

MODULE 1 CONCEPTUAL FRAMEWORK

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UNIT 1 MEANING AND RELEVANCE OF PSYCHOLOGY FOR THE TEACHER**Contents**

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1.0 Introduction

The great capacity of human beings to adapt to changes in their environment amazes every one of us. Human beings have immense capacity to change behaviour to suit their purpose. Psychology, as a subject of study, is the product of the search to unravel what makes human beings different from other animals.

This unit will introduce you to the study of psychology. We will discuss the meaning of psychology as a science, and the different branches of psychology. We will discuss the various domains of human behaviour, and the techniques of studying human behaviour. Finally, we will discuss why educational psychology is a foundational course for teacher education.

2.0 Objectives

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

- describe psychology as a scientific study;
- outline the major schools of psychology;
- list, with examples, the different domains of human behavior; and
- examine the contribution of psychology to teacher education.

3.0 Main Content

3.1 Psychology as a Science

Science is a method of study. It is not on itself a body of knowledge. This method of study has unique characteristics. It is systematic. This means that it follows a definite procedure for gathering information.

The method of science is logical. That is, it has a sequence for presenting facts and figures. It is verifiable. It is verifiable because data obtained do not depend on the peculiar character of the person collecting the data. What this in effect means is that human factors and biases are excluded, as much as possible, from the report. Finally, it is replicable. Anyone can follow the procedure outlined and systematically arrive at the same results.

Psychology is described as a science. It is a scientific study of human behaviour. It is a scientific study because it follows the scientific method of study in gathering information. The scientific method is characterised by the following distinct steps:

1. **Problem:** A problem is sensed and questions are raised.
2. **Hypothesis:** A hypothesis is stated. Hypothesis is a tentative answer to the question.
3. **Data:** Relevant information is gathered. This information is used to test the hypothesis.
4. **Data Analysis:** Data gathered are collated and analysed in relation to the hypothesis.
5. **Conclusion:** Conclusion is drawn from the results of analysis of data.

For easy reference, we put these steps in a graphic format as follows:

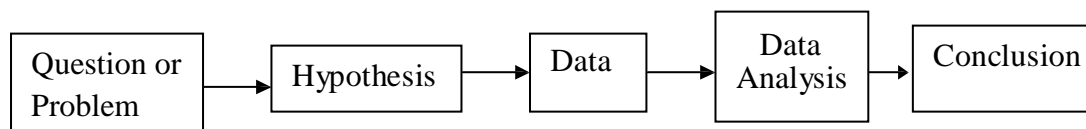


Figure 1.1: Adapted from Muzi (2000), p.24

A meaningful study of human behaviour is based on principles agreed on by the scientific community. The outcome of such a study must be supported by evidence. The evidence must be personal opinions or coincidence. Four criteria serve as acid test for a meaningful study of human behaviour. These are outlined below:

(a) Objectivity

By objectivity, we mean that the results of the study should not be affected by the biases or personal preconceptions of the persons carrying out the study. The researchers must not exaggerate data to support their preconceptions. They must not ignore relevant evidence that contradicts their hypothesis.

(b) Validity

Validity describes the soundness of any scientific study. This means that the study must measure what it sets out to measure. For example, a researcher who sets out to ascertain the average height of 12-year old boys and girls in a particular city, but goes ahead to use a weight measuring instrument to gather data and report findings in heights units will be reporting an invalid study. The researcher did not measure the attribute they set out to measure.

(c) Reliability

Reliability describes the stability and consistency of measures obtained in a study. This means that, for a study to be reliable, other workers should, using the same measuring instrument and procedure for gathering data, arrive at the same conclusions. For example, a battery of intelligence test administered to the same child by two or more researchers should produce the same or similar scores.

(d) Replicability

A study is replicable if different researchers, using similar techniques and similar subjects arrive at similar results and conclusions.

In addition to the criteria specified above, if you are designing a research project, you must be careful to work with a representative sample. A sample is representative if it is drawn randomly from the same population of subjects. This implies that the subjects of the study must be typical of the kinds of people the researcher seeks to study. For instance, a study on the effects of television viewing on children's cognitive abilities might yield different conclusions depending on the age group or socioeconomic background of the subjects sampled for the study.

You must consider these basic criteria no matter what research technique you have selected. Be it a naturalistic observational study or a controlled experimental study, these basic criteria must be respected.

3.2 Domains of Human Behaviour

Psychology is described as the science of human behaviour. Behaviour is here used to describe a general concept which covers a wide range of human activities. Some human activities are directly observable. If behaviour can be directly observed, it is said to be an overt behaviour.

We may cite some examples of overt behaviour. Eye blink, muscle flex are observable. They are overt behaviour. Also, facial contortion and laughter are observable. Pounding *fufu*, driving a car, writing on the sheet of paper is all observable. They are overt behaviours. They manifest and we see them.

Some human activities, on the other hand, may not be directly observable. If you cannot directly observe behaviour, you describe it as covert behaviour. A covert behaviour can only be inferred from other observations.

Examples of covert behaviour include: thinking, reflection, insight, conceptualisation, problem-solving. We can only infer these behaviours from some other body signs or activities of the individual engaged in the covert behaviour.

Human behaviour may be classified into one of three main domains. These domains are cognitive domain, psychomotor domain, and affective domain. We discuss each in more detail.

1. The Cognitive Domain

Human activities or behaviours are classified under cognitive domain if they generally, knowledge as a cognitive object. They may be concrete or abstract knowledge. We may cite some examples.

Your teacher has taught you that Umaru Musa Yar'Adua is the Executive President of Nigeria and you can recollect this knowledge in the cognitive domain. It is still possible for the teacher to show you the picture of the President of Nigeria; so when you see Umaru Musa Yar'Adua in reality you recognise him. That knowledge is concrete knowledge in the cognitive domain.

Again, you are taught that the outer space is a void. The outer space contains no atmosphere. You are able to recall that knowledge. You have the knowledge as a cognitive object. It is not possible to take a real picture of the void of the outer space. Void does not exist as a sensory experience. It can only be conceptualised, not recognised. Voidance cannot be seen. The knowledge that the outer space is void is an abstract knowledge in the cognitive domain.

2. The Psychomotor Domain

Human activities or behaviours are classified under the psychomotor domain if they generally reflect production of skills. Skill production involves manual control using fine motor actions. We may cite examples of behaviour at the psychomotor domain.

Driving a motor vehicle is an activity in the psychomotor domain. So is typing on a computer keyboard.

You should take note that when learning objectives are stated on the psychomotor domain, the instruction must specify the procedure the learner must adopt to reproduce the required

skill. There is no tell-tale instruction for skill acquisition. The learner must be seen to have reproduced the psychomotor activity or skill.

3. The Affective Domain

Human behaviour is classified under the affective domain if it generally reflects emotions, attitude change, and development of interest or aversion. Such behaviours usually signal a latitude change in affections. We may cite some examples.

Suppose you did not like children before you undergo the course: 'childhood and adolescent psychology'. You come to appreciate children after the course. During your spare time, you take a walk voluntarily, without any promptings, to a neighbourhood children's playground, you unconsciously begin to enjoy the children and their activities. This attitude change is behaviour in the affective domain.

Take another example: You are known to be abrasive to other ethnic groups in Nigeria. Your brother brings home from his youth service an Igbo lady for a wife. You complain and fuss. You openly show your dislike for the lady. All the same, the lady lives with your family. You discover what a nice lady she is. You begin to appreciate her and even her other Igbo relations. You have experienced an attitude change. That change in attitude is behaviour in the affective domain. Emotions are involved. You can cite other examples involving development of aversion or even fear or empathy.

You should note that human behaviour is very complex. Behaviour may involve all three domains simultaneously. It may be difficult to strictly classify such behaviour belonging to the cognitive domain or psychomotor or affective domain.

For example, the behaviour of a motor vehicle driver who swerves into a gutter to avoid running over a small child who suddenly jumped onto the road involves more than one domain. There is the cognitive calculation of the speed and the distance of the approaching car from the child. There is the affective consideration that a human life is at great risk. There is the psychomotor skill in promptly swerving the car out of the obstacle on the road. Clearly, all the three domains come into play in that single behaviour. Therefore, the classification scheme is for easy conceptualisation and understanding of behaviours.

3.3 Schools of Psychology

There are several schools of psychology. A school of psychology refers to a perspective, a view, or an interpretation of human behaviour from a standpoint. Different psychologists have interpreted human behaviour from different standpoints. The standpoint of a psychologist determines what aspect of human behaviour they study; what techniques they employ; the nature of information gathered; and the interpretation of data.

Psychologists who share similar standpoints make up schools of psychology. A school of psychology has a specific viewpoint, uses a specific technique, and interprets behaviour from a known standpoint. We shall discuss three schools of psychology, namely: the psychoanalytic school, the behavioural school, and the cognitive developmental school.

1. The Psychoanalytic School

The father of psychoanalysis is Sigmund Freud. Freud (1965) proposed that the human mind was topographical and dynamic. By that, Freud means that there are provinces or divisions in the human or divisions in the human mind. These divisions are always moving and interrelating. According to Freud (1965), the divisions of the human mind may be conceived as three levels of consciousness. These levels are: the conscious mind, the preconscious mind, and the unconscious mind.

The conscious mind represents the part of the human mind where thoughts, feelings, ideas, and images that one is aware of reside. The preconscious mind refers to the part of the mind directly beneath the conscious mind. It is from the preconscious mind that thoughts and feelings are easily brought to human consciousness.

The unconscious mind refers to the part of the human mind that is out of awareness. Thoughts, ideas, feelings, and images that reside in the unconscious mind are hidden. It is here that human beings bury thoughts and feelings that cause them anxiety, guilt, fear, and other psychological discomforts, especially those that are the result of childhood conflicts.

The materials in the unconscious mind are buried deep. They are not easily accessible. They can be inferred or understood only through dreams, slips of the tongue, the jokes people tell, manner of dress, life choices, likes and dislikes, fantasies, and relationships with others.

Freud (1965) proposed that human personality was composed of three systems. These systems represent mental structures through which biological drives are mediated before they manifest as behaviour. These mental structures are: the id, the ego, and the superego.

The **id** represents Freudian personality structure that deals with basic instincts. The id is the seat of psychic energy and biological drives such as hunger, thirst, sex, self-preservation. The id relishes the pleasure principle. That is, it strives for the immediate gratification of drives and needs.

The **ego** is the Freudian part of personality that deals with reality. The ego is the rational part of the mind. It regulates the biddings of the id for immediate gratification of needs. It delays the gratification of demand of id to an appropriate opportunity. The ego relishes the reality principle. That is, it instructs the id to choose an appropriate or best time and manner for the discharge of psychic energy.

The **superego** is the Freudian personality structure i.e. the moral part of human personality. The superego incorporates the society's rules and values. It is the agent of the society. It is the voice of authority or the police of personality. It is the moral arm of the world and the values of one's culture. The superego mediates the biddings of the id, and the ego.

Note that the **id**, the **ego**, and the **superego** represent an organised whole. Personality is not made of distinct pieces. The three mental structures work together to produce one

personality type. All three levels of consciousness or awareness flow through them.

What is important is that the dynamics of personality will depend on the way that psychic energy is distributed among the id, the ego, and the superego. If energy is concentrated on the id, the individual will be uncontrolled and impulsive. The id controlled person will often find himself in trouble with the law.

If energy settled primarily in the ego, the individual's behaviour will be more realistic and socially appropriate. If the energy concentrates mainly with the superego, the individual's behaviour will tend toward the rigid and moralistic. Individuals with very powerful superego have difficulty living full and open lives. Superego persons cannot initiate changes in social structures. They are usually pro-establishment persons.

We shall not go into the details of Freud's psychosexual development. We will also not discuss Erik Erickson's psychosocial development here. However, the crux of the psychoanalytic school of psychology is that childhood experiences significantly impact adult behaviour. Predominantly pleasant childhood experiences lead to healthy adult personality. However, predominantly frustrating childhood experiences lead to difficulty with personality development. Individuals who have difficulty with their personality employ in adult life defense mechanisms to protect their weak ego.

2. The Behavioural School

The behavioural school of psychology was founded by John Watson. To the school, the theoretical goal of psychology was the prediction and control of behaviour. The school focuses on the effect of learning on human development. The psychologists in the behaviour school seek to find out how children modify their behaviour as a result of experience.

According to Watson (1930), experience is the root of human behaviour. What a child learns, that the child becomes. Watson (1926) posited that a stimulus is the environmental situation or an internal condition that causes activity in human beings. Behaviourists believe that the arrangement or events or stimuli in the environments determine the child's behaviour. In other words, children learn what they become from the events they encounter. Events in the environment generate consequences. These consequences as encountered by the child, determine their behaviour. What this means is that children are shaped by the environment in which they live. Therefore, the social environment of the child significantly impacts development and behaviour.

The behavioural school of psychology initiated the first scientific study of human behaviour. They studied how specific stimuli or events in the environment gave rise to specific observable behaviour. Behavioural psychologists maintained that all behaviours are observable, measurable, and therefore predictable.

3. The Cognitive Developmental School

The father of the cognitive developmental school of psychology is Jean Piaget. The school focuses on understanding how mental structures promote thinking, reasoning, and

purposeful or goal-directed behaviour. The psychologists in this school studied extensively how children come to know things.

The subject matter of study of the cognitive developmentalists is human cognition. Piaget (1926) was specifically interested in understanding how children come to use images, symbols, concepts and rules to construct a worldview.

The cognitive developmental school of psychology is so named because one basic proposition of the school is that as people grow, change, and develop, so do their thought processes. Cognitive psychologists posit that as human beings develop intellectually, they build schemes or patterns of behaviour and thinking. That is, individuals construct their own diagrams of the world. Therefore, people's mental schemes determine the way they interpret experience.

Infants have limited schemes of the world. Experience, maturation, and learning elaborate those schemes. By adulthood, schemes have become very complex, encompassing such abstract ideas as love, peace, democracy, and justice.

Self Assessment Exercise

Outline three schools of psychology that you know.

3.4 Relevance of Educational Psychology to Teacher Education

The study of educational psychology is important to the teacher trainee for many reasons. These reasons include the following:

- (i) The major function of the teacher is to guide growth, development, and learning. Therefore, the teacher needs a thorough understanding of the patterns and characteristics of human development and behaviour.
- (ii) Childhood and adolescent development gives the teacher trainee an opportunity to study the child from the early days of his life through adolescence. The patterns of growth, including times for rapid, slow, and rounding up of physical, intellectual, social and emotional development could be conceptualised in a short print span. The teacher trainee is thus in a position to identify what is normal or abnormal in any child's growth and development.
- (iii) There are a lot of individual differences in rate and timing of appearance or unfolding of the various aspects of the child's development. The study of educational psychology affords the teacher trainee a unique opportunity to understand individual differences in children.
- (iv) Hereditary and environmental factors interact intimately to produce observed behaviour of children. The study of child development gives the teacher trainee the opportunity to understand critical environmental factors that influence human growth and development.

- (v) The study of educational psychology empowers the teacher to be able to predict, and control human behaviour. This in essence aids the teacher in their primary assignment, which is to guide the child's development and learning.
- (vi) The study of educational psychology exposes the teacher to various theories that explain human learning, motivation, information processing and transfer of learning sets. When the teacher marries the theoretical knowledge with the knowledge of patterns and characteristics of growth and development at the different stages of child development, they are in a better position to select age appropriate educational experience for children.

4.0 Conclusion

Psychology is a very broad field of study. It is an exciting field of human endeavour. Studying psychology will make you to understand children's behavior. It will also give you a deep insight into your own behaviour.

The study of psychology will make you understand human behaviour better, so you will begin to better appreciate human relationships. You will begin to experience greater adjustment to the vagaries of human reasoning and living in a social environment.

5.0 Summary

- Psychology is defined as the study of human behaviour;
- The method psychologists adopt for gathering information is described as the scientific method;
- The characteristics of the scientific method include: objectivity, validity, reliability and replicability;
- Human behaviours are classified into three main domains, namely: the cognitive, the psychomotor, and the affective domains;
- Three main schools of psychology are: the psychoanalytic school, the behavioural school, and the cognitive developmental school;
- The study of educational psychology will empower the trainee teacher to be able to guide children's development and learning.

6.0 Tutor-Marked Assignment

1. Describe psychology as a science.
2. Outline the basic propositions of the psychoanalytic school of psychology.
3. Explain why educational psychology is a foundational course in teacher education.

7.0 References/Further Readings

Freud, S. (1965). *A General Introduction to Psychoanalysis*. (J. Riviere, Trans.) New York: Washington Square Press. (Original Work Published, 1920).

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UNIT 2 METHODS OF STUDYING CHILDREN**Contents**

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1.0 Introduction

Whenever a researcher wants to study children, there are a number of research methods that are available for data collection. It is the responsibility of the researcher to select the appropriate methods to use. This unit introduces you to some of the more readily available research methods for studying the child. The major strengths and weaknesses of each of the methods are described.

2.0 Objectives

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

- describe each of the following methods that are commonly used in child study: naturalistic observation, self-report techniques, case study or history, longitudinal method, cross-sectional method, and experimental method;
- state the major strengths of each of the methods listed above;
- list the major pitfalls of each of the methods listed above; and
- identify three ethical considerations in child studies.

3.0 Main Content**3.1 Naturalistic Observation**

Naturalistic observation is a form of research in which the scientist *observes* and *records* the behaviour and interaction of people being studied in a specific setting. Usually, the setting is the natural place the subjects would normally be found. Examples of such a setting include school, hospital, home, shopping centres or market place. The researcher does not manipulate the subjects or the environment. If one wants to study a 2-week old baby, the natural setting is the home. If one is studying play activities in children, the natural setting is the play ground.

The *limitations* of naturalistic observation include the following:

In the first place, it is difficult to replicate a study as no two settings can be exactly the same. Secondly, naturalistic observation only records observed behaviours; it does not explain the cause of the behaviour.

Naturalistic observation is, however, very useful in studying new born babies and in studies of people from different cultural backgrounds, in which case the researcher would have to live among them.

3.2 Self Reports

Self report is a research method that allows the researcher access to the thoughts, feelings and opinions of the persons being studied. In self report, the researcher asks direct questions from the subject about his thoughts, feelings, opinions or other behaviour, such as sexual behaviour.

Techniques employed in self report include *interviews*, and *questionnaires*. Interviews are conducted in person. For example, if one applies for a job, one would be interviewed in person. One would answer direct questions about themselves and their experiences. Interview is a very powerful research technique for accessing very intimate experiences.

A questionnaire can be distributed anonymously. That is, the researcher need not see the subject in person. The questionnaire can be mailed to respondents or subjects. The questionnaire technique is particularly useful when the number of subjects is large. It is less expensive to execute than the interview.

Self report, however, has a major limitation. Subjects tend to fake their responses. That is, subjects tend to give responses they believe are acceptable or pleasing to the researcher.

This drawback affects both the interview and the questionnaire. It is generally called the *social desirability factor*.

3.3 Case Study or Case History

A *case study* is a study of one person or one entity. It studies one person in great depth. Case study or case history is very useful in reviewing or reconstructing an individual's history.

The major drawback of case study is that its findings are not generalisable to other individuals. The study cannot be replicated.

3.4 The Longitudinal Method

The *longitudinal method* focuses on a group of people and studies them over an extended period. Usually, the longitudinal method examines the same individuals at intervals in their lives. In this way, changes that occur throughout the course of development can be

gleaned. The longitudinal method is very useful in investigating trends in cognitive, physical or language development. Because the longitudinal method focuses on the same individual for an extended period of time, peaks, spots and leveling can be identified in the course of development from one stage to another.

Longitudinal studies are however, very expensive. They are time-consuming to conduct. They are also difficult to replicate. The attrition rate is high; that is many participants may drop out because of death, relocation or loss of interest in the study.

3.5 The Cross-Sectional Method

In the *cross-sectional method*, subjects of different age groups are examined at one point in time. For example, a study of moral judgment among children using a cross-sectional method may sample children aged 3 – 20 years at the same point in time. The sample may be representative of pre-school children (3 – 6 years), children in middle childhood (6 – 12 years), and adolescent children (12 – 20 years).

The cross-sectional method has some advantages. It takes a short time to complete. It does not cost much.

One major drawback of the cross-sectional method of studying the child is that it is prone to *cohort effect*. Cohort effect describes the impact of natural disasters such as flood or accidents of history, e.g. wars could have on people living in a particular place at a particular time in history.

The impact of such disasters or accidents will be specific to people living in that area. Hence, comparing the 3-year old, the 6-year old, and the 12-year old today presupposes that the 3-year old will be like the 12-year old in 9 years' time. Of course, this pattern may not occur for many reasons relating to history and events. Therefore, the findings from a cross-sectional study have to be generalised with caution.

3.6 The Experimental Method

The *experimental method* is a powerful tool for obtaining information in research. It is usually employed to establish a cause-and-effect relationship. The experimental method has some distinct factors which are:

It involves *hypothesis testing*; it involves *manipulation* of events, and *control* of some events; it begins with a *random sample*; there is the *experimental* group; there is also the *control* group; there is the *independent variable*; and there is the *dependent variable*.

A *random sample* is a group of subjects chosen at random from the population to be studied. The *experimental group* is the group of subjects that the researcher manipulates. The *control groups* are subjects similar to those in the experimental group in all respects except that they are not manipulated by the researcher.

The event that is manipulated by the researcher in an experiment is the *independent variable*. The characteristics in an experiment that change owing to the manipulation of

the independent variable make up the *dependent variable*.

The major strength of the experimental method is that it reveals cause- and-effect relationship. The method also lends itself to replication. This means that the findings from an experimental research can be *verified* by other researchers.

The major limitation of the experimental method is that the laboratory conditions may be artificial and not obtainable in real life situations.

NOTE:

Using children for research studies has some hazards. Some persons have objected to the idea of using human beings as guinea-pigs. Using children as experimental animals has practical and moral implications. The questions that have been raised over using children or studies include the following:

1. Is it proper to intrude into anybody's private life?
2. Is it proper to manipulate the environment of children, perhaps by withholding some experiences from a control group?
3. What would be the effect of depriving some children food or medication that they require?
4. Would studies of children not result in labeling some as abnormal?
5. Is it morally right to interfere with God's own design of children?
6. What ethical standards should be followed when studying human beings?

In an attempt to address some of these issues, the American Psychological Association (APA) (1990) and the Society for Research in Child Development (1996) have outlined codes of ethics for psychology researchers. Therefore, you are expected to follow the ethical guidelines outlined below in any research involving children:

- (a) **Respect for Individuals.** This means that you must obtain the consent of children and parents or guardians of children to be used for any study.
- (b) **Respect the Principle of Beneficence.** This means that you must ensure that children are not harmed physically or psychologically by your experiment.
- (c) **Obey the Principle of Justice.** You must give principled consideration for who should not participate in the experiment. The benefits derivable from the experiment by the participants should be explained.
- (d) **Respect the Principle of Confidentiality.** This means that you must ensure that all information gathered about the children used in your study are kept strictly confidential. Individual children participating in your experiment must never be identified or singled out by their names.

4.0 Conclusion

Every teacher is a scientist. As you deal with children, you strive to understand them. This means that you study them. You need to be more objective in your study of children. Therefore, you are expected to internalise and select for use appropriate methods whenever you must study any aspect of children's development, learning or behaviour.

