explained that such experiences are repressed or pushed back to subconscious memory.

The simple explanation is that some things are forgotten because they are unpleasant.

6).AMNESIA:

Amnesia is the inability to remember events usually because of physiological trauma such as blow to the head. Typically, it involves loss of memory for all events within a specific period. There are two basic kinds of amnesia retrograde and anterograde.

Retrograde amnesia is the inability to remember events that preceded a traumatizing event. The loss of memory can cover events just before the event or a period of several years before it. Recovery from retrograde amnesia tends to be gradual, with earlier events remembered before more recent ones.

Anterograde amnesia is the inability to remember events that occur after an injury or brain damage. Suffers from anterograde amnesia are stuck in the lives they lived before the incident. They often completely forge new happenings in their lives.

TRANSFER OF LEARNING

Transfer of learning or training is the effect of prior learning on present learning or application of prior learning on the subsequent performance of different tasks. All application of knowledge in the understanding and solution of new problems and the use of old habits in dealing with new situations are cases of transfer of learning.

TYPES OF TRANSFER OF LEARNING

1. *Positive Transfer* occurs if the learning of a new task is facilitated by an old experience or when a single response is appropriate for two stimuli.

2. *Negative Transfer* occurs if previous experience retards/inhibits/interferes in performance of a task in a new situation or when one stimulus requires two different responses

3. Zero Transfer occurs when training on one activity seems in no way to influence training another. That is, there is no noticeable effect of performance on one task over the performance of another task.

4. **Horizontal transfer (Lateral**): This type of transfer involves the application of what we learn in other subject areas to various situations outside the school, especially in areas of business. It implies performance at the same level as the initial learning but in a different content. E.g. applying knowledge of map reading to finding one's way home in a thick forest, or knowledge of simple addition and subtraction to the calculation of money in buying and selling.

5. *Vertical transfer*: This is the application of what we learn at one point or stage in a course or subject field to learning in a related topic later in the course, thus making the latter topic more understandable, intelligence and more readily learned. E.g. applying knowledge of the proper sequence of alphabet to facilitate learning to use the dictionary correctly later on.

CONDITIONS NECESSARY FOR TRANSFER TO OCCUR

1. *Presence of identical elements*: The learning situations must contain some identical elements. Training in one kind of activity will transfer to another if certain features such as aims, methods and information are identical, e.g. basketball and handball.

2. Similarities when facts, skills, methods, approach are similar, transfer easily takes place.

3.Basic Principles: basic principles underlining the subject should be made clear for better transfer, e.g. in using the continuous tense of words '*ing*' should be added to those ending with 'e' e.g. hope (hoping).

4. *Practice is essential*: The more intensive the original training, the greater the transfer.

5. *Direct teaching for transfer*: There is the need for a wide variety of examples and emphasis on the positive transfer.

6. *Motivation*: Transfer occurs best when the student is motivated fully to apply what he has learned. E.g. relevance of subjects to future life – relating lesson on purification of water (health science) to life in rural communities (wells).

7. Intelligence: usually brighter students discover generalizations and apply them more effectively than average and below average students.

TEACHING FOR TRANSFER.

1. Teachers should clearly outline the purpose of topics or subjects and focus students' attention on achieving the purpose.

2. Aim at children understands lessons. Link new materials to R.P.K.

3. Let children think of problems/situations in which the knowledge gained can be applied.

4.Make sure that skills, concepts and principles are learnt meaningfully through the use of appropriate methods, practice, problem-solving, thoroughness of original learning helps promote transfer (over learning needs to stamping in).

5. Practice: Provide ample opportunity for practice to ensure students' understanding and consolidation of materials leaned. Skills, principles, or concepts learned should be practiced in a variety of situation.

6. Motivate students by explaining to them the long-term value of the subject being leaned.

CHALLENGES FACED BY TEACHERS IN GIDING PUPILS' LEARNING

1. Large class size.

2. Inadequate materials

3. Inadequate infrastructure

4. Emotional problems of pupils

5. Lack of parental support

6. Time constraints in the face of overloaded syllabuses

7. Inconsistent language policies.

GUIDING PUPILS' LEARNING.

1. Help pupils to improve their memory by making them practice what they learn. Always review your lessons to remind students of important ideas. Use revision, practice, exercise and drill.

2. Point out similarities and differences between new and old learning. Generate appropriate linkage making use of R.P.K.

3. Organize and space learning to overcome interference effects.

4. Help children to use mnemonics, acronyms, jingles and rhymes to organize their learning.

5. Make material to be learned meaningful

6. Use the multi-sensory approach.

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