5.0 Summary

This unit explains the methods that are commonly used in child study (naturalistic observation, self report techniques, case study or history, longitudinal method, cross-sectional method and experimental method).

It also explains the major strengths and weaknesses of each of the methods. Also, we identified three considerations in child studies.

6.0 Tutor-Marked Assignment

1. Outline any four methods of studying the child.
2.
 - (a) In what ways are experiments preferable to other research methods?
 - (b) In what ways are other research methods preferable to experiment?
3. Outline the major ethical guidelines a researcher must follow in carrying out research with children

7.0 References/Further Readings

American Psychological Association (APA) (1990). *Ethical Principles of Psychologists*. Washington, DC: Author.

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UNIT 3 BASIC CONCEPTS IN CHILD DEVELOPMENT**Contents**

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1.0 Introduction

In this study of child development, some concepts keep recurring. They appear more frequently. These are basic concepts. The basic concepts in child development are concepts that help explain changes in children's behaviour that go with ageing.

In this unit, we introduce you to some of the basic concepts used in child development studies. They include: growth, maturation, learning, development, perception and motivation. You are advised to study and understand the meaning of these concepts, and their appropriate usage. These concepts will help you to understand the contents of the other units in this course.

2.0 Objectives

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

- explain the following concepts:
 - (a) growth, (b) maturation, (c) learning
- outline the principles of development
- explain how the various sensory modalities aid perception
- examine three views on motivation offered by three schools of psychology.

3.0 Main Content**3.1 Human Growth**

Human growth describes increases in magnitude of body parts, organs, and systems. Growth involves changes in size, height, gait, or number. Cell division is growth – it

involves increase in number. The body skeleton increases in length, and density. This is growth. The body muscles increase in gait and mass. This is also growth.

Growth is one major characteristic that differentiates living systems from non-living things. It describes the metabolic changes by which a child increases in size and changes in shape. Several factors influence growth changes.

Height, for example, is primarily a biological process influenced by genes. Genes direct the neural and hormonal activities that propel growth. Deficits in human growth hormone lead to stunted growth. Hyper-functioning of the human growth hormone may lead to abnormal height. Other environmental related factors include: malnutrition, teratogens, and severe psychological stress (Muzi, 2000). These factors will be discussed in more detail under physical development.

3.2 Maturation

Maturation is the unfolding of the child's biological potential. The timing and the sequence of the unfolding of these biological potentials are pre-wired genetically. For an illustration, practicing reading with a child will not make the child read until the brain cells that control reading ability are mature enough to respond to such training. The body will not hold the neck erect or upright if the controlling muscles are not maturationally ready. The baby will not stand and walk erect if the muscles of the limbs are not maturationally ready. Maturation, therefore, refers to readiness or the point at which a child is biologically prepared to undertake a *specific task*.

It should be noted that it is the process of maturation that limits the time or age at which a child speaks, forms letters of the alphabet, understands relational concepts or propositional logic. In general, maturation prepares the child to undertake and benefit from any specific activity. Whether or not the child actually understands that specific activity will, to a large extent, depend on exposure or experience.

3.3 Learning

Learning means *changes in behaviour due to experience and practice*. Changes in behaviour that qualify as learning have to be *relatively permanent changes*. This means that the change in behaviour should not be explained by temporary states in the child, such as fatigue, illness, or drug effect, and maturation or instinct.

Changes in behaviour may be *observable*, in which case, they are said to be *overt*. Examples of overt behaviour include changes in muscular dexterity. A child who could not write with a pencil now holds the pencil properly and writes some letters; or a child learns a new dancing step; or a child traps the football without losing its control to an opponent.

Changes in behaviour may also be *unobservable*, in which case they are said to be *covert*. Covert behaviours are discernible from other activities. Examples include: change in attitude to other ethnic nationalities, implied from accepting relationships with such other

ethnic nationalities; development or change of insight that is, seeing meaning in a relationship that was not obvious before.

Learning manifests in modification of behaviour. Learning is the major reason why human beings are not stupid all the time. Learning makes it possible for a child to transfer the benefit of one experience to other situations. In this way, human behaviour is said to be adaptive.

3.4 Development

Development describes *progressive sequence of changes* in structure and organisation of body systems. Development involves changes in the *ability* of the organism to *function at a higher level*. The main attribute of development is that the changes are *qualitative* and result in *increased functionality*. Increases in motor skills, which permit the child to achieve higher level of proficiency in any particular game, signal development. In more specific terms, a child who earlier cried when thirsty now says “mummy, water”. This is development. A child, who earlier was crawling, suddenly stands up and takes one or two hasty steps. This is development. When a child gains voluntary control of the muscles of the bladder such that they can empty the bladder contents at will, development has taken place.

Usually, development involves a complex interaction between maturation and learning. Maturation itself involves growth. Therefore, development is usually regarded as the *product of growth, maturation and learning*. Development occurs at all the facets of human functions and behaviour. That is development could be at the physical, cognitive, emotional, social, or language dimensions of human functioning.

3.4.1 Principles of Human Development

The *principles* that explain *human development* include: developmental direction, continuity and sequence, individual differences.

Developmental Direction

The principle of *developmental direction* states that development follows a *predictable direction*. Development, for example, starts from *head* and proceeds towards the *toes*. This is the *cephalocaudal law*. At birth, the human head is the most mature part of the body. All the brain cells are there at birth. The head weighs more than the rest of the body. The baby gains control of the muscles of the neck before that of the chest. The baby also gains control of the chest before the waist, the arms and the limbs. There is a direction.

Development also proceeds from the centre to the *periphery*. This is the *proximodistal law*. The internal organs at the centre of the body – the heart, the lungs, the liver reach their adult size before the arms and the legs. The extremities mature last.

Continuity and Sequence

Development continues in a *predicable order* until maturity is attained. This is not to say that there is a direct proportional increase in all aspects of development with

corresponding increases in age. Development is *characterised by spurts* peaks, and plateaux. However, continuity implies that development does not get arrested or reversed unless something is biogenetically wrong. A characteristic sequence is followed by all children. The child sits before crawling. The child crawls before standing, and walks before running.

Individual Differences

The time of onset, and the rate of appearance of different aspects of human development vary enormously from one child to another. This is the principle of individual differences. The genetic blueprint differs for every individual.

For example, one child may get the first set of teeth at seven months while the other child gets the first set of teeth at 12 months. One child may stand and take the first steps at 10 months, while the next child stands at 24 months. Though the time table may differ, all children will attain the goal of development ultimately if the environment is cooperative.

3.5 Perception

Human beings identify things by sight, smell, and sound. They detect if they have body contact with another object. They detect changes in temperature and pressure. They experience pain and cold. People are able to learn and know things because they have senses. They use their sensory modalities to pick sensations from the environment, and thereby learn and know things.

The major sensory modalities are vision, hearing, touch, smell, and taste. We elaborate briefly on each of these sensory modalities.

- **The Sense of Vision**

Vision is the most important of all human senses. It is estimated that about 80 percent of human sensory information is obtained through vision (Muzi, 2000). The main organ of vision is the eye.

The eye receives light energy reflected as light rays from objects. The light energy is transformed to nervous impulses and transmitted to the brain. The brain interprets these impulses as vision. So you are able to see objects and events.

- **The Sense of Hearing**

Hearing is a significant source of sensory information. It connects the individual with other people, and enables one to communicate. The main organ of hearing is the ear.

The ear collects sound energy in form of waves from various sources. It transforms these different sound waves to corresponding nervous impulses. These impulses are carried to the hearing centre of the brain. The brain interprets the nervous impulses as sound. So you

are able to hear and differentiate different sounds.

Hearing is very important for children learning speech. Children who are congenitally deaf also become mute or dumb. They are unable to benefit from hearing their own vocalisation. It is the reinforcement children obtain from hearing their own voices that reinforces and engender speech development.

- **The Sense of Smell**

Smell describes the emission of a gaseous chemical, which irritates or is obnoxious, from a substance. The obnoxious chemical stimulates the olfactory nerves. The nerves send impulses to the olfactory centre of the brain. The brain interprets the tickling of this chemical as smell. So you are able to detect smell of different kinds.

- **The Sense of Touch**

Touch is a very important sense which people use to explore the world. It is through touch that people learn about the texture of different substances. Touch also informs the individual about changes in pressure and temperature. The main organ of touch is the skin.

Nerve endings on the skin surface are sensitive to changes in pressure and temperature. The nerve endings transmit message about pressure and temperature changes to the brain. The brain interprets the message as touch, pain, cold or hot. So you are able to experience.

- **The Sense of Taste**

The sense of taste is innate. However, there is some evidence (Crook, 1987), that some aspects of taste may have been learned pre-natally. For example, most people savour the sweet taste. The uterine fluid is sweet, so people may have learned to prefer sweet because of their uterine experience.

The main organ of taste is the tongue. Taste buds are contained in the tongue. The taste buds contain nerve endings that are sensitive to the primary aspects of taste, namely: salt, sour, sweet, and bitter. These primary tastes describe the variations in alkalinity of different substances in solution.

Nerve endings in the taste buds transmit message about the alkalinity of the substance in contact with the tongue to the brain. The brain interprets the message as salty, sour, sweet, or bitter. So you are able to detect the taste of different substances.

Perception describes brain interpretation of sensory experiences. It is the brain's way of organising and making sense of the world. Perception includes, therefore, all the ways an individual has of getting to know their environment.

Without the ability to perceive changes in the environment, human behaviour would be stupid. Imagine plunging your hand into a pot of boiling water, and not being able to

detect temperature change. Imagine yourself being hit by a moving lorry, and you are unable to detect pain. Perhaps you are crossing a busy road, and you are unable to detect oncoming vehicle. If your senses for perception did not inform you about these changes in your environment, you would be a dead person. Indeed, without perceptual abilities, your environment would definitely overwhelm you.

3.6 Motivation

Motivation describes the internal processes that energise, direct and sustain behaviour. Motivated behaviour has some characteristics. The person involved exhibits a high level of ego-involvement. That is, the behaviour is energised. The person involved shows a significant level of perseverance. In other words, the behaviour is sustained for a reasonable length of time. The individual who is engaged in motivated behaviour does not relent until the goal is attained. Motivated behaviour is purposive or goal-directed (Santrunte, 2004).

Motivation is that condition in you that makes you to keep going, even under extreme frustrations. It is that thing that makes you keep trying when you fail. Motivation keeps your spirit high even when the task is obviously difficult and hurting.

Children's behaviour in the classroom explains why they are behaving in a particular way. It indicates the extent to which their behaviour is energised, directed and sustained. If children do not complete an assignment because they are bored, lack of motivation is involved. If children encounter challenges in performing a task, but persist and achieve results, motivation is involved.

What is it that motivates children? This question has been answered differently by different schools of psychologists. We consider briefly three of these schools.

1. The Behavioural Perspective

Behavioural psychologists state that external rewards and punishment determine children's motivation. According to this school of thought, children's behaviour is motivated by incentives. Incentives add interest, excitement and direct children's attention to appropriate behaviour (Emmer, Evertson, Clements, and Wersham, 2000). This means that motivation is controlled by extrinsic factors – factors outside the individual.

We may cite examples of the kinds of incentives that teachers frequently use. They include the following:

- **Scores and Grades** – Teachers place a numerical score or a letter grade on a child's work. This provides a feedback to the child about the quality of his/her work.
- **Recognition** – Teachers display quality work, produced by a child in a corner of the classroom. Classmates and visitors admire such work. Teachers give certificate of achievement to a child who excelled. Teachers also place an exceptional child

on the honours roll. All these are tokens of recognition.

- **Privileges** – Teachers give outstanding children special privileges such as extra time during recess, exemption from sweeping the classroom or doing manual labour, extra time in the computer room, a field trip to a resource centre, or even a party ticket.

2. The Humanistic Perspective

The humanistic perspective holds that children have capacity for personal growth. Psychologists in this school of thought stress that personal growth is engendered when personal needs are satisfied. Abraham Maslow is the chief proponent of this school of thought.

According to Maslow (1954, 1971), the needs of children can be arranged in levels of energy, or what he called hierarchy of needs. The hierarchy of needs is arranged in a sequence of the most basic need to the highest order needs.

According to Maslow's hierarchy of needs, children's needs must be satisfied in the following sequence:

- (i) **Physiological Need** – This includes the need for food, water, sleep or rest, shelter.
- (ii) **Safety Need** – This includes the need for protection from physical or psychological harm, such as protection from ritual killers, kidnappers, child trafficking, child abuse, armed robbers, domestic violence, and road hazards.
- (iii) **Love and Belongingness Need** – This includes the need for affection, contact comfort, company, affiliation and attention.
- (iv) **Esteem Need** – This includes the need for recognition, feeling good about oneself, feeling liked and likeable.
- (v) **Self Actualisation Need** – This includes the need for achievement, accomplishment, excellence, competence, and actualisation of one's potential.

In Maslow's hierarchy of needs, the first four needs [(i) – (iv)] listed here are basic needs. They are referred to as safety needs. The last listed, self-actualisation, is a higher order or growth need. Children must satisfy their basic or safety needs before the higher need or growth needs appear.

Most school work have centre on academic achievement. Academic achievement is a higher need – need for self-actualisation. When safety needs are deprived, they hamper growth or higher needs or self- actualisation need.

The hierarchy of needs have implication for children's education. A hungry child or a worn out child will not concentrate on the mathematics lesson. The child will be preoccupied with how to satisfy the hunger or rest need.

A child who is under constant threat at home, in school, or in the community cannot

effectively benefit from school work. A child who is rejected by parents or peers, who is shown little affection will do badly in their school work. A fearful child will show very little creativity in an assigned task. Such children play it safe. Children who are preoccupied by safety needs show little progress in school work. Teachers must ensure that basic needs of children are reasonably satisfied to pave the way for growth needs.

3. The Cognitive Perspective

According to the cognitive perspective on motivation, children's thoughts, goals and purposes determine their motivation. To the psychologists in this perspective, human behaviour is purposive. This means that the goal or the target you have set for yourself determines the level of motivation that will propel you to attain the given target.

The implication is that children have internal motivation to achieve. Their behaviour is not controlled by external pressures or external incentives. Therefore, children should be given adequate opportunities and responsibilities to control their own achievement outcomes. The main duty of the teacher is to help children select important, realistic, and achievable goals. The teacher should encourage children to plan out their work with specific time schedule. The teacher is to help monitor progress toward goal attainment.

Self Assessment Exercise

Explain the following concepts: maturation, perception, motivation.

4.0 Conclusion

The concepts outlined in this unit are very tangential to this course. They are expected to prime you for the real meal that is to follow. Keep them at your finger tips and you will enjoy the entire course.

5.0 Summary

This unit examines the concepts of growth, maturation, and learning. It also looks at the principles of development and how the various sensory modalities aid perception. Finally, we examined three views on motivation offered by three schools of psychology.

6.0 Tutor-Marked Assignment

1. State the differences between the following pairs of concepts:
 - (a) Growth and development; (b) Maturation and learning.
2. Explain how the various sensory modalities aid perception.
3. Discuss the meaning of motivation, taking into consideration the behavioural, humanistic, and cognitive perspectives on motivation.

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UNIT 4 BIOLOGICAL BASIS OF HUMAN BEHAVIOUR**Contents**

- 1.0 Introduction
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1.0 Introduction

A major problem that bothered early scientists and psychologists was why one child in a family would have brown eyes while the other child has blue eyes. Psychologists wondered how individuals acquired their unique physical structures and traits. The answer to the question relates to the biological make up of the human beings. A person's heredity determines their unique characteristics. In this unit, we shall consider genetic transmission. We will discuss genetic abnormalities. We will also discuss the contributions of the nervous system and the endocrine system to human behaviour.

2.0 Objectives

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

- outline how genetic materials are transmitted from parents to offspring;
- explain how the nervous system contributes to differences in human behavior; and
- discuss the role of the endocrine system in determining human behaviour.

3.0 Main Content**3.1 Heredity**

Heredity will be discussed under the following sub-topics:

3.1.1 Gene Operations

The basic unit of human life is the cell. Groups of cells organise to form different structures such as organs, muscles, tissues. Every cell has a nucleus. The nucleus contains 46 chromosomes arranged in 23 pairs. However, the reproductive cells contain

23 units of chromosomes.

Chromosomes are thread-like molecules of Deoxyribonucleic acid (DNA). The DNA carries the genetic instruction.

One of each pair of the 23 pairs of chromosomes in each human cell is from the father, and the other from the mother. These chromosomes carry coded instructions called genes. The gene is the basic unit of heredity, or genetic blueprint.

During reproduction, each parent contributes 23 units of chromosomes. When the sperm cell fertilises the ovum, the chromosomes from both parents pair up. They make 23 pairs, reproducing the human cell. A new life begins.

3.1.2 Trait Transmission

Trait transmission is a process by which definite structures or genes are transmitted from parents to offspring. The gene for any specific trait is transmitted in pairs of alternate states called *gene alleles*. Genes operate either *dominantly* or *recessively*.

When opposing or alternate characteristics, such as brown and blue eye colour, are transmitted through genes, one overrides the other and becomes the trait evidenced. The trait evidenced is said to be operating *dominantly*. This means that its features are observed in the physical appearance of the individual.

In the specific example of brown and blue eye colour, when brown and blue gene alleles pair to determine eye colour, brown overrides blue. The eye colour of the individual is observed to be brown. The brown trait is dominant over blue. However, this same child with brown eyes carries the genes for the blue eye, hidden in the genetic makeup.

The blue eye trait cited here is swamped or hidden. It is a lot less potent than the brown eye trait. The blue eye trait here is said to be operating *recessively*. In a nutshell, a *dominant trait* is a trait transmitted through genes that override an opposing trait. It is expressed in the physical features. A *recessive trait* is a trait transmitted through genes that is less potent than an opposing trait. It, therefore, remains hidden or unexpressed.

When an individual has a pair of *identical gene alleles* determining a trait, the individual is said to be *homozygous* for that trait. However, when a trait is determined by a pair of *dissimilar gene alleles*, the individual is said to be *heterozygous* for the trait.

Note that a dominant trait is only dominant when in a heterozygous condition. And a recessive trait is equally recessive only in a heterozygous condition. It holds therefore that in a homozygous condition, a recessive trait will express itself; there being no potent trait swamping or overriding it.

The features of a recessive trait appear in the observed physical appearance of the individual when the recessive trait is in the homozygous condition. The *sickler* is an example where a recessive blood trait is in a homozygous condition. The carrier of the *sickle cell anemia* is an example of a pair of gene alleles determining a trait being in a

heterozygous condition. The carrier has the trait hidden but does not manifest the sickness.

In the examples cited here, the brown-eyed child, and the sickler are examples of outward appearance, or observable manifestation of inherited traits. The *brownness* or *sickliness* indicates the way genes express themselves in the structure of the individual. Such outward expression of inherited traits is known as phenotype. However, behind the outward appearance is the actual *genetic composition* or *genetic constitution*. This is known as the genotype.

Note that the phenotype may not reflect the underlying genetic structure or the genotype as is the case with the brown-eyed child and the carrier of the sickle cell anemia.

Note: Genes do not cause behaviour

It must be stressed that genes do not directly cause behaviour, thoughts, or emotions. Genes instruct the making of proteins and hormones. That is, genes instruct the making of chemicals that may make a child prone to behaving in certain ways, such as being anxious, impulsive, depressed. Take the emotion of anxiety as an example, the proteins and hormones produced by DNA carry messages between brain cells. Some of these messages deal with the response to dangers.

The chemicals in the brain cells that make individuals respond to dangers may be coded to make one person highly responsive to danger. This person is then easily anxiety-provoked. The same chemicals in the brain of another person may be coded to cause a low-level reaction to dangers. This individual then expresses less anxiety. Therefore, even when the environment presents the same danger to these two persons, their responses will be quite different. The same explanation goes for observed individual differences in most human behaviours.

3.1.3 Genetic Abnormalities

The *genetic code* of every individual may be likened to a computer *software program*. The software program tells the computer what to do. The genetic code is the child's personal *biological program*. This personal biological program is constructed from the software of both the father's and the mother's sides of the family. Like a software program, the biological program sometimes gets *hiccup* or goes *awry*.

As a result, a substantial number of children are born with *congenital defects* or *genetic abnormalities*. It is estimated that about five percent of infants are born with genetic abnormalities, and approximately three percent of newborns have birth defects (Plomin, De Fries, and McClearn, 1990). Some of these conditions can be serious and debilitating. Families can be deeply affected by the birth of a child with a genetic abnormality.

Some of the well known *genetic diseases* are caused by *dominant genes*. Some of the diseases are caused by *recessive genes*. Some are caused by *sex-linked genes*. Still some other genetic diseases are caused by *structural defects in chromosomes* (too many or too low chromosomes). Some of the more commonly genetic diseases are discussed here.

Sickle-cell Anemia

Sickle-cell anemia is transmitted through *recessive genes* from both parents. Both father and mother must have the sickle-cell disease trait in their genotype, either as carriers or sicklers, for their offspring to suffer sickle-cell anemia. The consequence of sickle-cell disease is a defect in the red blood cell structure. The red blood cells are, therefore, disabled and cannot effectively carry oxygen to body tissues and organs. Individuals with sickle-cell anemia have regular severe pain in their limbs and joints. They are also easily fatigued. In extreme cases, death occurs from heart or kidney failure due to oxygen shortage.

Hemophilia

Hemophilia is a blood disease transmitted through a *sex-linked recessive gene*. The disease is carried on the X-chromosome. Hemophilia is more prevalent in male children. The sex genotype of females is XX; that of males is XY pair. Thus, males lack the second X chromosome that can counteract the genetic information that produces the disorder.

The consequence of the disease, hemophilia, is inability of the blood to clot. This is why some call it the *bleeder's disease*.

Down Syndrome

Normal human beings have 46 chromosomes, arranged in 23 pairs. In Down Syndrome, individuals, there is an extra chromosome on the 21st pair of chromosomes. Thus, Down Syndrome is a disorder produced by the presence of one extra chromosome on the 21st pair, so there are three instead of two chromosomes.

The term *chromosome trisomy* has also been used to describe this situation. Down Syndrome has also been referred to as *mongolism*. It is an example of a genetic disease caused by a structural defect in chromosomes.

The consequence of Down Syndrome is mental retardation. Sometimes there is evidence of arrest in physical growth. Significantly greater number of Down Syndrome babies are born to mothers above 45 years of age. Very old fathers have also been cited as contributing significantly to the birth of Down Syndrome babies.

Turner's Syndrome

This is a genetic disease caused by *abnormal sex chromosomes*. It is found among females. The female has only one X chromosome instead of two. The genotype is expressed as XO. The consequence of Turner's Syndrome includes: lack of functioning ovaries; inability to develop secondary sex traits; short physical stature, and poor spatial perception. Heart problems are also common complications.

Klinefelter's Syndrome

Klinefelter's Syndrome is a genetic disease resulting from the presence of an extra X chromosome in the sex genotype. That is, the sex genotype is expressed as XXY. The disease is caused by *abnormal sex chromosome*.

The consequences of Klinefelter's Syndrome include: underdeveloped genitals-small testicles with no sperm; feminine appearance – enlarged breasts and high-pitched voice.

3.2 The Nervous System

The *nervous system* is made up of the brain, the *nerve cells* (the neurons), the *synapses*, and the *specialised sensory modalities*. The sensory modalities include the visual, the auditory, the olfactory, the tactile, and the taste organs. The feelings, the movements and the thoughts a child may experience are brought about by a complex network in the nervous system.

The infant is born with between 100 and 200 billion neurons or nerve cells. No new neurons are created after birth. The number the child is born with lasts them a lifetime. The amazing capabilities of the brain are achieved by increasingly more complex connections created between the neurons and a pruning down process of unused neurons. That is, neurons that do not become interconnected with other neurons, in the course of the child experiencing of the world, become unnecessary. The unused or unnecessary neurons eventually die out.

Thus, according to Kolb (1995), the development of the neurons system proceeds most effectively through the loss of cells, and not cell multiplication or division like other aspects of human growth.

The *sensory modalities* or sensory organs, the eye, the ear, the nose, the skin, and the tongue receive input information from the child's environment. The *sensory organs convert* the *stimulus* from the environment into *electrical activity* or *nerve impulses*. The *chemical substances* in the synapses and the neurons *transmit* nerve impulses to the brain; and from the brain to target organs.

Any child's *speed of reaction* to environmental stimulation will depend on the nature of the chemical substances that transmit messages in the nervous system. Genes instruct the making of chemical substances in the nervous system. In other words, genes determine any child's speed of reaction to environmental stimulation. Therefore, the efficiency of the functioning of the nervous system is genetically determined.

One can see how the malfunctioning of some of the sensory organs (for example, *long sightedness* and *short sightedness* of the visual organ) is attributed to genetic makeup. Malfunctioning of sensory organs leads to perceptual impairment. This has implications for the child's behaviour, school adjustment, and achievement.

3.3 The Endocrine System

The *endocrine system* consists of the *ductless glands*. These are glands that secrete chemical substances (*hormones* or *enzymes*) that regulate *body chemistry* and activities. Among the important ductless glands are:

The Pituitary Gland: The pituitary gland is also known as the *master gland*. It secretes the hormone that controls all other glands. Primarily, the pituitary gland secretes the growth hormone which regulates the physical growth of the body parts.

The Thyroid Gland: The thyroid gland secretes the hormone, *thyroxin*. This hormone is responsible for the control of food metabolism and the sensitivity of the nerves.

The Adrenal Gland: This gland secretes the hormone commonly known as the *emergency hormone*. This hormone controls the body systems that regulate the body's reactions to changes and danger signals.

The Pancreas: The pancreas secretes the hormone known as *bile*. This hormone regulates sugar metabolism and sugar levels in the tissues and the bloodstream.

The Gonads: For males, the gonad is the testes which produce the male gametes or male sex cells. For females, the gonad is the ovary. The ovary controls the maturation of the female sex cells or the ova. The gonads also regulate the development of secondary sexual characteristics.

Hyper-activity or hypo-activity of any of these glands will hamper body systems activities. Logically, therefore, malfunctioning of the endocrine system will hamper normal growth and development of the child. This will in turn hamper normal behaviour and adjustment.

It is the genes that instruct the making of the enzymes or hormones of the endocrine system. Therefore, the level of functioning of the endocrine system has a biological origin. The endocrine system contributes significantly to human behaviour.

Self-Assessment Exercise

Explain how genes determine behaviour.

4.0 Conclusion

Human traits are transmitted by genes. The operation of genes has consequences for the child's physical growth and behaviour. Genetic abnormalities can affect all facets of child development and learning.

Parents need counselling whenever they suspect that a child's abnormal growth or behaviour may have to do with gene operation. Your duty as a caregiver is to arrange the child's environment to enable the child realise their genetic potentialities.

5.0 Summary

This unit is about heredity. We examined how genes operate either dominantly or recessively. We discussed dominant genes in relation to how they express themselves both in the heterozygous and homozygous conditions. We described genotype and phenotype.

You must have learnt that genes do not cause behaviour but instruct chemicals that cause behaviour. We stated that genetic abnormalities are caused by damaged genes. Finally, we explained that genes direct the chemicals that regulate nervous system and endocrine system activities.

6.0 Tutor-Marked Assignment

1. Explain in details how traits are transmitted from parents to offspring.
2.
 - (a) Name any four genetic abnormalities.
 - (b) Explain how each affect human behaviour.

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UNIT 5 ENVIRONMENTAL BASIS OF HUMAN BEHAVIOUR

Contents

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1.0 Introduction

Two general factors determine human behaviour. They are heredity and environment. We discussed the factor of heredity and other biological aspects of heredity in Unit 4. Heredity provides the raw materials while the environment is the cook who prepares the actual menu.

The environment plays a crucial part in determining human behaviour. It interacts in a complex and intricate manner with hereditary forces to produce what manifests as human behaviour.

Environment is important for physical growth; it is important for development, and learning. To some extent, even maturation may be delayed if the environment is not cooperating.

In this unit, we discuss the various aspects of the child's environment that significantly impact on the child's growth, development, learning and behaviour.

The critical elements in the physical and logical environment will be outlined. We also discuss the psychosocial environment of the child.

2.0 Objectives

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

- describe the critical aspects of the physical environment of the child that impact on development and learning
- outline the various aspects of the child's psychosocial environment

- that contribute in determining behaviour
- discuss the importance of stimulating the environment for child growth and development.

3.0 Main Content

3.1 The Physical Environment

This is discussed under the following sub-topics.

3.1.1 Physical Experience

The physical environment of the child may be conceived as all the concrete animate and inanimate objects within the child's experiential reach. These are living things and the non-living things that the child can have direct acquaintance with.

Living things with which a child can have direct concrete experience include human beings – parents, siblings, peers, neighbors. They also include domestic and wild animals. Domestic animals may include cows, goats, dogs, chicken and other pet animals. Wild animals may include rats, monkeys, birds of the air, insects, and other pests; then plants.

Non-living things a child may have direct concrete experience with include food and feeding materials, clothing, toys, farm implements, radio and television, book materials, and others. There are also houses for different purposes, and places for different purposes.

Physical objects and persons in the child's environment are not important just because they are there either as accumulated property or just artifacts. Psychologically speaking, physical things in the child's environment are important to the extent that they engender growth and development. Physical things are important to growth and development if the child can access them and perform actions on them.

A child's actions on objects of experience may include: sucking, biting, chewing, feeling, cuddling, dismantling, assembling, and others. The child performs actions that help them discover their texture and uses.

The child, for example, learns that some objects are smooth, some are soft, some brittle, some coarse, some rattle, some are sweet, only by touching, feeling, shaking, or tasting them.

A mother is loving to the child because she is present for the child to hold and cuddle. She loves because she is present to produce the breast for the child to suck and get nourished. She loves also because the child can feel her soft body and get contact with comfort. It is difficult for any child to imagine an absentee mother who loves.

In essence, the physical environment of the child engenders growth and development by

acting as sources of sensory stimulation. Sensory stimulation for the child constitutes physical experience. Therefore, physical experience provides the basis for meaning, making of the child's complex world.

Physical experience provides the basis for the development and refinement of gross motor skills, and coordinated actions of the fine motor skills. The refinement of motor skills promotes the development of important life skills. Important life skills include self-care, reading and writing, creative arts, perceptual abilities, and cognitive functioning. You can now appreciate how physical experience contributes significantly to child growth and development.

3.1.2 Logical Experience

Logical experience is different from physical experience. Logical experience is not an object of physical acquaintance or sensory experience. It is a deduction or a logical necessity drawn from actions effected on the object of experience (Ngwoke and Eze, 2004). Logical experience is not an attribute of the object of experience.

We may illustrate a logical experience with an example. Suppose a child arranges ten counting beads, first in a row. The child counts up and obtains the number ten. The child then counts down and obtains again the number ten. Suppose this child rearranges the beads in a circle.

Marking a starting point, the child counts clockwise and obtains the number ten. The same child again counts the circular beads in the anti-clockwise direction. Again, the number ten is obtained. Finally, the child counts the beads into the container cup. Again, the number ten is obtained. The child discovers that whatever the arrangement or direction of counting the number of beads remained unaltered the number is ten

The discovery above is not an intrinsic property of the beads; neither is linear or circular order a property of beads. Number and order are properties arising from the actions performed by the child. They are deduced from the child's actions on the beads. In general, objects do not have sum or order.

The experience the child gained is a logical experience. Most derived quantities of physical objects such as speed, velocity, density, gravity are logical necessities arrived at through actions on those objects. The lessons embedded in home videos children watch are not explicitly observable in the movies. They are derivable from the plot or the theme. Some are thematically absurd, anyway. Social display rules states that children learning are also logical experiences. They are derived from actions of models.

In essence, logical experience arises from the child's actions or debate when confronted by a cognitive conflict. The development of insight is an example here. Logical experience is the basis for abstract reasoning and other forms of formal reasoning which you will learn in Unit 7 and Unit 15 of this course.

3.2 The Psychosocial Environment

This topic will be discussed under the following sub-topics:

3.2.1 The Family

The family is the first psychosocial environment the child encounters. Although the family is a small social unit comprising persons who usually have blood relations, the psychodynamics of the family system is complex. Every family has its own unique structure or configuration. What goes on in this structure impacts greatly on the child's development and behaviour. We outline briefly some of the critical elements in the family social structure that have implications for children's development.

- **Parenting Style**

Different parents have different parenting styles. Some parents use authoritarian parenting style. Authoritarian parents demand absolute respect from children. They insist that children must follow parents' directions. Authoritarian parents place firm limits and control on their children. They rarely tolerate verbal exchange from the children.

According to Santrut (2004), children of authoritarian parents often behave in socially incompetent ways. They lack initiative, and have poor communication skills.

There is authoritative parenting. Authoritative parents encourage children to be independent. However, they still place reasonable limits and control on children's actions. Verbal communication flows in both directions without inhibitions. Rules and regulations are explicitly explained and their values for all to understand. Children whose parents have authoritative tendencies are often competent socially. They tend to be self-reliant, and get along with peers and adults.

There is the neglectful parenting style. This is a parenting style in which the parents show virtually no involvement or commitment in the children's lives. Often times, neglectful parents do not know the whereabouts of their young children even in the night. Children of neglectful parents often behave in socially incompetent ways. They tend to have poor self-control and low achievement motivation.

There is also indulgent parenting. This is a parenting style in which parents are highly involved in the lives of their children. However, indulgent parents place few limits or restrictions on children's behaviour. Children do whatever they like and get away with it. Children from indulgent parents are often indolent. They are unable to control their own behaviour, and have poor social skills.

- **Changing Family Structure**

Increasing number of children are now being raised in divorced families, step-parent

families, and families in which the mother works outside the home, or families in which parents are working in different states. Divorce in particular, has become epidemic. A great number of children are living in single-parent families. Also, some children are living in families that are extremely poor. The effects of these factors on child development are not easy to determine. What is clear is that the impact negatively on growth and development.

3.2.2 Peers

Peers are children of about the same age or maturity. Peers play powerful roles in children's development. One of the most important functions of the peer group is to provide a source of information and comparison about the world outside the family.

According to Rubin (2000), good peer relationship is necessary for healthy development. Social isolation, resulting from peer rejection is drinking, violent crimes, and depression (Kupersmidt and Coie, 1990). Good peer relationships can enhance self-esteem, self-concept, and general well-being of children. All these are psychological traits that are linked with other indices of self-actualisation.

3.2.3 The School

Children spend many years as members of a small society called school. The school exerts a tremendous influence on children's socio-emotional development. Social contexts vary through pre-school or early childhood, elementary school or middle childhood, and secondary school or adolescence.

The early childhood school setting is a protected environment. The boundary usually is the classroom. Here children interact with one or two teachers. These teachers are very powerful authority figures in their lives. Peer interaction, at this age, is in dyads or very small groups.

In elementary school, the classroom remains the main social context. Children experience elementary school classroom as a more intimate social unit than is the case in pre-school classrooms. The teacher symbolises authority. The teacher establishes the climate of the classroom, the conditions of social interaction, and the nature of group functioning. The peer group becomes more significant in the lives of children than in the pre-school. Children begin to have close friends in the elementary school. Friendship relations help children to elaborate social and emotional skills.

As children move into the secondary school, the school environment increases in scope and complexity. The social field is now the entire school rather than the classroom. Now adolescents, children meet people from more diverse social and cultural backgrounds, and also more varying interests. The behaviour of the adolescent tilts more towards the adolescent standards and norms.

Note: The psychosocial environment of children is mutually interacting. As people impact their behaviour on children, the behaviour of children also impact on theirs. The consequence of this mutual interaction is what shapes children's development and

behaviour.

Social intercourse involves extensive use of complex language, thought and symbolic representations. Therefore, the impact of the psychosocial environment on development can be pervasive. Sometimes, the psychosocial dynamics may overshadow genetic endowments. The child for example, will not develop language if he lived isolated from a social language environment. Without language skills, intellectual, social and emotional will be hampered. What this means is that without adequate psychosocial environment, the development of the child's most basic life skills and social roles will be hampered. It is hoped that you, as a member of the child's psychosocial environment, will develop the awareness and sensitivity that fruitful social intercourse is a game of give-and-take.

4.0 Conclusion

You have been sensitised on the significant influence the environment has on child development and behaviour. Without a cooperating environment, the child's innate potentials cannot be realised. Since teachers and caregivers do not have control over genetic operation, it is hoped that they will maximise the factor of the environment which they have significant control over.

5.0 Summary

In this unit, you probably have learnt the critical aspects of the physical environment of the child that impact on development and learning. You also probably learnt the various aspects of the child's psychosocial environment that contribute in determining behaviour and the importance of a stimulating environment for child growth and development.

6.0 Tutor-Marked Assignment

1. Describe the impact of the physical environment in child development and behaviour.
2. Outline the various aspects of the psychosocial environment that contribute to child development and behaviour.

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MODULE 2 FACETS OF HUMAN DEVELOPMENT

Unit 1	Physical Development
Unit 2	Cognitive Development
Unit 3	Language Development
Unit 4	Emotional Development
Unit 5	Social Development
Unit 6	Moral Development

UNIT 1 PHYSICAL GROWTH AND MOTOR DEVELOPMENT

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1.0 Introduction

Physical growth and motor development begin immediately after conception, progresses through the pre-natal period, and continues to maturity at adolescence. Physical growth and motor development are important because they give every human being their size, poise, and dexterity. They are the basis of human locomotion.

In this unit, we discuss the meaning, trends, and factors that influence physical growth and motor development. We also discuss the educational significance.

2.0 OBJECTIVES

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

- explain the following terms/concepts:
(a) physical growth, (b) motor development
- outline the trend in physical growth
- discuss the developmental trend in motor development
- describe two major factors that influence physical growth and motor

- development
- examine the educational significance of physical growth and motor development.

3.0 MAIN CONTENT

3.1 Meaning of Physical Growth and Motor Development

Physical growth describes increases in body height, mass or weight, gait, and body size. The organs, tissues, and systems of the body all experience growth. At birth, the average weight of children is about 2.5 kg. By the age of 16 years or late adolescence, the weight reaches about 55 kg. At birth, the average child is under 50 cm or about 0.50m. By the age of one year, the average child is about 0.75m.

Medical practitioners describe the baby weight and height not just in absolute units of kilogrammes or metres, but as a percentile. If a child's height is, for example, in the 80th percentile, then the child is taller than 80 per cent of children of his/her age or shorter than 20 per cent of children of his/her age.

Increases in height and weight indicate changes in size and mass of the body tissues, muscles, and the skeleton. These changes do not tell much about the development of the child if they are not accompanied by changes in functions.

Motor development generally signals changes in the *functionality* of body tissues, muscles, and the skeleton. Motor development describes the baby's greater *control* of their *voluntary motor actions*. Voluntary motor actions include reaching for things, grasping, manipulating objects, crawling, standing, and walking. These actions indicate more *effective coordination* among tissues, organs and systems of the body.

The following changes indicate motor development in the baby: At birth, an infant's eyes roam about haphazardly. After a few days, the baby can stare at an object for a brief period. This indicates that there is a patterned connection between the muscles that move the eyes and

This means that the eyes and the hands are doing teamwork. *Motor development* therefore describes more *effective control* and *coordination* of body organs and systems. Researches categorise motor development into three areas: *postural control*, ability to stand upright; *locomotive control*, ability to move around; and *manual control*, ability to manipulate objects (Keogh, and Sugden, 1985).

3.2 Trends in Physical Growth and Motor Development

The trends in physical growth and motor development will be discussed under the following sub-topics.

3.2.1 Physical Growth

Physical growth follows a predictable pattern. That is, growth obeys two *developmental principles*. These principles of development are: *cephalocaudal* principle, and *proximodistal* principle.

The cephalocaudal principle states that growth and development proceed from head (cephalo) and move downwards to the feet (caudal for tail). This is why the head of a newborn is bigger and heavier than the rest of the body. All the human brain cells are there at birth. After birth, the brain cells do not divide further or regenerate.

The *proximodistal principle* states that growth and development proceed from the centre of the body and move outward to the periphery or the outermost parts of the body. The major internal organs of the body – the lungs, the heart, the liver are complete and functional at birth. They show very slight increases after birth. The arms and legs continue to increase until late adolescence.

Physical growth is more *rapid* in the *first year* of a child's life. According to Durojaiye (1976), the average birth weight of the African child is 2.5 kg; and the average height is 0.5m. By the end of the first year of life, the average weight would have reached 7.5 kg (3 times) while the average height would be about 0.75m (half as much). By the end of two years, a child reaches approximately half their adult height.

A noticeable pattern in human growth is that it is *characterised by spurts, plateaux, and peaks*. There are periods of very rapid growth, slow growth, and rounding off. Human growth does not take place steadily. Lampl Veldhuis and Johnson (1992) discovered that infants and toddlers grow in spurts, not steadily. Their research findings indicated that babies can grow as much as 0.01m in a day then go for days and weeks without any growth.

Between the ages of 3 years and 6 years, rapid physical growth continues. Children within this period gain on the average 0.1m in height, and 2.9 kilogrammes in weight per year (Durojaiye, 1976). Between the ages of 6 years and 12 years, growth proceeds at a very slow rate. The average annual increase in height is about 0.06m. The annual increase in weight is about 2 kg.

At *puberty*, the period of physical growth and development that brings to an end childhood and enables the child to achieve adult physical size, growth spurt reappears. The average age children enter puberty is 12 years. This marks the beginning of *adolescence*. The period of adolescence is between 12 years and 20 years. It is characterised by rapid and dramatic changes in growth.

The adolescent period is also characterised by increased growth of the internal organs of the body. There is an increase in the size and capacity of the lungs. The size of the heart doubles, and the total volume of blood in the body increases. There is a noticeable increase in the capacity of the digestive system (Berger, 1986).

3.2.2 Motor Development

Motor development follows a *sequential, systematic and predictable* trend. It follows a *definite sequence* – the *cephalo-canal principle*. Motor control is achieved first in the head, then the arms, hands, upper part of the trunk, lower part of the trunk, and finally the legs and feet (Hurlock, 1972; Shirley, 1933). Thus, infants first lift their heads; then gain control of the shoulders; then sit up; then stand before they finally walk.

Motor control also proceeds in the *proximodistal direction*. The child gains control of the structures nearest the centre of the body before those at the periphery. For example, the child gains control of the muscles in the arms earlier than the muscles in the fingers.

In general, *motor control* proceeds from *gross manifestation to specific* or fine control. At birth, the child has little control of the chest and the arms. However, within four months, the child can hold themselves up while face down, using their arms as props. Thereafter, the infant can sit up with support. Then, the child can hold on to an object and rollover. These activities involve *large-muscle control*. They are called *gross motor skills*.

By 10 months of age, the child can grasp an fingers and the palm. By the first year, the child is able to pick up small objects without dropping them. Activities that involve small-muscle groups are called *fine motor skills*. Fine motor skills are required for reaching and manipulating objects, such as in grasping, throwing, writing, catching, and using tools.

3.3 Factors Affecting Physical Growth and Motor Development

There are two major *factors* that *influence physical growth and motor development*. They are *genetic* factors, and *environmental* factors.

- **Genetic Factors**

Everybody inherits a set of *genes* from the parents. Genes contribute significantly to physical growth and motor development. Genes determine the child's *potential* for growth and development. The eventual height a child attains, the skeletal formation, the general musculature, and neural system coordination depend, to a large extent, on their inherited potential (Thomas, 1991). The *rate of maturation* of bodily structures and the muscles determine the rate of physical growth and motor control. The rate of maturation is known to be *genetically wired*. Thus, the kind of *motor skills* an individual develops depend on *genetic potentiality*.

Hormonal functioning is an aspect of genetic factor in proper functioning of the *growth controlling hormonal glands* is necessary for normal physical growth and motor development. *Malfunctioning* of growth controlling hormonal glands may lead to *stunted growth* or *overgrowth*.

- **Environmental Factors**

Many aspects of the environment can affect physical growth and motor development. They include nutritional status, health status, psychological or emotional state, and training/practice.

Nutritional Status

Every child requires *food nutrients* provided in the needed proportion for them to realise their genetic potential for physical growth and development. If there is *significant lack of food nutrients*, and the child is *severely malnourished*, physical growth and motor development will be altered.

Health Status

Good health is a *pre-condition* for normal physical *growth* and motor *development*. If a child's *health* is *severely poor* and *long duration*, physical growth and motor development will suffer. There may be loss in weight and reduction in *growth rate*. Severe *ill-health* can result in distortion in the growth of *bones*. These may lead to *hampered size at maturity* of the skeleton.

Psychological or Emotional State

Findings from research studies suggest that *emotional disturbance* arising from repeated parental conflict or divorce, maltreatment, child abuse and neglect, overcrowding, and other *negative emotion-inducing circumstances* may make *children lose weight* without being ill. Evidence shows that children from *broken* and highly *stressful homes* manifest *slower rate* in physical *growth* and motor *development*.

Training/Practice

Maturation is the basis of development of motor control. However, the *refinement* and *improvement* of *fine motor skills* require considerable *training* and *practice*. Training and practice produce *star performance* exhibited in sports and athletics such as running, jumping, throwing, catching, foot-balling, and others. Training and practice are most efficacious when introduced at a time the child is biologically ready for the skills.

3.4 educational implications of physical growth and motor development

Physical growth and motor development have some *implications* for the *educational practice*.

Firstly, physical growth affects behaviour. Behaviour in turn influences growth and development. Hence, an *understanding* of the *patterns* of *physical growth* of children is *vital* to *understanding* their *behaviour* at various stages of development.

Secondly, physical *growth* and motor *development* constitute the *basis* for the development of *motor skills* and *various abilities*. Hence, physical growth and motor development *affects social adjustment*.

Attitude to self and others contributes to *self concept* formation. Self concept influences *school achievement*.

Fourthly, vigorous play activities are predicated on well-formed physique and proper motor control. Vigorous *play* is a *vital safety valve* for built up *aggressive behaviour* of children. It is also a *source of social recognition*. These are important *components* of *healthful development*.

Finally, children show extensive *individual differences* in physical growth rate and motor control. The teacher of children must internalise the reality that individual differences aside, the *goal of development* is the realisation of every *child's potential*.

4.0 CONCLUSION

In this unit, we considered physical growth and motor development. We noted that in addition to gaining height and weight, the body also changes in shape and structure. What we have described are the norms, that is, the averages of a large population of children. You will, in reality, observe wide differences in physical growth and motor development among the children you will encounter.

Notwithstanding wide individual differences among children in physical growth and motor development, each child's pattern may be normal. Each child's pattern will reflect their unique genetic, and environmental given. Your goal, as a caregiver, is to provide an environment that is conducive for each child to be able to realise his/her potential.

5.0 SUMMARY

You have, in this unit, considered the physical growth of children in terms of height, size, gait, and weight. We also considered motor development, physical growth, motor control, as well as cephalocaudal and proximodistal laws. You should note that there are mutual interactions among physical growth, motor development and human behaviour. While physical growth and motor development school influence school adjustment and school achievement, the goal of growth and development is the realisation of the child's potential.

6.0 TUTOR-MARKED ASSIGNMENT

- 1 (a) Define the following terms/concepts:
 - (i) Physical growth
 - (ii) Motor development

- (b) Describe the general trend in motor development.
2. Outline the two major factors that influence physical and motor development.
 3. Examine the educational significance of physical and motor development.

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UNIT 2 COGNITIVE DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Meaning of Cognition, and Cognitive Development
 - 3.2 Cognitive Process
 - 3.3 Trends in Cognitive Development
 - 3.3.1 Stages in Cognitive Development
 - 3.3.2 Development of Cognitive Abilities
 - 3.4 Factors that influence Cognitive Development
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1.0 INTRODUCTION

The child is born with primitive reflexes. These reflexes help the child deal with the immediate problem of survival. With age, primitive reflexes get elaborated into patterns of behaviour that help the child adapt to changes in the environment.

As the child grows, various perceptual abilities develop. The child increasingly understands the environment. Many wonder where the child's knowledge comes from.

In this unit, we discuss cognitive development. We examine the meaning of cognition. We outline the trends in cognitive development. We also outline the factors that influence cognitive development. Finally, we examine the educational significance of cognitive development.

2.0 OBJECTIVES

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

- explain the following terms
 - (a) cognition
 - (b) cognitive development
- describe the process of cognitive growth
- outline the trend in cognitive development in adolescents
- highlight and explain three major factors that influence cognitive development
- examine the educational significance of cognitive development.

3.0 MAIN CONTENT

3.1 Meaning of Cognition and Cognitive Development

The term *cognition* describes the way a child views the world. As a product, cognition refers to an individual's view of the world. This view may include the child's knowledge of self, their beliefs, prejudices, superstitions, fears, realities, memory, aspiration, and current and future perspectives.

As a process, cognition refers to the manner knowledge is acquired. It refers to how a child gets to know and understand the world; the manner children process information. It describes how children make judgments and arrive at a decision. Cognition as a process describes how a child explains their knowledge and understanding to another person.

A child's cognition is a mirror of the structure and organisation of their world. A child's cognition naturally changes with increasing maturation and experience. A child's cognition is fluid, not static.

The term *cognitive development* means development involving the ways that *growth* and *change in intellectual capabilities* influence a child's behaviour. Cognitive development examines learning, memory, problem solving, and intelligence. Cognitive development seeks to specify what children know, and the organisational structure of such knowledge.

3.2 Cognitive Process

Jean Piaget attempted an answer to the question: where does children's knowledge come from? He proposed that *knowledge* is the product of a child's direct *motoric action* on the environment. Piaget emphasised the fact that the knowledge children acquire is not from facts other people communicate to them. Knowledge is also not acquired from sensations and perceptions. *Knowledge is constructed* as a direct consequence of a child's actions on his environment.

Piaget assumed that all children passed through a series of *universal stages* of cognitive development in a fixed order. As the child progressed through the stages, the *quantity of knowledge* they acquire increased. The *quality of knowledge* and understanding also grows. What this means is that with increasing *maturation, mastery of principles* regarding the way the world operates.

Piaget noted that initially the newborn deals with the world using *basic primary reflexes*. These primary reflexes include: sucking, looking, grasping, kicking, biting, and others. Piaget called them *schemes*. A *schema* is an organised *pattern of sensorimotor functioning*. It is a *script* or *framework* representing in the nervous system the child's action upon the world. The newborn schemes are basically *physical activity*. However, as the child develops, their schemes become *elaborated* and move to a *mental level*, reflecting thought. According to Achenbach (1992), schemes may be likened to *computer programs*. They direct and determine how input information is perceived,

categorised, interpreted, and dealt with. In this way, schemes help the child to *cognitively organise experience*. Hence, the child's experience of the world is characterised by *organisation* – a process of grouping isolated behaviours into higher-order more functional cognitive system.

The elaboration of schemes continues throughout life. However, optimum level is reached at *adolescence* when the individual attains *adult-level pattern*. According to Piaget, two processes explain cognitive development. They are *assimilation*, and *accommodation*.

Assimilation is a *mental process* that occurs when a child *incorporates new knowledge* into existing knowledge. In assimilation, a child understands an experience in terms of their current stage of cognitive development and a way of thinking. That is, a stimulus is acted upon, perceived, and understood in accordance with existing pattern of thought. For example, a child who tries to understand a new rattle toy by sucking it just like they suck the feeding bottle are using assimilation to incorporate the rattle toy into their *sucking scheme*.

Accommodation refers to changes in existing ways of thinking that occur in response to encounters with new stimuli or events. When *existing way of behaving, thinking, and understanding* become altered to *fit novel experience*, accommodation takes place. In the sucking scheme example cited above, the child may notice that sucking scheme does not fit the rattle toy characteristic. The child then alters the sucking scheme to a *shaking scheme*. The shaking scheme reveals to the child the special characteristic of the rattle toy. The rattle toy rattles. The altering of the sucking scheme to a shaking scheme is accommodation. If the child goes on to shake and rattle other rattle toys, then *adaptation* of the shaking scheme has taken place. The processes of assimilation, accommodation, and then adaptation go on throughout every individual's lifetime.

3.3 Trends in Cognitive Development

This topic is explained under the following sub-topics.

3.3.1 Stages in Cognitive Development

Cognitive development progresses in an orderly sequence through *four major stages* from birth through adolescence. The stages are: *sensorimotor, preoperational, concrete operational* and *formal operational*.

Each of these stages is age-related and consists of distinctive ways of thinking that is qualitatively different from the earlier or the next one. It is to be noted, however, that cognitive development is a gradual process. Infants do not suddenly shift from one stage of cognitive development to the next.

There is a steady shift in behaviour as a child moves towards the next stage. Indeed, there is a period of transition in which some behaviour reflect an earlier stage, while at

the same time, other behaviours reflect the next more advanced stage. Movement from one stage to the next is accomplished when the child attains an *appropriate level of maturation*, and has been exposed to *relevant experience*.

The Sensorimotor Stage

The *sensorimotor stage* lasts from birth to about two years of age. Sensorimotor is a compound word combining two activities – sensory experience and motor activity. Thus, the main characteristic of the sensorimotor stage is that infants construct an understanding of the world by *coordinating sensory experiences* with *motor actions*. For example, on seeing a brightly coloured toy, the child reaches with the hand to grasp it. The eye seeing is coordinated with the hand reaching. The infant progresses from reflexive, instinctual actions at birth to the beginning of symbolic thought towards the end of this stage.

The Pre-Operational Stage

The *pre-operational stage* lasts from two years to about seven years of age. This stage marks the beginning of *symbolic thought*. That is, the ability to represent an object not present develops. The child begins to represent the world with *words* and *images*. This ability is facilitated by the emergence of *language* and *pretend play*.

The child's use of words and images reflects increased symbolic think. This is a leap beyond the connecting of sensory information and physical action. *Intuitive thought* also appears during this stage. The child begins to use *primitive reasoning*.

Children at the pre-operational stage typically want to know the answers to all kinds of questions. For example, on arrival of another baby, the pre-operational child would want to know: where the baby came from; who brought the baby; when the baby will go home, and other such questions. Symbolic and intuitive thought stretch the child's mental world to new dimensions.

The Concrete Operational Stage

The *concrete operational stage* lasts from about seven years to about eleven years of age. Concrete operational thought involves using *operations*. Piaget refers to operations as *reversible mental representation*. Operations are organised, formal, *logical mental processes*. At this stage, he thinks operationally on real *concrete objects* and events. Children at this stage can do mentally what they previously could only do physically. For example, simple additions and subtractions which children did by counting their fingers, they are now able to do mentally. Logical reasoning replaces intuitive thought but only in concrete situations. *Classification skills* appear. Children also begin to achieve *conservation* of number, quantity, and volume in that order. However, abstract problems present difficulties.

The Formal Operational Stage

The *formal operational stage* emerges at about eleven years to fifteen years of age. It is the final cognitive stage of development. Formal operational stage corresponds to

the adolescent period. Thought formal resemble *adult level thought*. Individuals move beyond reasoning only about concrete, current situation to what might or could be. Thought is more *abstract, idealistic, and logical*. At this stage, the individual is able to keep in their head a variety of relative terms, as opposed to absolute terms. They can generate several possible solutions to anyone problem.

3.3.2 Development of Cognitive Abilities

Several cognitive abilities appear and develop with increasing age and maturation of the child. Among these are:

(i) Control of Attention

The ability of a child to tune in to certain stimuli, while at the same time tuning out of others, is termed *cognitive control of attention*. As children get older, attention span improves. Older child are more able to hold their attention longer on one particular activity than younger children.

(ii) Planning

Planning is cognitive *allocation of attentional resources* on the basis of goals mapped out for attainment. With increasing age, children not only learn to control their attention in the face of distractions, they also become more proficient at mapping out or devising strategies for using their attention effectively. They become better at planning. This means that the ability to consider what one must do, and at the same time, what one must not do, increases as the child becomes older.

By the time adolescence is reached, most children would be able to not only to control their attention, they would also be able to allocate their attentional resources to more than one stimulus at a time. For example, it is common to find an adolescent student listening to their favourite music track on the compact disc and at the same time studying for their examination.

(iii) Memory

Memory is the ability to remember past events. Evidence from literature indicates that the basic processes that underlie memory, *retention* and *recall*, are similar throughout one's lifespan. People, regardless of their age, gradually lose memories. They may, however, regain them if reminders are provided. Also, the more times a memory is retrieved, the more enduring the memory becomes (Rovee-Collier, 1993).

(iv) Working Memory Capacity

The *working memory capacity* improves with age. This is due mainly to improvements in the *operating efficiency* or *executive control* of the working memory (Case and Okamoto, 1996). In practical terms, the number of *chunks of information* that can be

held in the *working memory* increases with age.

v) **Speed of Information Processing**

As children attain higher maturational levels, their *speed of information processing* increases rapidly. The efficiency of information processing also improves. That is, less effort is needed to process any bit of information.

(vi) **Memory Control Strategies**

With increasing maturation, the child's *memory control strategies* become more sophisticated. The child's conscious and intentional use of *memory tactics* increases. There is evidence of increasing use of *rehearsal*, *repetition* and *practice* to aid memory as children become older.

(vii) **Growth of Meta-memory**

Meta-memory increases with age and increasing maturation. Meta-memory is the understanding and knowledge children have about memory and memory process. As children become older, they become more aware that memory can fail (Lewis and Mitchell, 1994). They realise that *forgetting* occurs frequently when children come to this awareness; they consciously spend more time studying or rehearsing any material they wish to remember in future.

(viii) **Content Knowledge**

With age, the quantity of information a child stores and recalls in virtually all *domains of knowledge* increases remarkably. Increase in *content knowledge* leads to increases in how children recall as well as what they can remember. As the amount of information on a given topic stored in the memory grows, it becomes easier to learn new, but related material. Prior memories provide a context for new information (Harris, Durso, Mergler and Jones, 1990).

3.4 **Factors that Influence Cognitive Development**

Several factors influence cognitive development. We discuss three factors, namely: maturation, experience and social transmission.

Maturation

Maturation is the natural unfolding of a person's biological potential. It is a sequence of changes in the body systems that are governed by a genetic blueprint. Maturation defines the *readiness* of an individual to develop *specific tasks*. Thus, the level of maturation delimits the level of cognitive functioning. This means that the nature of the cognitive tasks a child is able to benefit at any stage of development will depend on their biological readiness or maturation. Maturation is important because before any stimulus can set off a response, the child must be capable of exhibiting that response.

As stated earlier, the child's initial schemes of the world develop from the child's motor actions. Primarily, motor actions are genetically pre-wired. Maturation gets them expressed. Equally, the appearance of some specific mental operations, such as *conservation*, *relativity*, *proportional* and *propositional reasoning* requires some level of maturation.

More specifically, the five year old child cannot represent their route to the school on paper. The same child goes to and returns from the school without an escort. A ten year old child can mentally represent their route on paper. A seven year old child will not grasp the significance of Newton's *first law of motion*:

An object that would move on a physical surface and not experience friction does not exist in the seven-year old's experiential world. The task is a propositional problem. Also, the seven year old child can only memorise the definition of *density of an object*. Density is a *derived quantity* – the ratio of mass to volume of the object. Most adolescents would understand these concepts. This means that some *basic mental structures* must exist in a child's schemes before they are able to benefit from some kinds of knowledge. In other words, maturation limits what cognitive abilities a child develops and when they are developed.

Experience

Basically, *experience* has to do with *environmental stimulation*. Experience of the physical world is crucial to cognitive development. As earlier stated, knowledge is constructed from the child's actions on the environment. That is, schemes are constructed through experiencing. The child's ideas about the attributes, uses, and relationships among different aspects of the environment are arrived at through their own experiences. For example, the child comes to know that the breast nipple is soft and pleasant through their experience of sucking; that a piece of stone is coarse through their experience of rubbing or biting; that a concrete block is heavier than a block of wood through their experience of lifting. These experiences and the child's abstractions from them constitute the building blocks for cognitive growth and development. May have taken its course but without *relevant experiences*, *specific behaviours* will not appear.

Social Transmission

Children live and grow up in more than one *social setting*. What happens in the child's family, school, neighbourhood, the peer group, and society at large is very crucial in defining the course and content of cognitive development.

What this means is that the *social* and *cultural contexts* in which the child lives, and the people they live among markedly influence their development.

Bronfenbrenner's *ecological theory* details *social systems*, ranging from close interpersonal interactions to broad-based influences of culture that define what is knowable and what behaviours are allowable within the child's social setting (Bronfenbrenner, 2000). The ecological theory draws attention to the critical role

social transmission plays in child development.

In considering *family influence* on cognitive development, one examines the impact of the *family psychodynamics*: the presence for the child of one or both parents; the family size; family cohesion; poverty level of family; language structure; religion; urban-rural location; family values and aspiration, and others. The question would be: how does the interplay of these forces in the family system impact on the child's cognitive development? The valence of the interaction will determine the direction of influence.

Culture, in the ecological theory, is broadly defined in terms of *ethnicity*, *values* and *customs*. In Nigeria for example, some ethnic groups are battling with low enrolment of the girl child in schools, while some other ethnic groups are battling with low boy child enrolment in school. This reflects different values placed on *gender role*. Also, some ethnic groups in Nigeria place more premiums on inordinate quest for material wealth; while some place more premiums on education. Still some ethnic groups are *laissez-faire* about life generally. These are reflections of different customs and worldview. Nevertheless, they affect what is transmitted socially and same impacts on *child rearing practices*. Child rearing practices influence cognitive development.

A very important aspect of Bronfenbrenner's ecological theory is what he called *socio-historical conditions* of children's development. Children growing up in the present generation have some historical events peculiar to their own cohort. These include: increasing dual career marriage; and day-care for children; increasing poverty among families; increasing divorce and family disruption; decline in societal values; information and communication technology, and globalisation. Children born ten years ago were not exposed to some of these influences in their childhood and these impacts on cognitive development.

In a nutshell, social transmission is a critical factor in determining not only the content but also the course of cognitive development. We should look at a child's cognitive development as affected by several socio-cultural factors.

3.5 Educational Implications

From our discussions, so far, it is obvious that cognitive development is a very important aspect of human development. The amazing capacity and plasticity of the human cognitive system differentiates human beings from other beings. We note some important points here for educational practice:

- It is important that those who work with children become aware of the general stages of cognitive development, and the sequence of appearance of significant cognitive abilities. This awareness will encourage them to provide appropriate materials and experiences for children.
- Instruction should be based on evaluation of the current level of development and the next higher level to provide adequate challenge for cognitive development.

- Instruction should be individually paid to accommodate individual differences in the rate of development.
- Since direct activity is the basis of knowledge construction, instruction should be activity-based.
- Knowledge is culturally situated. Therefore, ample opportunities should be provided for effective interaction between the child and the various social systems that impact cognitive development.
- Cognitive growth often results from confronting errors, and cognitive conflicts. Hence, children should be allowed to make mistakes and learn from resolving such errors.

4.0 CONCLUSION

In this unit, we explored the meaning of cognition and how the child's cognition of their world is acquired. We were made to understand that the knowledge the child has about their world does not come from the wonderland. The child constructs knowledge of their world by themselves.

Actions children perform on aspects of their environment give rise to consequences. These consequences help children understand and adapt to changes in the environment. Therefore, our main duty as caregivers is to arrange the environment safely for the child to explore and discover knowledge.

5.0 SUMMARY

This unit has explained cognition, cognitive development and the trend in cognitive development from childhood to adolescence. Three major factors that influence cognitive development were highlighted and explained, and the educational significance of cognitive development was examined.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the sequence of cognitive development in children from childhood to adolescence.
2. Highlight and discuss the three major factors that influence cognitive development.
3. Examine the educational implication of changes in cognitive abilities that follow maturation and experience

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UNIT 3 LANGUAGE DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
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- 3.2 Trends in Language Development
- 3.3 Factors that Affect Language Development
- 3.4 Educational Implications
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1.0 INTRODUCTION

Everybody uses language to communicate. It might be to communicate a thought; to give directives or command or to make a request or complaint. Language is so important in our lives; it differentiates humans from non-humans.

Human beings are said to be social animals primarily because they are able to communicate in diverse ways.

In this unit, we trace how language develops from childhood to adolescence. We discuss the major factors that influence language development. We also examine the educational importance of language.

2.0 OBJECTIVES

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

- state the meaning of language
- explain the process of language development from childhood through adolescence
- list and explain at least four factors that influence language development
- outline major educational implications of language development.

3.0 MAIN CONTENT

3.1 Meaning of Language

Language is a form of *communication*. It is a systematic, meaningful *arrangement of symbols* which provides the basis for communication. Language may be *spoken, written, or signed*.

All human languages are generative. This means that there is no end to the ways in which new meaningful or novel sentences can be generated using a finite number of words and rules. It is for this reason that human languages are said to be very creative.

Language serves a number of purposes. It enables the child to express their thoughts and understanding of the world. It enables the child reflect on people, objects, and events. That is, language is involved in thinking, memory, reasoning, planning, and problem solving. Through language, a child can convey their thought to others.

Language has three main characteristics. These are *phonology*, *morphemes* and *semantics*.

Phonology: refers to *basic sounds* of the language. The basic sounds are called *phonemes*. The phonemes of a language are combined to produce words and sentences.

Morphemes: refer to the smallest language units that have meaning. Words are examples.

Semantics: refer to the rules that govern the meaning of words and sentences. The arrangement of words in a meaningful sentence follows a certain order.

Children must master these language characteristics as they achieve linguistic competence. We note, however, that children do not necessarily master these characteristics of the language in the sense that they have the knowledge as a *cognitive object*. They do not know that they know these characteristics. They master these characteristics only as a *cognitive vehicle*; an instrument for manipulating language for effective communication.

There are two aspects to language development. They are *linguistic comprehension*, and *linguistic production*. Linguistic comprehension refers to the process of *understanding speech*. The process of *using language to communicate* is known as linguistic production. Comprehension of speech appears before speech production. Children begins to understand instructions and directions long before they utter their own words during infancy. During infancy, comprehension proceeds more rapidly than speech production.

3.2 Trends in Language Development

Language development follows, more or less, a predictable trend or sequence of increasingly more complex levels of comprehension and production of speech. Thus, the following stages of language development are identifiable:

(1) The Pre-linguistic Stage

The earliest sounds infants produce are non-speech utterances like whimpers, cries, grunts, burps, gestures, imitations. Children use them to communicate discomfort, satiation, or positive emotions. They are termed *pre-linguistic communication*. Thus,

children communicate linguistically through crying, cooing, gurgling and babbling long before they say their first word.

Babbling is a speech-like but meaningless sound. It involves repetition of vowel sounds, example ee-ee, a a-aa, oo-oo. These sounds may appear meaningless. However, they are the most obvious manifestation of pre-linguistic communication. They play an important role in linguistic development.

(2) The One-word Stage

The child's first words are generally spoken between 12 months and 18 months. A child is said to utter their first word when they give a clear, consistent name to a person, event, or object. For example, *mama* is to first word if the child uses it consistently to label the same person in a variety of circumstances.

One-word utterances are called *holophrases*. They are one-word but they express complex intentions and meanings. Usually, the one-word is a label for a person, an object, or acts. For the child, the one-word stands for naming the person, or object; for describing an action; to serve as an imperative, or a request; or even to express an emotional state. The actual meaning of a child's one-word depends on the context of use. For example, the word *mama* may mean any of these:

Mama is back; Mama is going out; Mama beat Johnny;
Mama see, Johnny is crying.

The word ball may also mean:
My ball has rolled into the mind; Johnny has taken my ball;
Let us play ball.

The one-word stage ends around 18 months of age. Once children begin to produce words, vocabulary expands methodically. The one-word stage is followed by a sudden spurt in vocabulary expansion.

(3) The Two-word Stage

The buildup of vocabulary towards the end of the one-word stage brings about linking or combining of words. Children usually form their first sentences by linking two words. The two-word sentence conveys a single thought. Two-word utterances are referred to as *telegraphic speech*. They are telegraphic because they are coded like telegrams. They contain only keywords – no articles, and no prepositions.

However, they convey a meaningful thought. Examples are: Mama come; Mama eat; Mama water; See Dadi.

We note that two-word utterances follow the rules that govern grammatical construction. The subject, verb, and predicate in the two- word phrase follow the correct order of

arrangement in complete sentences.

(4) Complete Sentence Stage

By the time most children reach 48 months, they have acquired the rules of grammar. They are able to make complete and correct sentences. They generate their own sentences; and not merely repeat or imitate other persons' sentence. Language development reaches its peak at adolescence. Adolescents are able to manipulate language for all kinds of abstract thinking, inferences and judgements.

It is important to note that children vary enormously in their rate of language development. Therefore, chronological age may not be a good index of a child's linguistic level. Psychologists use Mean Length of Utterances (MLU) in a morpheme that is the average length of morphemes in utterances, to assess the index of language level of children. Ordinarily, an infant should exhibit some of these abilities as an indication that language development is progressing normally:

- Understanding of at least some things the child hears. This indicates that the child has some receptive language, and that the child can hear.
- Production of some sounds around six or seven months of age. Children who are deaf cease production of pre-linguistic speech around this age.
- Using gestures such as: pointing, and babbling. These are forerunners of language.

3.3 Factors that Influence Language Development

Language development does not just occur. It is influenced by some factors. We discuss here some of the major factors that influence language development:

Maturation

Somebody's structures and organs facilitate speech production. The vocal cords, the lips, and the brain centre that controls speech must be sufficiently maturationally ready before the child can engage in speech production. The rate of maturation of these organs and tissues are genetically wired. When there is delay in the development of these organs and structures, speech production might be retarded. In this sense, maturation delimits language development.

Also, Chomsky (1978) argues that there is a genetically determined, innate mechanism that directs the development of language. According to Chomsky, the human infant is born with an innate capacity to use language. The human brain is wired with a neural system called the *language acquisition device* (LAD). This device permits the child to automatically understand the language structure, and provides them with a set of strategies and techniques for learning language. The language- acquisition device unfolds with increasing maturation. This explains why children at specific ages show amazing facility to understand and learn different languages without formal instruction.

Language Background or Language Model

Early exposure to language, in terms of quantity variety, and structure or language code plays a significant role in language development in the child. Different families use different language codes. The two major *language codes* are: the *elaborated*, and the *restricted*. The elaborated language code is more mature and advanced, involving explanations for actions, directives, instructions, prohibitions, and rules. It is a conversational speech in which children are spoken to and with. The elaborated code is richer and encourages more robust language development.

On the other hand, the restricted language code resembles military language. It involves top-down speech. In such a language background, children listen to instructions and carry them out. Language development is thereby hampered. In a nutshell, the available language model influences language development.

Family Income

According to Hart and Risley (1995), the rate at which language was addressed to children varied significantly accordingly to the economic level of the family. Their findings indicated that the greater the *affluence of parents*, the more they spoke to and with their children. There was also significant difference in the language code used by the affluent and impoverished families. While children from the affluent families were engaged in conversations with their parents, children from impoverished families heard more of prohibitions – do's and don'ts or imperatives. The *quality time* spent with children also varied. Children of the affluent parents had more quality time with their parents. In essence, the family psychodynamics favoured language development of children from the affluent families but hampered it among children from impoverished families.

Bilingualism

Bilingualism is the use of two languages. Most Nigerian children are exposed to two languages and more. The language that is spoken in most homes is vernacular, the language of the immediate community, or the ethnic language. The language spoken in the school is English – the medium of instruction. This can pose a great challenge both to the teachers and the children themselves.

Bilingualism poses a challenge to the teacher and the children in situations where most of the children are not fluent in the language of instruction. If the children have not yet mastered the structure of the language of instruction, communication is hampered. For example, the child who speaks English haltingly is forced to *think in vernacular*, and then to *transliterate* and communicate in English. The result is slow progress in the mastery of the language.

However, if children are allowed to gain mastery of the first language before they are exposed to the second, they gain from the experience. There is increasing evidence that there are some cognitive advantages for bilingual.

According to Romaine (1994), children who speak two languages show greater *cognitive flexibility* than their one language peers. They have a wider *range of linguistic possibilities* to choose from as they assess any situation. For this reason, they are able to solve problems with greater creativity and versatility than their one language peers. Also, according to Genesee (1994), bilingual children often have greater *meta-linguistic awareness*. They, therefore, understand the rules of language more explicitly.

Thus, whether bilingualism facilitates or hampers language development will depend on the timing of the exposure. Children who are exposed to a second language after mastery of the first are likely to have their language development facilitated. However, haphazard exposure of children to different languages will most likely slow down language development.

School Experience

The school language environment will also play a significant role in language development. A school with adequate library resources for language teaching, and a school with good language model will foster language development. Conversely, a school with impoverished language environment will not encourage fast rate of language development. In a second language situation, teachers are strong models for language development. If teachers are inefficient in their use of language, there will be a ripple effect on the children's language development.

3.4 Educational Implications

The educational implications for language development are as follows:

- Language is the means by which the child expresses complex information about their thought and understanding of the world. A child with good *language facility* is able to communicate more effectively than the child with poor language facility. Effective communication results in more fruitful social intercourse. Fruitful interpersonal experience helps in *confidence-building*. Self-confidence is related to self-esteem. Self-esteem is related to self-efficacy beliefs. Indeed, adequate language facility should help the child develop *appropriate sense of values*, and a *healthy attitude* towards people and life. These are important *socio-cognitive variables* that are related to *school adjustment and academic achievement*.
- Language is involved in thinking, memory reasoning, planning, and problem-solving. Therefore, adequate facility in language usage will also engender faster development of these cognitive abilities. These cognitive abilities are positively related to school achievement.
- Since children understand language before they speak the language, teachers are reminded that concrete experiences enhance children's interaction with their environment. Adequate experiences provided early in the child's life stimulate schema elaboration. The child's understanding of things and events in their

- immediate environment will facilitate language development.
- The language model in the child's immediate environment influences language development. The school authorities are advised to provide rich language environment to foster language development of school children.
 - It is important that early childhood education providers implement the National Policy on Education provision that the language of instruction should be the vernacular, and that the second language should be taught as a subject. This will ensure that children master the first language before being exposed to the second language. In this way, children will reap the benefit of bilingualism.

4.0 CONCLUSION

Language capacity distinguishes human beings from all other animals. When the child utters their first word, a new world opens. With language, the child is able to communicate thought, request, command, intentions, emotions, and all manner of complicated processes involved in social intercourse.

Human beings acquire language by reason of living in a language environment and community. The language model in their environment significantly influences the child's own language. Your duty, as a caregiver, is to provide a rich language environment to enable the children under your care to gain effective use of language to communicate efficiently.

5.0 SUMMARY

You should have learnt that language is form of communication using a system of symbols; you should also have learnt the definition, process of language development from childhood to adolescence. You should be familiar with the factors that influence language development and the educational implication to language development.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the stages of language development, indicating the major characteristics of each stage.
2. Briefly discuss any four factors that influence language development.
3. Examine the educational importance of language for children.

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UNIT 4 EMOTIONAL DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Meaning and Types of Emotions
 - 3.2 Trends of Emotional Development
 - 3.3 Factors that Influence Emotional Development
 - 3.4 Educational Implications
- 4.0 Conclusion
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1.0 INTRODUCTION

Human beings are said to be creatures of emotions. Emotions provide the force that enables human beings to deal with different circumstances of life. Emotions provide the motivation for action under difficult situations. Emotions add pleasure to our experiences.

On the other hand, emotions could also becloud one's enjoyment of life's opportunities. Indeed, emotions add colour and spice to one's life.

In this unit, we examine the meaning of emotions, and types of emotions. We discuss the sequence of emotional development.

We also outline some factors that influence the development of emotions. Finally, we examine the educational significance of emotions.

2.0 OBJECTIVES

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

- define emotions
- list two types of emotions, and list examples of each type
- outline the pattern of emotional development in children
- describe two major factors that influence emotional development
- explain the role of emotions in human learning and adjustment.

3.0 MAIN CONTENT

3.1 Meaning and types of Emotions

This will be discussed under the following sub-heads.

3.1.1 The Meaning of Emotions

The layman conceives emotions as the outward expression of fear, anger, terror, embarrassment, disgust, sorrow, jealousy, shame, laughter, joy, grief, and others. Psychologists think that emotions are more complex than what is observed. They are in agreement that emotions originate from *internal processes* that involve the nervous system, the endocrine system, and the psychological situation. According to Durojaiye (1976), emotion is an *expression of inner feelings* which are aroused by one's own behaviour or the behaviour of others.

Emotions can trigger a variety of behaviours in the individual feeling the emotion. In newborns, emotions trigger *facial expressions* of smiling, anger, or sadness. In older persons, emotions can trigger *affective experiences*, indicating pleasure or displeasure. Emotions can stimulate an individual to generate *cognitive explanation*, an attribution for the cause of the event.

Emotions can trigger *internal adjustment*, such as increased heart rate. Emotions can produce *expressive behaviour*, such as laughing or crying. Emotions can also generate *goal-directed behaviour*, such as helping or rescuing a person whose life is threatened. The usefulness of any emotion will depend on the type of the emotion, its intensity, its frequency, and its duration.

3.1.2 Types of Emotions

There are two major types of emotions. They are *pleasant emotions*, and *unpleasant emotions*.

Pleasant Emotions include the emotion of pleasure, happiness, love or affection, delight, and others. These emotions are characterised by *pleasant body sensations*, warmth and a general feeling of wellness. Pleasant emotions can be a source of goal-directed activities. They can enhance *achievement motivation*, and overall accomplishment in life. In newborns, pleasant emotions trigger *attachment bonding*. Attachment bonding is a psychological process which describes an infant's connection with caregiver, providing a sense of safety and security.

Unpleasant Emotions include emotions such as grief, fear, worry, anxiety, guilt, jealousy, shame and others. Unpleasant emotions are characterized by *distressful behaviours* such as muscular tension, facial contortions, and general agitation. In newborns, unpleasant emotions are expressed in *hysterical crying*. Intense, frequent, and long lasting unpleasant emotional situations can produce in infants, *relational disengagement*.

Relational disengagement is a psychological process by which the infant is unable to achieve attachment behaviour due to absence of *affectional bond* with the caregiver. The dynamics of relational disengagement may impact negatively on future development of social and cognitive skills. We discuss below in details some specific emotions which may significantly influence school adjustment and academic success. They include the emotions of love or affection, fear and jealousy.

Love or Affection

Love or affection is a psychological need of man. It is an emotion characterised by friendliness, warm regard, empathy, acceptance, and care. Children express their love by hugging or patting the object of love. Children develop affection through *affectional bonding*. That is children develop strong attachment behaviour to close *significant adults*, such as parents or caregiver who supply their nutritional needs, warmth, and security. Affection is built gradually through the experience of pleasant emotions.

Every child craves the feeling of *recognition* and *acceptance* in school by teachers and peers. Recognition and acceptance can have tremendous impact on a child's school adjustment and academic achievement. Teachers should show genuine affection for children under their care. Teachers should encourage *classroom environment* that nurtures *reciprocity of affection*.

Fear

The emotion of *fear* is aroused when an individual is faced with an *impending danger*. When the individual realises that they are unable to bring the threatening situation under control, they respond with the fear emotion. *Fear responses* include withdrawal, wild apprehension, and paralysing terror. Fear may be invoked by a concrete situation. For example, the sudden appearance of a strange cat can frighten a child. Fear may also be invoked by circumstances that are not very obvious. For instance, worry and anxiety may provoke fear.

In newborns, fear is most frequently elicited by loud noises. During infancy, fear may be elicited by loud noises, strangers, animals, being alone, and sudden displacement. The kind of things that frighten children will depend on the child's age, past experiences, and level of cognitive development.

Durojaiye (1976) identified some common fears among African children to include: fear of witches, ghosts, thunderstorms, heavy rain, and fire outbreak. Others are fear of something bad happening to their mother, fear of being late to school, fear of failure at school. We may add, for the Nigerian child of today, fear of ritual murderers, fear of being kidnapped, fear of rape and fear of being abandoned by one parent. *Imagined fears* are most devastating to children. The great danger of imagined fear is that it lasts for a longer time, and the child requires only to recall the *fear producing stimulus* to trigger off the fear.

Prolonged fear affects a child's school adjustment and academic achievement. Parents and teachers are advised to remove, as much as possible, fear-producing stimuli from children's environment. Children's environment should be reasonably safe, secure, and stable. Fear generates anxiety. When anxiety persists in children, concentration span and memory diminish. Safe, secure environment encourages curiosity and creativity in children.

Jealousy

Children's affectional bond is a relatively enduring tie which intuitively children do not wish it is replaced by another. The emotion of *jealousy* is aroused when a child imagines the possibility of losing the affection or approval of a loved one. Jealousy is an emotional response to actual, imagined, or threatened *loss of an affectional bond*. It takes the form of an outburst of anger or resentment. Jealousy is usually accompanied by a feeling of insecurity in a relationship, unhappiness, and maladjustment.

In childhood, jealousy is most noticeable when another child arrives in the family. The arrival of another child provokes in the older child an anxiety that someone else has come to take their cherished position. Sometimes, the fear is real because of the *differential attention* the older child now receives. *Sibling jealousy* can be very intense. There have been instances where the older child strangled the newborn.

In school, a child may exhibit the emotion of jealousy towards classmates or the class teacher. A child who excels in school work or other school activities and gains special recognition and attention may become an object for jealousy from other mates. A situation where a teacher has some pupils as pets, or where a teacher makes some *unfavourable comparison* between school children can breed jealousy.

Jealousy is an emotion usually charged with tension. This tension, most often, is discharged through aggression, hostility, or *withdrawal behaviour*. All of these are manifestations of maladjustment. Therefore, jealousy can be a drag on normal social and cognitive development of children, and parents should resist the temptation of showing favouritism or giving privileged attention to some children at the detriment of others.

3.2 Trends of Emotional Development

Emotional development follows the directional law of human development. Emotional behaviour first appears as *gross manifestation of emotions*, and then proceeds to *specific emotional responses*. The newborn's emotions first appear as *general excitement* which is aroused by strong stimulation, like a loud noise. The diffuse general excitement is followed by some *differentiated emotions* of delight or distress.

The delightful response is exhibited when the child is suckling, being rocked, generally warm and comfortable. Distressful responses are exhibited when the child is hungry, when there is a sudden loud noise, or when the diapers are wet. Although emotions of delight and distress are not sufficiently specific, at this age, the child's basic

facial expressions indicate the general feelings of the child. For example, in situations we expect the child to be happy, they seem to smile. When we expect the child to be frustrated, the facial expression shows anger. And when we expect the child to be unhappy, the facial expression will look sad. These non-verbal expressions of emotions are called *non-verbal encoding*.

As children get older, they experience and display a wider range of emotions. At about six months of age, *stranger anxiety* appears. Stranger anxiety is the fear response or the anxiety a child displays when they encounter a strange person. Typically, at this period, when the child encounters a strange person, the face crinkles up with a frown, and the child sharply turns away from the stranger as if they are encountering a ghost. Stranger anxiety is an indication that there is increase in cognitive ability. It is recognition that this person is not familiar; a sort of question mark: "I do not seem to know you?"

At about nine months of age, *separation anxiety* appears. It is an emotion of distress displayed by children when the usual care provider suddenly departs. Separation anxiety is also the result of increasing cognitive ability. The child appears to be asking the question: "Where is my mother going?"

At about the sixteenth month, *jealousy* and *affection* towards caregivers and other children begin to manifest. By the age of 18 months, *social smile* becomes very distinctively used for familiar persons, and also more frequently used especially to caregivers. In other words, by the end of second year of life, children quite purposefully use smiling to communicate their positive emotions. They also become very sensitive to other persons' emotional expressions (Toda & Fogel, 1993). In general, as the child grows older, specific emotions identifiable by adults as anger, joy, hate, fear, happiness, jealousy, envy, and others begin to manifest.

3.3 Factors that Influence Emotional Development

Two major factors have been identified as influencing emotional development. They are *maturation* and *learning*.

Maturation

This is the unfolding of biological systems in the body which bring the child to a point of readiness to undertake specific behaviours. The development and expression of emotion appear to depend on biological maturation of some parts of the brain and the endocrine system. In particular, the development of *cortical control*, especially the *frontal lobe* affects the development and expression of emotions. It has been reported (Hurlock, 1972) that the removal of the frontal lobe in human beings had resulted in emotional behaviours that lacked depth, and were quite unstable. In essence, mature emotional behaviour depends much on development of the brain's cortex.

Also, mature emotional behaviour depends much on the development of the endocrine system. The endocrine system secretes the chemical that regulates bodily functions and

the emotions. The secretions of the *adrenal glands* regulate the body systems that are involved in emotional reactions.

Learning

Learning plays a significant role in emotional development. As a child interacts with people and events in the environment, their range of expression of various emotions also widens. An infant, for example, has no inborn fears of snakes, darkness or fire. Fear of these basically is acquired through experience. Conditioning and imitation play significant roles in the acquisition and expression of emotions. The common expression that emotions are contagious tends to confirm that much of emotions are learnt through observing other persons emotional reactions to specific situations in life. The specific process that brings about this type of social learning is termed *social referencing*. The child searches and obtains clues for the meaning of uncertain circumstances. When the same circumstances occur again, the child's response is similar to the adult's response in the first instance. In other words, social referencing permits the child to decode other person's emotional responses.

Children not only learn to decode other person's emotions, they also learn the *display rules* that guide emotional responses. Display rules are guidelines that govern the social appropriateness of non-verbal shows of emotions. Display rules help to minimise, exaggerate, or mask emotional expression as deemed appropriate for different circumstances. For example, sometimes we are forced by the specific circumstance to smile, when in actual fact the emotion we feel is the emotion of sadness. Such *pretend emotions* are learned. They help us to avoid insulting others, and thereby help us to preserve relationships.

3.4 Educational Implications

Emotions are very important in our lives. Emotions give relevance and spice to human experience. Emotions are embedded in many *ego-integrative characteristics* that give everyone of us the pull and push that help us attain significant goals in life. Emotions come into play in such personality constructs as: self-concept, interest, level of motivation and aspiration, strength of ego-involvement and achievement motivation, self-efficacy belief and achievement orientation. All these variables come into play and interact with the task, and the learning environment condition to impact on learning and performance.

Much of what is learned in school, for example, cognitive and psychomotor skills involved affects *attitudinal changes*. Fear of school or school subject; fear of a class teacher or some bullying classmates can become so pervasive; that the child refuses to attend school. If the child attends school, such fear can be so overwhelming that learning is completely hampered.

Favourable *attitude to school* and school-related tasks is a prerequisite to school adjustment and school achievement of any child. Positive self-concept and favourable self-efficacy beliefs are important determinants of the amount of effort any child is

prepared to master in a learning environment. All these are predicated on the type and strength of the emotions the child has been living with.

Sometimes, the teachers' interpretation of children's behaviour and even the grades they award may be a reflection of their own emotions. Thus, the general *emotional climate* in the classroom is very important for what the teachers do and also for what the learners are able to learn.

The teacher's attention is drawn to the fact that much of *emotions are learned* through observation and invitation. The teacher should therefore be sensitive to the types of emotions children cultivate in the class, as these can very easily infect other children in the class.

4.0 CONCLUSION

We all experience emotions of different types at various times in our life. Emotions serve very important purpose in our life. Through emotions, we are able to express joys, surprises, disappointments, sorrows, and even grief. Emotions serve as tonic to human experiences.

Children are very sensitive to emotions of caregivers and significant others. Children also have their own emotions. Pleasant emotions engender a feeling of well-being. Your major goal, as a caregiver, is to create opportunity for children to express their emotions appropriately. It is also part of your duty to ensure that the school is a place where activities reinforce the development and expression of pleasant emotions.

5.0 SUMMARY

This unit has taught the meaning and types of emotions, trends of emotional development factors that influence emotional development. It has also taught the educational implications of emotions to childhood development, school adjustment and performance.

6.0 TUTOR-MARKED ASSIGNMENT

- 1
 - (a) Define emotion.
 - (b) Describe two types of emotions.
 - (c) Outline the pattern of emotional development in children.
2. Discuss two major factors that influence the development of emotions.
3. Examine the significance of emotions in school adjustment and performance.

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UNIT 5 SOCIAL DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Meaning of Socialisation
 - 3.2 Agents of Socialisation
 - 3.3 Trends of Psychosocial Development
 - 3.4 Educational Implications of Social Development
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1.0 INTRODUCTION

A common adage has it that “no man is an island entirely on his own or to himself”. This statement summarises the fact that human beings are social animals. We live in a community of human relationships. Although from infancy it appears everyone strives to carve for themselves a unique personal identity of self, any individual’s uniqueness is a product of their interactions with other selves in a social environment. We all share the awareness that somehow human beings inter-depend on one another for meaningful living. The unique qualities that make us human are acquired through social interaction in the family, and other social systems. In this unit, we discuss the meaning of socialisation, and agents of socialisation. We examine the pattern of psychosocial development. We will also examine the educational significance of social development.

2.0 OBJECTIVES

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

- define socialisation
- list and describe the key agents of socialisation
- outline the pattern of social development
- discuss the educational importance of social development.

3.0 MAIN CONTENT

3.1 Meaning of Socialisation

Socialisation is the process by which the child acquires the ability to behave in socially acceptable ways or in accordance with social expectations. Socialisation entails the following:

- **Learning to behave in socially approved ways.** This may mean modelling behaviours that are appropriate for different social settings.
- **Playing approved social roles,** for example, playing appropriate gender role, child role, student role, or even parental role.
- **Developing appropriate social attitudes.** This may involve learning various display rules that guide social acceptance or rejection as may be appropriate.

Socialisation is involved in *social development*. That is, socialisation explains the way in which individual's interactions with others and their social relationships grow, change, and remain stable over the course of life.

The process of socialisation may produce three categories of people, namely:

- (i) **Pro-social People:** Pro-social people are persons whose behaviour pattern conforms with group expectations and norms. They are fully accepted within the membership of the social group.
- (ii) **Unsocial People:** These are persons whose behaviour pattern falls short of social expectations. Their behaviour is non-conforming. They are therefore, rejected within the social group they wish to identify with, the social expectation owing to their own *ignorance* of what is acceptable behaviour.
- (iii) **Anti-social People:** Anti-social persons know what the acceptable pattern of behaviour is. However, because they are antagonistic to group norms, they willingly violate group expectations. They are usually rejected among the group they wish to identify with.

Socialisation may be achieved through any of the three ways: A child may become socialised through *modeling* the behaviour of parents or of significant others. If parents are law-abiding and respectful of constituted authority, their children may model their behaviour and be law-abiding as well. On the other hand, if parents are rebellious, play public hypocrisy or take liberties with the law, their children may also model their anti-social behaviour.

A child may also become socialised through *contingency management*. This is a system of rewarding a child for obeying rules, and withholds reward when rules are broken. In

other words, rewards for rule-regulated behaviour can get children to conform to rules even in the larger society. By the same token, parents who reward rule-breaking behaviours of children should expect anti-social behaviours from those children.

Children may also become socialised through social cognition. As children's maturation increases, their cognitive abilities also expand; so they begin to understand display rules that guide social actions. Learning of display rules is facilitated by social referencing. In this way, children begin to understand intentions behind specific actions and they pattern their behaviour accordingly.

3.2 Agents of Socialisation

Children's relationships with parents, family members, peers, friends, teachers, mentors, and others in the various social systems that they (the children) are exposed to can profoundly affect their social development. Social development is neither simple nor automatic, but it is crucial the bonds that grow between the child and the parents, family, and other significant persons provide the foundation for a lifetime's social relationships. We classify the important sources of socialisation into three social agents: primary, secondary and tertiary social groups.

(a) The Primary Socialisation Agent

The *family* is the *primary socialisation agent* and the seat of learning for *social skills*. The family is the source of nurturance, warmth, contact comfort, security and trust. There are the ingredients that engender the child's initial affectional bonding. Human beings generally like those who provide and care for them. Thus, prosocial and unsocial patterns of behaviour are established during the early formative years in the family. Early social experiences significantly influence what sort of adults children grow to become. The critical factors in the family that influence social development include: the family demographic characteristics, the child-rearing practices, and provision of specific experiences at home.

Family Demographic Characteristics

Parents with more education are more likely than less-educated parents to believe that parental involvement in the child's education is important. Educated parents are more likely also to actively provide intellectually stimulating experiences and materials at home (Schneider and Coleman, 1993). When parents' time and energy are largely consumed by attention to parents' other concerns or people other than the child, then the child's social development suffers. Living in a single-parent family, having parents who are consumed by their work, and living in an over-crowded family can undercut children's development.

Child-rearing Practices

According to Eccles, Wigfield and Schiefele (1998), child-rearing practices impact greatly on a child's social development. The critical aspects of the child-rearing practices relate to the following:

- Parents knowing enough about the child to provide the right amount of *challenge and support*, and to have realistic expectation from the child.
- Parents providing *positive emotional climate* to motivate the child to internalise parents' values and goals.
- Parents' modelling *motivated achievement behaviour*, including working hard and persisting with effort at challenging tasks.
- Parents adopting a firm, consistent discipline style that encourages the child to internalise the values of discipline and achieve *self control*.

Provision of Specific Experiences at Home

Specific experiences at home that will positively influence social development may include:

- Talking to and with the child.
- Explaining nuances, display rules, and other non-verbal gestures that guide social intercourse.
- Allowing the child to go out and explore the world rather than “imprisoning” the child in the house in the name of protection.

In all, satisfactory relationship with family members encourages children to strive to develop and enjoy fruitful social relationships with people outside the home. It helps children to develop healthy attitude toward people, and to learn to function effectively in peer associations.

(b) The Secondary Socialisation

The secondary socialization agent is defined as the social groups outside the home whom the child has continuous social contact with on a daily basis. They include: the peers, organised playgroups, school clubs, classmates, the teacher, the church members and members of the neighbourhood. Throughout childhood, the child spends significant amount of working hours with members of this social group. These groups outside the home encourage the child in their desire to gain independence from the parents and the family. The peer group and the teacher impact greater influence on social development among the other secondary socialisation agents.

The Peers

In child development, peers are children about the same age or maturity level. Same age peer interaction plays a unique role. Peers provide avenues for *social comparison*, and *social competence* training through *peer co-learning* and *peer influence*. According to Eccles, Wigfield and Schiefele (1998), positive social comparison usually results in higher *self-esteem*, while negative social comparison results in lower self-esteem.

Children who are accepted by their peers and who have good social skills often do better in school (Wentzel, 1996). Children who are rejected by peers, especially those

who are more aggressive, are usually at risk in a number of school-related activities. For example, they obtain low grades, and often dropout of school.

The Teacher

Children who have negative interactions with a number of their teachers do not do well in school (Stipete, 2002). They do not pay attention; do not complete assignments on schedule; and generally act out in the class. In general, school is an unpleasant place for such children.

Generally speaking, the school should not be an unpleasant place for any child. According to Noddings (1992:2001), children are most likely to develop into competent human beings when they feel cared for. Teachers are invited to develop the skill of knowing the children under the care fairly well. Indeed, children get to know that a teacher cares for them. They report that those teachers who care for them talk to the individual child. A teacher who cares listens; pays attention; is honest and fair to all; seeks to know each child's problems; addresses them by their names; and makes effort to make the class interesting. On the other hand, the teacher who does not care for the children teaches in a boring way; he keeps talking even when the children are not paying attention; he ignores and embarrasses children; he forgets their names; does nothing when a child does something wrong (Wentzel, 1997).

In essence, the *social climate* of the entire school impacts significantly on children's social development. We often talk about the *school tone*. The tone of the school refers to the general spirit, character, morale, and social climate of the school. When the tone of the school is excellent, it is supportive to the general *developmental needs* of the children. Children are motivated and challenged to develop self control through identification with and internalisation of the school values and norms. Children learn to get along well with others without external force.

(c) The Tertiary Socialisation Agent

The tertiary socialisation agent includes groups the child has fleeting contacts with. They are generally transitory – people the child may have contact with on their way to school, church, or market; contact in magazines and newspaper; contact on radio, television, internet, and the World Wide Web. The strength of influence these groups have on social development will largely depend on type of presentation, sensual appeal or attraction, and the contrasting theme with what the child ordinarily encounters. The *television* and the *cyberspace* stand out among these groups.

The Television and the Cyberspace

In Nigeria today, the *television* has become a ubiquitous household item. In rural communities, households that are so impoverished they do not have a toilet facility own television sets. In highly urbanised areas such as Lagos, families that cannot afford a rented apartment, but are squatters in uncompleted buildings and kiosks own television sets. *Television viewing* is a valued pastime for children and adults alike in Nigeria.

It may be true that the television, the *Internet*, and the *World Wide Web* are among the great frontiers of high technology. People predict that they will change the lives of everybody in the global village. However, educators are regarding these *untamed information media* with great caution. This is more so with regard to their effect on children's social development.

Children have increasingly become targets for *all manner of advertisement* and *pornography* on television screens, and the Internet. Educators worry about the extent to which parents are able to monitor children's television viewing, and their hook-on to the internet. The type, quality and educational value of what children view on the television are sources of concern. The type of materials and information children access on the internet, and the person(s) with whom they enter into personal interactive sessions are major sources of concern. Of no less concern also is the amount of time children spend on these ubiquitous *media of uncertain consequences*.

Some issues relating to children's access to information and communication technological media are not contentious. For example, in many homes, children spend more time watching the television than talking to adults or parents, playing with siblings, attending school or working on class assignments. Research findings (Wright, Huston, Reitz and Piemyat, 1994) suggest that young children do not fully understand the plots of the stories they view on the home video. Most children are not able to recall significant details of the stories they have viewed. Very often, the inferences children make about the motivations of the key characters in the stories they have viewed are limited, if not completely wrong. Also, children have difficulty separating fantasy from reality in television programmes. In summary, the consequences of children viewing television so much are not quite clear. Parents are therefore cautioned about the potential hazards existing in children's unfettered or *untamed access to television* and home computers. The direction of their impact on children's social development is not very clear.

3.3 Trends in Psychosocial Development

Erikson (1963), in his *psychosocial theory*, argued that social development starts at infancy and continues across the entire lifespan. His theory considers how the children come to understand themselves, and the meaning of their behaviour and the behaviour of others. Erikson's theory explains how society and culture present *challenges* that shape the child's social behaviour. According to the theory, social developmental changes may be conceived as a series of eight stages. Each stage presents a *developmental task* or a *crisis*. Each stage crisis is a turning point with positive and negative poles. The individual is expected to resolve each stage crisis. The more successful a child is in the resolution of a stage crisis, the more *psychologically healthy* the child will be. Unsuccessful resolution of a stage crisis leads to *pathology*. Pathology means that the individual finds it increasingly difficult to deal with the demands of the next stage of development. In other words, unsuccessful resolution of a stage crisis leads the individual to be more prone to *maladjustment* and *behaviour problems*. We outline below the first five stages of Erikson's theory. The first five

stages cover social development from infancy, through childhood, to adolescence.

Erickson's Stages

Stage One – Trust versus Mistrust

Erikson's first stage of psychosocial development occurs in the first year of a child's life – that is, during infancy. The development of *basic trust* requires warm, nurturant caregiving. The positive outcome is a feeling of comfort and minimal fear. *Basic mistrust* develops if the infant is deprived of nurturant and *contact comfort*.

Stage Two – Autonomy versus Shame and Doubt

The second stage of psychosocial development occurs between late infancy and toddler years, that is, the second year of life. After gaining trust in their caregivers, children begin to move freely, and explore the immediate environment. They begin to discover that their behaviour is their own. They start to assert their *independence*, and to realise their will. Caregivers might mistake this and interpret the child's actions as *stubbornness*. If infants are restrained too much or punished too harshly, they develop a *sense of shame and doubt*.

Stage Three – Initiative versus Guilt

This stage is the early childhood or pre-school years, ages 3 to 5. Young children begin to explore the neighbourhood. Their social world begins to widen. Children experience more challenges as they strive to know more about their widening social circle. In order to cope with these challenges, children engage in more active and *purposeful behaviour*. Children begin to insist on doing their own things. For example, at this stage, children begin insisting on bathing themselves, putting on their dresses, their shoes, combing their hair, and even washing their clothes. They want to be responsible to themselves.

Developing a *sense of responsibility* increases children's *initiative*. If children are thwarted in their efforts at caring for themselves, and made to feel that they are not yet capable of being responsible for their bodies and their belongings, they feel *discomfort*. They begin to develop *guilt feelings*.

Stage Four – Industry versus Inferiority

This stage corresponds to middle and late childhood or the elementary school years (between 6 years and puberty or early adolescence). The sense of initiative developed at the earlier stage brings children in contact with greater wealth of practical experience with tools and people. Children's energy is now directed toward *mastery of knowledge* and *intellectual skills*. Children at this stage show great enthusiasm for *learning*. Their imagination is expansive. The negative polarity for this stage is the danger of developing a *sense of inferiority*, unproductiveness, and incompetence. This

may happen if the primary school experience lacks intellectual challenge.

Stage Five – Identity versus Identity Confusion

This stage corresponds to the adolescent years (between 10 and 20 years). Adolescents want to answer questions like: Who am I? What is life about? Who am I going to become?

The adolescents are confronted with many new roles to explore. These include: gender role (being a man or a woman), romantic role, vocational role, and a definitive outlook on life. They seek to gain a *healthy self identity*. If adolescents do not have adequate opportunity to explore these different roles, they may develop *confused identity*.

3.4 Educational Implications of Social Development

The educational implications of socialisation to social development include the following:

- Behaving in socially appropriate and responsible ways is valued in its own right as an important educational objective. The development of *citizenship skills* and other important *life skills* such as cooperation, communication, self-care, and home making is entrenched as an objective of education in the national policy on education (Federal Republic of Nigeria, 2004).
- Social responsible behaviour helps to create a *classroom climate* conducive for instruction and learning.
- Anti-social behaviour can be highly detrimental to classroom learning by distracting students from academic activities.
- Social conduct impacts teacher's preference for students, which in turn influences the quality of instructional exchanges.
- Children tend to dislike classmates who start fights and break rules. Therefore, school children who display anti-social behaviours are at disadvantage in reaping the benefits of peer co-learning.
- Children who display anti-social behaviours are more likely to be labelled disabled academically.

SELF ASSESSMENT EXERCISE

Explain fully how the home experience of a child affects his/her behaviour.

4.0 CONCLUSION

Children acquire the unique qualities that make them social beings through a social process. This process ensures that the child lives the life they are immersed in. The social forces playing out in the family and other social agents are replicated in the lives of children.

After going through this unit, you must have come to the awareness that the way significant adults act in public and even in private impacts on children's behaviour. The dictum that when the mother cow chews cord, the young watches its mouth is very true of social development. You, as a caregiver, are sensitised to model pro-social and goal-oriented behaviours for children to emulate.

5.0 SUMMARY

This unit has taught the following:

- Children learn social rules, norms and nuances through socialisation;
- Socialisation may produce prosocial or anti-social persons;
- Modelling, contingency management and social cognition help children acquire prosocial behaviour;
- Family demographic characteristics, and parenting style impact on children's behaviour;
- Social comparison and peer co-learning aid social development;
- Untamed access to the television and the internet is a potential hazard to children's social development;
- The psychosocial theory states that society and culture present challenges that shape social behaviour;
- Warm, nurturant caregiving helps develop basic trust in infants;
- Children should be given opportunity to explore social relations among peers;
- The school is expected to model acceptable behaviour for children;
- Anti-social behaviour may impact negatively on school adjustment and performance.

6.0 TUTOR-MARKED AS ASSIGNMENT

1. Outline Erik Erikson theory of psychosocial development.
2. How does social development affect school adjustment and academic performance?

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UNIT 6 MORAL DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The Nature of Morality
 - 3.2 Development of Moral Judgment
 - 3.2.1 The Social Learning Perspective
 - 3.2.2 The Cognitive-Developmental Perspective
 - 3.2.2.1 Piaget's Cognitive-Developmental Perspective
 - 3.2.2.2 Kohlberg's Cognitive-Developmental Perspective
 - 3.3 Factors that Influence Moral Development
 - 3.4 Educational Implications
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- 5.0 Summary
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1.0 INTRODUCTION

The word “moral” is derived from the words “mores”. Mores refers to customs, folkways and conventions of a social group. The social group members are expected to conform to their mores.

Moral behaviour refers to a behaviour that tends to the good and rejects the evil. Behaviour is evil if it is unacceptable to and abhorred by a social group. Developing morality therefore signifies understanding and following a society's rights and wrongs.

Moral development describes changes in children's sense of fairness, of what is right and what is wrong. Note that the child's behaviour in this context is compared to the moral standard of the social group.

In this unit, we examine the nature of morality. We discuss the development of moral judgment, and the sense of justice. We outline the major factors that influence moral development.

Finally, we examine the educational significance of moral development.

2.0 OBJECTIVES

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

- describe the nature of morality
- outline the sequence in the development of moral judgment
- list and discuss the major factors that influence moral development
- discuss the educational significance of moral development.

3.0 MAIN CONTENT

3.1 The Nature of Morality

It is difficult to give a precise definition of the nature of morality. Different perspectives define morality differently.

According to Emmanuel Kant, a moral act is an act done from duty. An act done from duty differs from an act done in accordance with duty. An act is done from duty when the person acting does so because they feel some sense of obligation. Indeed, the individual has the option, and may choose not to act that way.

Act done in accordance with duty, carries with it some sense of compulsion. There is fear of punishment. If we define a moral act as an act done from duty or from a sense of obligation, it follows that a moral act is an act that can be applied to anybody. For example, the proposition “I help my neighbour in distress because I help anybody in distress” qualifies to be a moral act. It can be applied to anybody including oneself. In this sense, *morality* is a universal *principle* guiding human conduct.

Morality is *conduct* or behaviour arising from some *internalised standard* without reference to any group’s standard of behaviour, or to some possible consequence to the individual. A moral behaviour is *not selfish*. It is *not prudential*. It is *not random*.

Sociologists, however, define morality in relative terms. They conceive morality from the viewpoint of a *reference group standard*. To them, an act is moral, if it conforms to the particular reference group standard. This is, group mores, customs or expectations.

Therefore, sociologists define morality as behaviour that respects the rules and institutions of a society. They lay emphasis on *obedience to rules* and regulations. To sociologists, there is no moral act that can be applied to anybody. There are no *moral universals*.

Development psychologists consider morality in terms of children’s reasoning when faced with *moral issues*, and their attitude to immoral transgressions. To them, morality is the ability to *discriminate* between right and wrong.

3.2 Development of Moral Judgment

It is amazing to consider the great capacity of human beings have for good and evil. The question: “where does morality come from?” has often been posed.

We consider here two perspectives on the development of moral judgement, namely: the perspectives of the social learning theorists and the cognitive-developmental theorists.

3.2.1 The Social Learning Perspective

Social learning theorists focus on how *prosocial behaviour* evolves. Prosocial behaviour is a *helping behaviour* that is directed to benefit another person. Social learning theory emerges in children as a result of their *interaction with people* in their immediate and wider environment.

The key issue in social learning relates to how *rewards and punishments* have been managed to engender morally appropriate behaviour in children. The children are members of society. Therefore, they are expected to have regard to *approvals* and *disapprovals* or *generalised reinforcers* of society. It is by anticipating such generalised reinforcers that the child exerts self-control over their behaviour. Therefore, morality originates from *reinforcements* provided by *significant others* in society (Bandura, 1986).

Observation of *models* play a significant role in children’s learning of prosocial behaviour. *Abstract modelling* explains how this learning occurs. In abstract modelling, the child identifies with the model. Thus, when the model is directly rewarded for a pro-social behaviour, the child is indirectly rewarded also.

Abstract modelling, therefore is the process in which modelling paves the way for the development of more general rules and principles of behaviour. What this means is that, not all pro-social behaviours have to be emitted and rewarded directly for watch child for the child to learn general rules.

Observing a model receive reinforcement is adequate indirect reinforcement for learning to occur.

3.2.2 The Cognitive-Developmental Perspective

This will be discussed under the following sub-topics.

3.2.2.1 Piaget’s Cognitive-Developmental Perspective

Piaget (1994) reasoned that moral development follows a *developmental pattern* indicating increasing understanding of the meaning of justice.

Moral development, therefore, may be conceived as unfolding through three main levels:

Level One – Heteronomous Morality

Children aged 4 to 7 years are found operating under the *heteronomous morality* level. Children at this level believe in *imminent justice*. Misconducts should be punished immediately.

Rules are seen as unchangeable, and never varying. The rules have been created by an authority.

Level Two – Incipient Cooperation

Children 7 – 10 years fall in this level of morality. Play for children at this level becomes a clear social activity. They are capable of learning *formal rules*, and play their games according to this shared knowledge.

Rules are still seen as unchangeable though they understand the rules.

Level Three – Autonomous Cooperation

Children 10 years plus are found in the *autonomous level* of morality. Children at this level become aware that formal game rules may be modified by those who play it. They now know that rules of law are created by human beings.

Therefore, rules are subject to change as the players may wish. Issue of rules and *reasoning on justice* are no longer bounded in the concrete. Intentions are now taken in to account in matters of justice and morality.

3.2.2.2 Kohlberg's Cognitive-Developmental Perspective

Kohlberg (1994) contends that children pass through a series of stage in evolving a sense of justice and reasoning on moral issues. To him the evolution of moral judgment is tied to cognitive development. For example, school age children think either in terms of concrete, unwavering rules or in terms of the rules of society.

By adolescence, however, they are capable of reasoning on a higher plane, having attained formal level cognitive capacity. Adolescents are able to comprehend *abstract principles of morality*. Their standard for judging moral issues become predicated on *conscience*.

Kohlberg suggested a three-level sequence for understanding the development of moral judgment:

Level One – Pre-conventional Morality

At this level, children follow unwavering rules based on rewards and punishments. What inspires moral judgment is related to *obedience*, and self satisfaction.

Level Two – Conventional Morality

At the level of conventional morality, children approach moral problems in terms of their own position as *good, responsible* members of society. This is what Kohlberg called: *Good boy, good girl orientation*.

Level Three – Post-Conventional Morality

At this level, children invoke *universal moral principles* that are considered broader than the rules of the particular society children find themselves. To do the right thing is an obligation. Morality is then considered duty to one's own conscience based on *universal ethics*.

3.3 Factors that influence Moral Development

Several factors influence moral development. Among them are: maturation, rules and regulation, modelling and rewards.

Maturation

The cognitive-developmental perspective maintains moral judgment unfolds with increasing maturation. The quality of a child's moral reasoning is related to the quality of cognitive capacity of the child. Cognitive development is predicated on level of maturation.

Rules and regulations serve as guidelines for prosocial behaviour. They specify general expectations and thereby serve as a source of motivation to the child to conform to social expectation. The specific purpose for each rule or regulation when explained is an invaluable guide to behaviour. It serves as internalised reasons to conform.

Modelling

Moral development of children is not a matter of instruction and preaching. Significant others must also model the prosocial behaviours that they expect children to exhibit. Indeed, there is great need that parents and caregivers, in addition to instruction, should also "*walk the talk*" for the children to emulate.

Rewards

The child needs a confirmation whenever their behaviour conforms to expectation.

Effective *contingency management* helps in engendering prosocial behaviours of children, and also discouraging anti-social behaviours.

3.4 Educational Implications of Moral Development

The educational implications of moral development are as follows:

- Morality is not inborn or given by the creator. It is acquired through living in a community of human relations. There is need for both formal and informal education (the school and the family) to provide adequate opportunities for children to observe others acting a cooperative, helpful manner.
- Children should be encouraged to interact with peers in joint activities in which they share a common goal.
- Though society prescribes rules, regulations and standards for conduct, children should not be made to harbour a feeling of vileness or guilt for minor infractions on the standards of conduct. For one thing, children's understanding and interpretations of standards of conduct is at best, relatively naïve.
- Education in morality should not emphasise the intrinsic rightness or wrongness of actions. Children should be led to see that there are always alternative explanations for others' behaviour. Children should be made to understand that the behaviour of their peers has several possible interpretations.
- While a child's level of maturation may limit their understanding of moral precepts, the school should not just sit back and wait for maturation to occur. Intellectual discourse on moral issues may speed up the appearance of relevant cognitive structures that permit the child to reason about morality. Therefore, the school should provide a good setting in which values; beliefs and opinions may be critically examined.
- It may be true that contingency management engender prosocial behaviour, however, parents and teachers should be wary in the use of punishments or reproach to instill moral behaviour. The value of punishment in changing behaviour is very uncertain. Parents and teachers should rather select the appropriate behaviours exhibited by the child and nurture these through a system of rewards.
- Parents and teachers should make effort to explicitly teach children moral reasoning and self-control. Rules and regulations should be explained and understood in terms of their value for all stakeholders in a community of relations. Rules and regulations are no absolutes designed to tame children's freedom or excesses.

SELF ASSESSMENT EXERCISE

Examine how the moral lapses of a parent can affect the child.

4.0 CONCLUSION

Children are neither good nor bad by their nature. Moral behaviour is learned, like most other behaviours of children. The capacity for moral judgement and moral decision unfolds with maturation and experience.

There are universal principles that guide moral behaviour. Your duty, as a caregiver, is to create an enabling environment to challenge children to reason about moral issues. It is not enough to preach moral dogmas; adults must also “walk the talk”. Example is the best moral precept.

5.0 SUMMARY

This unit has explained the nature of morality, the sequence in the development of moral judgment, major factors that influence moral development and the educational significance of moral development.

6.0 TUTOR-MARKED ASSIGNMENT

1. Describe briefly the nature of morality.
2. Outline the sequence in the development of moral judgment.
3. List and explain the major factors that influence moral development.
4. Discuss the educational significance of moral development.

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MODULE 3 STAGES IN HUMAN DEVELOPMENT

Unit 1	Pre-natal Development
Unit 2	Infancy
Unit 3	Early Childhood
Unit 4	Middle Childhood
Unit 5	Adolescence

UNIT 1 PRE-NATAL DEVELOPMENT**CONTENTS**

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1.0 INTRODUCTION

The word *pre-natal* means the period of development before birth. Conception takes place when a male sperm cell unites with or fertilises the female egg cell. Conception marks the beginning of the pre-natal period of development.

The pre-natal period of development spans approximately nine calendar months or 265 days (plus or minus 14 days) of rapid growth and development. Individual differences may, however, occur in the length of the pre-natal period. The shortest time for the fetus to be born alive is 180 days. The longest time, regarded as the legal limit of post-maturity, is 334 days (Hurlock, 1972).

In this unit, we discuss the before – birth journey of the child, the period between conception and birth. We outline the critical stages during this period. We examine how the uterine environment influences development. We also examine the educational significance of pre-natal development.

2.0 OBJECTIVES

- outline the three major stages in pre-natal development
- describe the critical periods in pre-natal development
- explain why some periods in pre-natal development are regarded as critical
- list at least five factors that influence pre-natal development
- discuss the educational significance of pre-natal development.

3.0 MAIN CONTENT

3.1 Stages in Pre-natal Development

The pre-natal period consists of three distinct stages, namely: the germinal, the embryonic and the fetal stages. We discuss each of these stages in more detail.

1. **The Germinal Stage** (Fertilisation to 2 weeks)

The germinal stage starts when the male sperm cell fertilises the female egg cell. It is the shortest stage of the pre-natal period of development. It lasts for about two weeks following conception. During this stage, the new organism, now called the *zygote* travels towards the uterus. On reaching the uterus, the *zygote* becomes implanted in the wall of the uterus. The wall of the uterus is very rich in nutrients which nourish the *zygote*.

During the germinal stage, significant changes occur in the internal structure of the *zygote*. The stage is characterised by *rapid cell division*. In addition to increasing number, the cells of the *zygote* become increasingly specialised. The mass of cells separate into the outer and inner parts. Some of the cells form a protective layer around the mass of cells. Others begin to establish the rudiments of a *placenta and the umbilical cord*. When fully developed, the *placenta* serves as a conduit between the mother and the developing organism. The *placenta* provides nourishment and oxygen via the *umbilical cord*. Also, waste materials from the developing child are removed through the *umbilical cord*.

2. **The Embryonic Stage** (2 weeks to 8 weeks)

The stage of the embryo starts from the end of two weeks after conception and extends to the end of the second month. In the second week, the organism had become firmly secured to the wall of the mother's uterus. At this point, the child is called an *embryo*.

The major highlight of this stage is the differentiation and development of the major organs and the body systems. The embryonic disc first differentiates into three layers: the *ectoderm*, the *mesoderm* and the *endoderm*. Each of these forms a different set of structures as development unfolds.

- **The Ectoderm.** The outer layer is the *ectoderm*. The *ectoderm* forms the epidermis of the skin, hair, nails, teeth, sense organs, the brain and the spinal cord.
- **The Mesoderm.** The middle layer is the *mesoderm*. The *mesoderm* produces the dermis or the inner layer of the skin, the muscle, bones, blood, the circulatory system and the reproductive system.

- **The Endoderm.** The inner-most layer is the endoderm. The *endoder* produces the digestive system, the pancreas and the thymus.

Every part of the human body is formed from the three layers of the embryo mentioned above. The stage of the embryo is characterised by very rapid and orderly changes.

By the end of the embryonic stage the organism resembles a miniature human being. All the basic organs and features of the human being have been formed. However, the sex of the baby cannot be known at this point. Beyond this stage, no other changes in the features take place. The only further changes are in the relative size of the different parts of the body.

3. **The fetal Stage** (8 weeks to birth)

The fetal stage is the longest stage in the pre-natal period of development. During this stage, the child is instantly recognisable. The stage starts at about 8 weeks after conception and continues until birth. The organism, now called the *fetus*, undergoes outstandingly rapid changes. It increases in length about 20 times. Its proportions also change dramatically. At about the beginning of the fetal stage, the head is about one-half of the fetal size. At the time of birth, the fetal head is only about one quarter of the total size of the fetus.

The fetal stage witnesses increased complexity of the organs and systems. The organs and systems become more differentiated and operational. For example, at 3 months, the fetus swallows and urinates. Arms develop hands. Hands develop fingers. Fingers develop nails.

At this period, the fetus makes itself known to the outside world. It becomes increasingly active. By 4 months, the mother can feel the movement of the fetus. A wide range of fetal activities become noticeable. A wide range of fetal activities become noticeable.

The fetus can now turn, do somersaults, cry, hiccup, clench its fist, open and close its eyes and suck its thumb (Smotherman and Robinson, 1996). The fetus responds to a variety of sensory stimulation such as: taste, smell, sight, touch and sound. Indeed, it has been reported (Leacanu et al., Granier-Deferre and Busnel, 1995) that the fetus heard and responded to sounds it had heard repeatedly.

During the third trimester, the brain grows rapidly, expanding its abilities. The heart and lungs strengthen, making it possible for the fetus to survive on its own if birth comes. The fetus stops growing about 5 to 7 days before birth. It drops into position for delivery. A good number of normal, full-term fetuses end in birth 259 to 273 days after fertilisation (Rosenblith and Sims-Knight, 1985). We note that good nutrition on the mother's part increases the chances of normal delivery, and a healthy baby.

3.2 **Critical Periods in Pre-natal Development**

Critical periods in pre-natal development refer to periods when delicate and important

organs and systems of the body are being formed. These periods are considered critical because if the uterine environment is not conducive major structural abnormalities or pre-natal death occur.

Such abnormalities may include central nervous system deformities, organ or system deformities involving the heart, arms, legs, eyes, teeth, palate, external genitalia, or the ear. The effect of adverse uterine environment is most potent at the critical periods of pre-natal development.

The critical periods are: the first trimester or the first three months after conception, the seventh month, and the ninth month. We discuss in more detail each of these critical periods.

- **The First Trimester**

As has already been noted, the first three months of pregnancy includes the germinal and embryonic stages of pre-natal development. During this period, delicate organs and systems of the body form and differentiate. Structural abnormalities and physiological defects of the heart, the central nervous system, the spinal column, the eyes, the ears, the arms and the limbs are most likely to occur during the first trimester.

- **The Seventh Month**

By the seventh month of pregnancy, the fetus would have attained sufficient development to be viable. The fetus has a chance of survival outside the uterus if delivered *pre-term*. For a pre-term baby to survive, the central nervous system and the brain must have developed sufficiently to support partial regulation of breathing, swallowing and body temperature. If for whatever reason, the brain and the nervous system failed to complete their development, a pre-term baby will be negatively affected.

- **The Ninth Month**

By the end of nine calendar months or approximately 280 days of pregnancy, a child should be delivered without much problem. However, environmental conditions could introduce complications and make the birth process problematic.

Conditions such as a weak womb, a narrow pelvis, improper position of the fetus, maternal illness or malnutrition could result to prolonged labour. A convergence of several health factors, namely: poverty, poor antenatal care, low levels of immunisation and unsanitary delivery conditions make the ninth month and the birth process a very critical period in developing countries and especially in Nigeria (World Health Organisation, 2002).

3.3 Factors influencing Pre-natal Development

Fetal environment exert significant influence on fetal development. The degree of influence depends on the nature of the factor, the intensity and the time of exposure to factors. Among the factors are the following: mother's diet, mother's age, mother's illness and mother's drug use.

Mother's Diet

A mother's diet plays an important role in sustaining the rapid development of the fetus during the pre-natal development. Studies indicate that a mother who takes diet high in nutrients has fewer complications during pregnancy. Labour is also easier, and the baby generally healthier than a baby whose mother had a diet poor in nutrients (Morgane, Austin-LafFrance, Bronzino, Tonkiss, Diaz-Cixtra, Cintra, Kemper & Galler, 1993). It has been reported that protein and vitamin deficiencies in the mother's diet can result to eye and internal organs defect, and an increase in a number of malformation of the baby (Vasta, Haith and Miller, 1992).

The Mother's Age

The age of the mother at conception is an important factor that influences pre-natal development. Babies born to teenage mothers are exposed to greater risks than babies born to mothers in their twenties. The mortality rate of infants and premature deliveries are higher in babies born to adolescent mothers than in babies born to mothers in their twenties (Cnattingius, Berendes and Forman, 1993).

Furthermore, the risks involved in pregnancy are greater, not only for teenage mothers, but also for unusually old mothers. Older mothers are more likely to give birth prematurely, and their children are more likely to have low birth-weights. The incidence of children with *Down Syndrome*, a form of mental retardation, is more among mothers who are more than 40 years at the time of conception (Gaulden, 1992).

Mother's Illness

Infectious diseases abound in the African environment. This is more so in the slum areas of the cities. These diseases include: rubella virus, genital herpes, human immune-deficiency virus (HIV), some sexually transmitted diseases such as: syphilis and gonorrhoea; chicken pox, measles, tuberculosis, polio, cholera, leprosy and others.

When a pregnant woman contracts any of these diseases, it may not only affect her health, but it may also be transmitted to the unborn baby. Depending on when it strikes, an illness in a pregnant woman can have very serious consequences for the unborn baby. The onset of *rubella* in the mother prior to the 11th week of pregnancy is likely to cause in the baby blindness, deafness, heart defects, or brain damage (Sevey, 1982). Chicken pox may produce birth defects. Infants born to mothers with HIV/AIDS (Acquired Immune Deficiency Syndrome) may have birth abnormalities, including small, misshapen faces, protruding lips, and brain deterioration (Frenkel & Gaur, 1994).

Mother's Drug Use

Mother's use of drugs poses risks to the unborn child. Even drugs prescribed by medical professionals have sometimes posed serious consequences. In the 1950's, many women who were told to take *thalidomide* for morning sickness during their pregnancies gave birth to children with stumps instead of arms and legs (Vasta, Haith and Miller, 1992). The physicians who prescribed the drugs did not know that the thalidomide inhibited the growth and development of limbs that normally would have occurred during the first three months of pregnancy.

Pregnant mothers who used illicit drugs such as *marijuana* and *cocaine* gave birth to infants who are irritable, nervous, and easily disturbed (Feng, 1993). In particular, cocaine use was found to produce intense restriction of the arteries leading to the fetus, causing a significant reduction in the flow of blood and oxygen. This process increased the risk of fetal death.

Also, mother's use of *alcohol* and *tobacco* can have profound consequences on the unborn child. Studies have found that children whose mothers consumed substantial quantities of alcohol during pregnancy had below average intelligence and had problems in behavior and other psychological functioning (Feng, 1993; Shriver and Piersel, 1994). It is because of the risks associated with alcohol and tobacco smoking that physicians today counsel pregnant women to avoid any alcoholic beverages and tobacco smoking.

3.4 Educational Implications

The knowledge of the developmental process that takes place during the prenatal period is important for the following reasons:

- The uterine environment plays a significant role in shaping the course of development during pregnancy and after birth;
- The presence of *teratogenic agents* in the uterine environment has the most profound consequences on the child. A *teratogen* is an environmental agent such as drug, chemical, virus, atomic radiation, or other factor that produces a birth defect;
- The timing of exposure to a teratogen is important. At some state of prenatal development, exposure may have minimal effect; at some other stage, exposure may have profound effect. For example, the child's brain is most susceptible to teratogen from 15 to 25 days after conception. The heart is most vulnerable from 20 to 40 days following conception (Needleman and Bellinger, 1994);
- There is need to create awareness on the effects of teratogenic agents on children before and after birth for the benefit of women expecting to have babies. There is need to optimize the prenatal environment;
- Prescribed caregivers should be sensitive to signs of behavior problems, and malfunctioning of organs and body systems of children. Early detection of

abnormalities helps in appropriate referral and adequate intervention.

SELF ASSESSMENT EXERCISE

Many pregnant women in Nigeria live in extreme poverty and in unhealthy environments. How would these affect the unborn child?

4.0 CONCLUSION

Prenatal describes the pre-birth (before-birth) journey of the child. Every child begins this journey as a single cell, much less than a dot. Very complex transformations and very rapid growth occur during the prenatal stage of development. However the pre-birth journey of the child ends depends on a number of factors, including the mother's health, genetic influences, and forces in the environment outside the life of mother and child.

The prenatal period is crucial because its challenges continue to influence future physical characteristics and psychological abilities of the individual. As a child caregiver, you are invited to be aware of the challenges of this period of the child's life.

5.0 SUMMARY

In this unit, we considered the major stages in prenatal development; the critical periods in prenatal development. We also considered some periods in prenatal development that are regarded as critical.

We discussed the five factors that influence prenatal development and the educational significance of prenatal development.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the three major stages in prenatal development.
2.
 - (a) What is a critical period in prenatal development?
 - (b) Outline the characteristics of each of the three critical periods in prenatal development.
3. State at least four factors that influence prenatal development.
4. Examine the educational significance of the challenges of prenatal development.

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UNIT 2 INFANCY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Developmental Landmarks
 - 3.1.1 Physical Growth and Motor Development
 - 3.1.2 Cognitive Development
 - 3.1.3 Psychosocial Development
 - 3.2 Developmental Tasks
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1.0 INTRODUCTION

Infancy covers the period of development from birth to two years. It is the earliest time of life for children. Newborns, called *neonates*, come into the world programmed for physical growth, emotional reactions, locomotion, speech, social interaction, thinking and reasoning. Babies possess unique personalities that will greatly influence the course of their lives. During infancy, tremendous changes in motor and sensory abilities bring children closer to maturity. In this unit, we discuss changes in physical structure and dexterity, changes in perceptual and language abilities, and changes in psychosocial behaviour of children during infancy. We also outline the tasks these children are expected to master, and the educational significance of those changes.

2.0 OBJECTIVES

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

- outline the major developmental landmarks in physical and motor, cognitive and psychomotor facets of infant development
- list and explain the major developmental tasks infants are expected to master
- discuss the educational significance of the changes that accompany development at infancy stage.

3.0 MAIN CONTENT

3.1 Developmental Landmarks

Developmental landmarks would be discussed under the following sub- topics:

3.1.1 Physical Growth and Motor Development

Children are born with many reflexes. These are built-in physical responses. Primitive reflexes ensure the survival of the baby after birth. Examples of primitive reflexes include: crying, grasping, and sucking reflexes. Postural reflexes, such as: stepping and swimming, help newborns adapt to the new world. Stepping and swimming reflexes help the baby to become oriented to the environment.

Generally, newborns are pre-wired to breathe, to respond to temperature changes, touch and noise. They are pre-wired to respond and take in nourishment. These reflexive responses are important determinants of healthy development.

Physical growth and motor development follow a direction. Physical growth and motor development start from the upper areas of the body to the lower areas. This is *cephalo-candal direction*. At birth, for example, the head of a newborn is much bigger than the rest of the body.

Physical growth and motor development also proceed from the centre of the body to the peripheries. This is *proximodistal direction*. For example, the chest and the trunk develop and reach adult status before the limbs.

Children do not grow steadily. Growth takes place in *spurts*. According to Lampl, Veldhuis and Johnson (1992), children may grow as much as one centimetre in a day and then go for days or weeks without any growth.

Physical growth is more rapid in the first year of life than at any other point in time. By the end of the first year, children's weight has tripled their birth weight.

Infants do not just grow physically; there is also a discernible pattern of changes in motor changes. We can cite some examples of these changes. At birth, the infant's eyes roam about without direction. A few days later, the infant's eyes are able to stare at an object for a brief period. By four weeks, the infant's eyes are able to follow a dangling ring. By four months, a baby is able to hold and look at a rattle.

The examples cited above indicate a patterned connection between the muscles that move the eyes and impulses in the brain. This signifies that there is teamwork between the eyes and the hands. There is coordination of motor actions, and voluntary control of muscles. Increasing *voluntary control* of muscular movements helps the child to acquire greater mobility.

The more control children gain of their voluntary motor actions, the greater is their ability to venture the environment. The motor achievements of children at the infancy stage of development include:

1. **Postural Control** – Postural control is the ability to stand upright. This ability may be observed progress from lifting head, lying on stomach, rolling over, lying, sitting propped up, to standing holding on to something. 90 per cent of children achieve postural control by the end of the first year of life.
2. **Locomotive Control** – Locomotive control is the ability to move around. ability is observed progress from rolling on stomach, crawling on buttocks, creeping on arms and knees, climbing stairs, walking when led to walking alone. 90 per cent of children achieve locomotive control by the end of 15 months.
3. **Manual Control** – Manual control is the ability to manipulate objects. It involves the use of *fine motor skills*. Fine motor skills appear when the child is able to coordinate sensory information with motor actions. An example of manual control is shown in *prehension*. Prehension is the controlled act of reaching for and grasping an object. Reaching and grasping is achieved through *eye-hand coordination*. Prehension appears around four months. Prehension signals a move from gross to fine movements and paves the way for gross and fine motor coordination.

Frankenburg, Frandel, Sciarillo and Burgess (1981) summarised motor achievement of children during infancy as follows:

S/N	SKILL	AGE IN MONTHS
1.	Lift head when lying on stomach	3 months
2.	Sits propped up	4 months
3.	Rolls over	5 months
4.	Sits without support	8 months
5.	Stands holding on	10 months
6.	Walks holding on	13 months
7.	Stands momentarily	13 months
8.	Stands alone well	14 months
9.	Walks well	14 months
10.	Walks backward	22 months

These figures indicate averages, that is, when the average healthy child achieves the skill. Many children will fall below or above the average. Increasing manual and locomotive dexterity demands that caretakers provide a safe environment for the child to explore.

3.1.2 Cognitive Development

Physical growth and motor development are at the heart of cognitive achievements at infancy. As locomotive and manual control increases, children venture into the environment of their world. The things they find and the experiences they have significantly influence the course of cognitive development.

Cognitive development at infancy stage of development involves the development of *sensorimotor activities*. The process of coming to know during infancy is typified by an *organisational process*. The major landmarks in cognitive development during infancy include:

1. Organisation of Reflexes

At infancy, the child's inborn reflexes become organised into *schemes*. Schemes action patterns for understanding the environment. Schemes are self-initiated activities. Examples of schemes include sucking, kicking, grasping, crying, hitting. Building of schemes become increasingly more complex as the child's development progresses.

2. Object Permanence

Perceptual abilities develop rapidly during the first year of a child's life. The child achieves object permanence during the first year of life. The child comes to know that an object exists even when it is removed from their *field of vision*. The object continues to exist in time and space outside the child, even when the child cannot access it. The evidence for the development of object permanence is when children begin to actively seek or search for a hidden or missing object which they want.

3. Active Experimentation

Active experimentation follows the child's achievement of object permanence. Children begin to explore and discover new properties of objects. Instead of mere fitting of existing schemes to new situations, children now actively vary their actions to produce different outcomes. Their actions resemble that of scientists gathering information through trial and error.

4. Mental Representation

Between 18 months and two years, children begin to use mental representations.

Objects that are not seen can be mentally represented and manipulated using words, symbols, gestures and mental images. Use of symbols is the basis of pretend play or make-believe plays of children. Thus, mental representation signals the beginning of thought.

5. Language

Many children utter their first word by the age of 12 months. From this time onwards, children begin to use language to identify things, speak with others, construct past events, and to influence actions in the future.

3.1.3 Psychosocial Development

During infancy, the transformation from a helpless newborn to a baby capable of forming close relationships with others takes place.

The landmark achievements in psychosocial development of the infancy stage of development include:

1. Attachment Bonding

An attachment bond describes a child's connection with a caregiver. This connection provides the child a sense of safety and security. As children grow older, attachment with a caregiver ensures that they are cared for. The emotional relationship that develops between the child and the caregiver enables the child to venture with confidence into the world feeling loved and secure. Bonding begins at birth, and is strengthened by reflexive smile and crying.

2. Social Smile

Social smile follows attachment bonding. Eye contact with a human face provokes social smile as distinct from reflexive smile which occurs mainly when the baby is asleep. Social smile ensures that the caregiver will continue to look at, pick up, hold, stroke, feed and love the baby. It makes caring for the child enjoyable and rewarding.

3. Crying

At birth, crying is reflexive. Crying is the reflex response to choking which allows the child to take in their first breath. Crying elaborates into a scheme when it becomes melodious, signifying different states such as wet, hot, hungry, uncomfortable, seeking attention or in pain.

Crying generally increases until about six weeks of age to two months. According to Milgrom, Westley and McCloud (1995), crying in children declines as they get older, and peaks again between 12 and 18 months. Crying peaks when children begin to display negative emotions and may reach the point of *temper tantrums*.

Infants cry for many reasons. Their reasons for crying change with age. Babies cry when they are uncomfortable. As they get older, children may cry when they are afraid – at the sight of a stranger or an animal. They may also cry when frustrated – when the mother is out of sight. In all, crying has a survival value. It ensures that the attention of the caregiver is drawn to the child's problem.

4. Laughing

Laughing in children appears at about six months of age. Physical stimulation such as tickling; and visual stimuli like the mother's own laughing provoke infant's laughing. By the end of the second year of life, children are able to participate in fun-making activities like pulling on the mother's ear, or biting the mother's nipple.

5. Social Referencing

Social referencing appears in the first year of life. Social referencing is the ability to seek out emotional cues from trusted adults. Children use social referencing to know how to react to new situations. Social referencing ensures that children understand facial expressions, and voice tones that signify various emotional states. Children are able, for example, to differentiate emotions such as anger, happiness, approval, and disapproval. Social referencing impacts considerably on a child's social behaviour. For instance, social referencing is the basis of the development of *empathy feeling*.

6. Self-awareness

By 18 months, self-awareness has appeared in children. Self-awareness describes the sense of oneself as distinct and different from other persons. Self-awareness makes it possible for the child to experience secondary emotions such as; pride, shame, guilt, embarrassment and jealousy. Self-awareness paves the way for children to see peers as individuals. It aids them in forming friendship based on trust and shared interest.

3.2 Developmental Tasks

To attain the goal of development, the child must learn to become worthy, responsible adult. The process of attaining this goal demands that the child performs some *critical tasks* at certain times of their life. Havighurst (1982) called these critical tasks *developmental tasks*.

When a child masters developmental tasks for any stage of development, they feel a sense of satisfaction. The child is encouraged to go on to new challenges. Difficulty with developmental tasks slows a child's progress towards future accomplishments. This inability to master developmental tasks leads to unhappiness and social disapproval. Difficulty impacts negatively on the attainment of personal independence.

The number of developmental tasks, and the nature of these tasks that a child must master at different age levels, depend on the child and the particular culture the child finds him/herself in.

However, some tasks are typical and cut across individuals and cultures. We outline below the typical developmental tasks of infancy.

1. Learning to Walk

The child at this stage of development is expected to master the skills of walking. Mastery of these skills ensures that the child learns during subsequent stages to run, jump and skip.

2. Learning to Talk

The child utters their first word between 12 and 18 months. With the first word uttered, talking begins. Speech is engendered by the forces of maturation and learning. Mastery of speech ensures that the child succeeds in achieving effective communication and social intercourse during subsequent stages of development.

3. Learning to Eat Solid Food

At this stage, the child is expected to master the skills of taking solid food and be weaned from the breast. The nature of the weaning process, the age at weaning, and the schedule of feeding during weaning, all have profound impact on later development of personality.

4. Learning to Control the Elimination of Body Waste

The child must learn to urinate and defecate at socially acceptable times and places. Toilet training is the first moral training the child receives. The stamp of this first moral training may persist in the child's later character.

5. Learning to Trust Self and Others

The child is expected during infancy to learn to trust caregivers as providers of contact comfort, nourishment and security. The child must also learn to trust self as an efficient system capable of self control. Trust in infancy sets the stage for a lifelong expectation that the world will be a safe and pleasant place to live.

3.3 Educational Implications

The educational implications of infancy development are as follows:

- Early attachment behaviour has significant implication for adult personality. Children form an internal working model of their social world. This model is patterned after the relationships pattern between the child and the caregiver, especially during feeding, toileting and cleaning, and contact comfort. Children carry this model through life, and it influences school experience, career and social relationships.
- Parents and caregivers must take note that malnutrition in infancy results in stunted growth, cognitive delays and motor retardation. Infant malnutrition is a significant public health and educational issue in Nigeria.

- The ability to reach for and manipulate objects is important for the infant's motor and cognitive development. Caregivers should provide adequate opportunity for children to move around and manipulate objects in a safe environment.
- The development of any skill depends on both maturation and experience. Caregivers should be sensitive to match experiences provided with the level of maturation children have attained.
- The goal of parenting and education is creating an enabling environment to aid children master life skills. Parenting and education should not constitute an obstacle to children's activities that lead to personal independence.
- Newborns are especially prone to childhood diseases. Parents are encouraged to take advantage of immunization to protect children against various childhood diseases.
- Emotional health of an infant depends on a continuous warm and intimate relationship with the caregiver.

SELF ASSESSMENT EXERCISE

Describe the general characteristics of development at infancy.

4.0 CONCLUSION

Dramatic transformations occur during infancy in the basic biological equipment the child is born with. Basic reflexes elaborate into patterns of behaviour. The obviously helpless infant soon transforms into a lovely baby who partakes in the give-and-take of active human relations. Skills that help the infant venture into the world are mastered during infancy, as the various body systems differentiate and become more efficient and perceptual abilities increase.

In the next unit, we follow the child as they venture into the neighbourhood environment, the world of peers and the world of preschool.

5.0 SUMMARY

In this unit we examined the major developmental landmarks in physical and motor, cognitive and psychomotor facets of infant development. We also listed and explained the major developmental tasks infants are expected to master. Finally, we discussed the educational significance of the changes that accompany development at infancy stage.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the major cognitive and psychosocial achievement of children during the infancy stage of development.
2. Enumerate the major developmental tasks infants are expected to master.

3. Discuss the educational significance of major changes that accompany development at infancy.

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UNIT 3 EARLY CHILDHOOD**CONTENTS**

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1.0 INTRODUCTION

Early childhood covers the period between two and six years. During this period, children's development is visible as dramatic succession of remarkable changes and milestones in the development of motor skills, cognitive abilities and psychosocial skills. Early childhood is the period children are able to move around in the immediate environment.

Because early childhood children move around exploring and manipulating objects in the environment, there is tremendous stimulation of all the sensory modalities. Perceptual abilities develop further, cognitive functions change, and the appearance of language improves communication. The years between two and six years appear to be a period of newfound authority and control over the world.

In this unit, we outline the changes children undergo in physical structure, cognitive abilities and social relationship during early childhood.

We also outline the critical tasks children at this stage of development are expected to master. Finally, we discuss the educational significance of those changes.

2.0 OBJECTIVES

- outline the major motor, cognitive and psychosocial achievements of children in early childhood
- list and explain the major critical tasks children are expected to master;
- discuss the educational implications of changes that accompany development during childhood.

3.0 MAIN CONTENT

3.1 Developmental Landmarks

The developmental landmarks would be discussed under the following sub-topics:

3.1.1 Physical Growth and Motor Development

During early childhood, physical growth continues at a steady pace. The growth rate at early childhood is, however, slower than at infancy. In the main, children change significantly in shape and size.

In early childhood, the body becomes less rounded. It becomes more muscular. Towards the end of early childhood, the body fat is less than 50 per cent of body fat at one year of age. The head to body proportion reduces from 25 per cent at birth to about 12 per cent at the age of six years. By the end of early childhood, children's arms and legs lengthen. Their physical structure becomes more adult-like.

By the end of early childhood, the brain has attained its adult weight. The brain has generated significantly more neural connections. Neural communication becomes faster and more efficient, especially in the brain areas controlling movement, emotion and thought processes.

Brain lateralisation appears in early childhood. That is, the brain divides into two hemispheres – the right hemisphere and the left hemisphere. Brain functions such as: language, logic and formal thought are controlled by the left hemisphere. Other brain functions such as music, art, creativity and spatial perception are controlled mainly by the right hemisphere.

Take note that children's height and weight are usually described in terms of *percentile*. If, for example, a child's height is in the 80th percentile, it means that the child is taller than 80 percent of all children of their age, or that the child is shorter than 20 per cent of children of their age.

We also note that the findings of Oyedeji, Olamijulo, Osinaike, Esimai, Odunusi and Aladekomo (1996) indicated that Nigerian children aged one to six years fell below international standard in height and weight measurements. Nigerian children averaged only 67 per cent of standard height, and less than 60 per cent standard weight. This finding may be related to childhood malnutrition, and impoverished socio-psychological

environment which most children in Nigeria live with.

During early childhood, the phenomenal increase in gross motor and fine motor skills take children far from the world they have known. Refinements in gross motor development enable children to move around, while refinements in fine motor development enables children to grasp and draw.

According to Beaty (1986), Knobloch and Pasamanick (1974), milestones of motor achievement in early childhood include:

1. **Climbing** – By the end of early childhood, most children are able to climb down stairs, alternating feet with each step.
2. **Drawing** – By six years of age, most children are able to copy a square.
3. **Pedaling** – By the end of childhood children who have the opportunity are able to ride a two-wheel bike.
4. **Self-care** – Most children at this age are able to bathe themselves, dress without help and fasten buttons and shoe laces.
5. **Writing** – By the end of childhood, most children are able to copy numbers and letters.

The acquisition of motor skills follows a developmental sequence. First is the *cognitive stage*. Children discover the type of physical skill required to perform a task. This is followed by the *associative stage*. Children engage in trial and error to correct their own mistakes. Finally, children reach the *autonomous stage*. In this final stage, children exhibit a fine motor skill without making mistakes. According to Schmidt (1982), this sequence is played out for each new motor skill children learn.

3.1.2 Cognitive Development

Early childhood coincides with Piaget's pre-operational period of cognitive development. It is marked by profound gains in cognitive and linguistic development. Increased brain growth broadens and deepens cognitive skills. However, as Piaget had pointed out, at this stage, children's cognitive structures do not permit them to do mentally what they are able to do physically. We outline here the major landmarks in cognitive achievement of children in early childhood stage of development.

1. Mental Representation

Early childhood children continue to elaborate on the cognitive ability of mental representation which they achieved toward the end of infancy. The evidence for this may be observed in their love of *pretend play*.

Pretend play is a play in which children flexibly device all kind of make-believe objects

and events to represent the real objects and events. Children pretend to talk on telephone, for example. They act like one of their parents. They pretend to be asleep. They imitate a television character.

In all of these, children pretend to do things and act as if imaginary objects exist.

2. Egocentric Thinking

Egocentrism is a form of self-referencing. It is the belief that others think and feel as one does. Children in the pre-operational stage are unable to consider the positions of others. They view the world from their own perspectives. Their actions are characterised by *centration*; focusing on only one aspect of a stimulus situation; and constrained by appearance.

3. Language

Language develops rapidly during early childhood. Sentence length and complexity, vocabulary, syntax and grammar improve tremendously. With increased facility in language use, information processing speed increases. Memory and attention span improves.

4. Rudimentary Concepts

By the end of early childhood, children begin to form rudimentary concepts, such as: big and small, boy and girl, day and night. They are unable, however, to understand concepts relating to the physical world such as: space, size, shape, number time and age.

The cognitive achievements outlined above help to improve children's communication skills. By the end of early childhood, children are becoming more social beings.

3.1.3 Psychosocial Development

Early childhood is a critical period for social expansion. Children venture into the world of their peers. They build new relationships, and thereby begin to uncover their true selves. We outline in this section, the major psychosocial achievements of children during early childhood.

1. Self-recognition

Early in this period, around 24 months, children begin to recognise themselves in mirrors, photos and videotapes.

2. Self-definition

Self-recognition engenders the process of self-definition. Self-definition is the ability to notice difference between oneself and others.

By early childhood, children are able to notice the characteristics that make them

unique. They are able to achieve this through increased interaction with peers and peer-comparison.

3. Self-esteem

As children interact with other children of their age and compare their unique qualities, a feeling of self-esteem appears. Self-esteem describes the child's evaluation of self as "good, sweet and likeable" or as "bad and unlikable". Self-esteem is the root of self-concept which appears and elaborates in the next stage, middle childhood.

4. Gender Identity

Gender identity describes a child's sense of being male or female. It is an awareness and identification of oneself as male or female. By the end of early childhood, most children have achieved gender identity.

Usually, parents assign roles to children based on gender expectations. Performing gender roles help children to define their own gender. What this means is that by the end of early childhood, children have incorporated into their identity society's expectations of what maleness or femaleness is.

Gender identity influences children's patterns of play, lifestyle, career choices, parenting beliefs and indeed, the entire worldview of children.

5. Initiative

By the end of early childhood, most children's activities indicate purposefulness. Children are capable of setting goals and planning their activities. They are able to make plans, set goals, and strive to achieve those goals. For example, they are able to take a wall clock apart to see how it runs; they are able to make a phone call and chat a while; they are able to do the dishes or help a parent wash the car. Play becomes more constructive and cooperative, and social skills become important and continue to bolster.

3.2 Developmental Tasks

As children venture into the new worlds of social relationships, they face new challenges. They are expected to master new tasks that are appropriate for their age. We outline here the major developmental tasks of early childhood stage of development as suggested by Havighurst (1982).

1. Learning Sex Differences and Sexual Modesty

The kinds of sexual behaviour children learn and the attitudes and feelings they develop about sex in these early years may have an abiding effect upon their sexuality throughout life.

By the end of early childhood, children are expected to master gender roles. They are expected to internalise and the significance of these behaviourally, morally and socially.

2. Achieving Physiological Stability

It takes training for the child to achieve physiological stability. The way the child's body settles and stabilises during early childhood will impact on later poise and elegance. By the end of early childhood, children are expected to master good pose in posture and stepping out.

3. Forming Simple Concepts of Social and Physical Reality

Maturation and learning aid the child to form a stock of concepts. The child is expected to master sufficient vocabulary to be able to name and identify the different aspects of the social and physical world around them. This forms the basis for conceptual schemes development during middle childhood.

4. Learning to Distinguish Right and Wrong, and Developing a Conscience

During early childhood, the child is expected to master the warning and punishing voices, and the peculiar displays of affection and punishment of parents. This forms the basis of the child's conscience and later structure of values and moral character.

3.3 Educational Implications

The changes during early childhood in the various facets of development and the accompanying developmental tasks have some significance for educational practice. We outline some of the educational implications of development at early childhood here:

- It is impossible to separate health issues for children from social issues. Malnutrition, cramped and miserable living conditions, and childhood diseases generally coexist. Policy issues in early childhood education should be approached multi-sectorally, involving stakeholders in education, health and social welfare.
- Caregivers should be sensitive to provide developmentally appropriate and growth fostering responses to prompts or signals of children. This will help to enhance the give-and-take in a mutually rewarding exchange with children.
- If parents and caregivers are encouraging creativity and exploration, children see the world as full of opportunities. When parents and caregivers are discouraging or punishing, feelings of guilt can arise and children may be inhibited in their striving to achieve personal control of their world.

- Brain lateralisation is responsible for handedness in children. The preference to perform motor activities using the right or the left hand depends on whether the right or the left hemisphere is dominant. Forcing a child to change handedness confuses the child's brain functions. On no account should parents or teachers force a child to change handedness.
- The attitude of caregivers toward a child significantly influences the child's self-esteem. Caregivers should develop a positive attitude towards the child and caregiving to impress on the child that the child is important, special and loved. This way, children build a positive self-image.
- We note that an important part of friendship and any close emotional relationship is the ability to put oneself in another's place, and vicariously experience the other person's emotions. Children learn to be helpful and caring when parents and caregivers are invited to model the skills of empathy feeling.
- In general, caregivers should see children as imaginative and creative creatures that are capable of increasingly sophisticated thinking and skills if appropriate stimulation and prompts are provided.

SELF ASSESSMENT EXERCISE

Rapid increases in gross and fine motor skills launch children into a new world. Explain how this happens.

4.0 CONCLUSION

Early childhood is a period when children venture into the world. It is a critical period for social expansion and friendship building. Children, in this stage of development, begin to uncover their true selves. Parents and caregivers are expected to know what developmental changes and challenges children go through during early childhood. This knowledge will equip parents and caregivers to understand the child's behaviour, and to establish an enabling environment for the child's development.

5.0 SUMMARY

This unit examines the major motor, cognitive and psychosocial achievements of children in early childhood. We listed and explained the major critical tasks early childhood children are expected to master, and finally, we discussed the educational implications of changes that accompany development during childhood.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the major achievements of children in motor, cognitive and psychosocial skills during early childhood.
2. What are the major developmental tasks children are expected to master during early childhood stage of development?

3. Discuss the significance for educational practice of the major changes and challenges children go through during early childhood.

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UNIT 4 MIDDLE CHILDHOOD

CONTENTS

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1.0 INTRODUCTION

The transition to middle childhood involves a steady growth process. Physical growth and motor development continues. Great advances in cognitive development are achieved. Being the school-age, children are now in the primary school. Their social circle expands tremendously. Language and communication skills differentiate further. Children in the middle childhood are generally captivated by their physical selves. They are curious about how far their changing bodies will take them. In this unit, we outline the major developmental landmarks of middle childhood. We also outline the critical developmental tasks of this stage of developmental tasks of this stage of development and the educational implications.

2.0 OBJECTIVES

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

- outline the major landmark a physical growth and motor development, cognitive and social development of children in the middle childhood children are expected to achieve
- highlight the critical developmental tasks middle childhood children are expected to achieve
- discuss the educational implications of developmental changes at middle childhood.

3.0 MAIN CONTENT

3.1 Developmental Landmarks

This will be discussed under the following sub-topics:

3.1.1 Physical Growth and Motor Development

Between the ages of six (6) and twelve (12) years, children grow physically and change in many ways. Physical growth is steady and moderate during middle childhood. However, there are great variations in children's growth between six (6) and eleven (11) years, due to differences in genetics, nutrition and emotional health. The average height of children at eleven (11) years is about two metres.

The facial features of school-age children gradually take on a more mature expression resembling adult facial structure. The face becomes larger, the forehead flattens, the nose enlarges and the jaw widens. Children lose their baby teeth. Permanent teeth appear. The number of bones in their hands, feet, wrist and ankles increases. Visual maturity is reached between six and seven years.

During middle childhood, the heart increases in weight, but heart rates decline. The size of lungs expands. The respiratory system becomes more efficient. By the end of this stage of development, the child's brain is almost its adult size and weight.

Sex differences in physical growth could be observed between 11 and 12 years. Girls become slightly taller and heavier than boys. Girls tend to accumulate more body fat than boys. This gives the girls more curved and flowing contours. Boys develop more muscles. They gain an edge over girls in strength and speed.

Children do not only grow physically during middle childhood. They also develop mastery and control of their muscles. Gross motor and fine motor skills significantly improve. *Reaction time* improves. That is, children react faster to a stimulus.

During the stage, children are able to learn how to bike, swim, weave baskets, build and fly kites, play soccer, write, type, draw, paint, throw ball, use household tools, mold animals from clay, balance on one foot and generally, help with household chores.

Studies (Lansdown and Walker, 1991) indicate that there are gender differences in gross motor and fine motor activities. Boys are superior to girls in activities involving gross motor movements such as: Throwing, catching and hitting balls. Boys also tend to be stronger and more muscular than girls. Girls are, however, better coordinated more flexible and have superior balance. Girls do better in areas like gymnastics and rope jumping.

3.1.2 Cognitive Development

Children change dramatically in cognitive abilities during middle childhood. Organised school experience afford children enhanced intellectual options and a greater range of social intercourse. Thus, they are able to develop skills they would need to transit to adolescence.

Middle childhood is the *concrete operational* stage of development. During this period, children learn the *principles* by which the world operates. Children begin to use mental activities called *operations* in which *images* or *mental representations* are manipulated or reversed. School-age children perform operations only on *concrete objects* or concepts. *Intuitive thinking* gives way to more *logical thinking*.

Major cognitive achievements or landmarks during middle childhood include:

1. Conservation

Conservation describes the principle that changing the quantity or appearance of an object or substance does not affect its quantity. Mastery of the different aspects of conservation appears in a progressive and specific sequence. *Number conservation* appears first. This is followed by *conservation of quantity* or mass. *Volume conservation* appears last.

The development of three related concepts helps children to attain conservation. These concepts are:

- **Identity** – the principle that an object remains stable regardless of a change in its appearance.
- **Reversibility** – the ability to mentally reverse the steps in a sequence of operations.
- **Decentration** – the ability to concentrate on more than one dimension of physical change at the same time.

2. Classification

Classification describes the categorisation of items into a particular class or set. Putting oranges, grapes, mangoes, pawpaw, sour-sup, applies in the category of fruits is an example of classification. Categorising dogs, bats, snakes, earthworms, sparrows as animals is classification.

3. Seriation

Seriation describes the mental action of imposing order, hierarchy or levels within a classification. For example, a family of father, mother, brother, sister can be ordered from biggest to smallest; tallest to shortest; oldest to youngest.

4. Concept Formation

This describes the mental action of classifying objects according to use or function. This involves knowing the differences among the objects. Middle childhood understand the concept of mother or father; the concept of boys and girls. They also understand physical properties such as: space, time and number concepts.

At this stage, spatial concepts appear. Children begin to develop *cognitive mapping skills*. That is, they are able to mentally represent the environment by combining landmarks and routes.

5. Problem Solving

Problem-solving involves thinking through questions and issues in an attempt to gain insight or come to solution.

School-age children develop various *metacognitive skills* and *memory strategies* which aid them in school work involving reading, writing, comprehension, evaluation and problem-solving.

6. Sense of Humour

Sense of humour is the ability to joke, laugh, display wit and understand *incongruities in behaviour* or word use.

Children's sense of humour develops along with their cognitive abilities during middle childhood.

7. Meta-communication

This is the ability to talk about language or *linguistic awareness*. At middle childhood, children's language skills – vocabulary, grammar and pragmatics become increasingly refined. These enhance effective conversation and fruitful social intercourse.

3.1.3 Psychological Development

During middle childhood, children's social circle expands. Children continue to discover who they are in relation to others, especially peers. Among the developmental landmarks of this stage are the developments of:

1. Sense of Self

At this stage, children refer to their psychological traits – abilities, competence, attractiveness – to define themselves. Sense of self differentiates through a process of *comparison to peer* and significant others. *Social comparison* helps a child to understand their standing and identify based on social reality.

2. Industry and Competence

Middle childhood is a stage children strive to master social skills and achieve competence.

Children get to believe in their own ability to initiate activities, learn new things, and accomplish their goals. It is a crucial time for children to learn the *tools of culture*. Children establish work habits that will carry them through life.

3. Self-esteem

At this stage, self-esteem grows and differentiates. A sense of *self-efficiency*, an appraisal of what one can and cannot do, develops.

4. Psychological Self

School-age children's description of themselves becomes more complex. Description of self moves from an external psychological description to a more internal psychological description.

Children, at this stage, are able to differentiate various aspects of their selves. They are able to understand that a person can have inner self and outer self. This is the realisation that a person may appear outwardly different than they really feel inwardly.

5. Self-Concept

Middle childhood children are able to separate their self-concept into four dimensions: academic, emotional, physical and social.

6. Social Cognition

Social cognition describes the child's ability to think about and understand three key components of social relationship, namely: *perspective taking*, *information processing* and *social knowledge*.

By middle childhood, children are able to understand another's point of view. They are able to adequately process information so that they are able to enjoy peer relationships. They are also able to understand the dynamics of forming relationships and learning the schemes by which positive relationships are formed.

7. Conventional Morality

Middle childhood children approach moral problems from the perspective of maintaining social respect and acceptance of what society defines as right.

3.2 Developmental Tasks

The transition to middle childhood confronts the child with new interpersonal tasks and

additional pressures to achieve.

The typical developmental tasks of middle childhood include:

1. Learning physical skills necessary for ordinary games

To enjoy peer association and friendship, and a happy childhood, middle childhooders must learn the physical skills and physical activities that are valued in childhood. Such skills include: throwing and catching, kicking, tumbling, swimming and handling simple tools.

2. Building wholesome attitude towards oneself

At this stage, children are expected to develop habits of care of the body, of cleanliness and safety. They are expected to develop a realistic attitude to self which includes a sense of physical normality and adequacy, and a wholesome attitude to one's sex.

3. Learning to get along with age mates

At this stage, a child is able to understand that they are good in athletics, but poor in mathematics. A child is able to feel good about their peer relationship and at the same time, feel bad about their appearance. They are able to view themselves from different perspectives.

Children in middle childhood stage are expected to learn the give-and-take of social life among peers; to learn to make friends, and to get along with perceived enemies; to develop a social personality.

4. Learning an appropriate gender role

At this stage, children have to learn and act the appropriate gender role – learn to be a boy or a girl, and act the expected and rewarded boy-child and girl-child behaviour.

5. Developing fundamental skills

The child must master the skills of reading, writing and arithmetic. These are fundamental skills necessary for getting along well in school and society.

6. Developing concepts necessary for daily living

The middle childhood task here is to acquire a store of concepts sufficient for thinking and acting effectively in occupational, civil and social matters.

7. Developing conscience, morality and a scale of values

The task here is to develop an inner moral control, respect for moral rules and the beginning of a rational scale of values.

8. Achieving Personal Independence

The task here is to become an autonomous person, to be able to make plans and to act in the present and immediate future independently of one's parents and other adults.

3.3 Educational Implications

Below are the educational significance or implications of the middle childhood period:

- As children in middle childhood acquire greater coordination of gross and fine motor skills, they engage in more rough, vigorous and dangerous sports and pastimes. But immature cognitive skills such as: errors in judging danger or inability to foresee consequences may put children at risk for fatal accidents.
- Parents and teachers should provide more sensitive supervision of sports and pastimes of children at this stage.
- Though the capacity exists, motor abilities will not unfold on their own. Schools should make physical provision of facilities and time for children to engage in vigorous physical activities to increase quickness, vigour, coordination and stamina.
- The current trend is that school-age children are becoming increasingly engaged in television viewing and computer games. Parental role model in physical exercising is poor. As a matter of educational policy, school-age children should be made to enjoy a daily schedule of strenuous physical activity.
- Facts children learn through simple repetition do not aid cognitive development. Instructional process should pose age-appropriate problems to children rather than deliver solutions to problems. Schools are invited to more emphasis on developing specific intellectual skills and critical thinking rather than simple rote memorisation of facts.
- No cognitive skill has a more profound lifelong effect than reading. All children need explicit, systematic instruction and exposure to rich literature (fiction and non-fiction) to become skilled readers. Reading should be incorporated into the child's daily life.
- For middle childhood children, all instructional activities should be experiential – involving play, sensory experience and social interaction.
- Achievement behaviour of and teachers help define children's achievement orientation. Parents' and teachers' attitude to work and accomplishment is the key to children's own attitude. Parents and teachers are invited to be models of hard work, competence and accomplishments.
- Competence at middle childhood is socially and culturally defined. Children need

to be helped to master the tools of their own culture and schemes for forming peer relationships.

- Because competence is an important component of self-esteem and general well-being, parents and teachers are invited to aid children identify their unique talent. Children need help to develop their talents and find personal fulfillment.
- Middle childhood is the bridge across which children must successfully pass in to the world beyond childhood. Parents and teachers have the task of helping children interpret the world outside the home and assisting them in meeting the demands of the school.

SELF-ASSESSMENT EXERCISE

Friendship becomes important in middle childhood. What skills influence friendship development?

4.0 CONCLUSION

The middle childhood marks the transition from childhood to adolescence. Children in this stage are confronted with psychological and social changes, new interpersonal tasks and pressures to achieve independence from parents.

Children are expected to venture more into the world of peers, schoolmates and other adults in the wider society. The Cognitive advances that come with school experience demand support and encouragement from parents and teachers. Family life, therefore, should prepare children adequately for school life.

School life should equally sustain the promises of earlier stages of development. When any of these two agents of socialisation fails, children develop feelings of inadequacy and inferiority. Such feelings continue to define future choices and relationships.

5.0 SUMMARY

This unit discusses the major landmark a physical growth and motor development, cognitive and social development of children in the middle childhood.

We also outlined the critical developmental tasks middle childhood children are expected to achieve while we discussed the educational implications of developmental changes at the middle childhood.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline the major achievement of middle childhood children in physical and motor, cognitive and social development.
2. What are the critical developmental tasks of middle childhood?
3. Discuss the major educational significance of developmental changes of middle childhood.

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UNIT 5 ADOLESCENCE

CONTENTS

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1.0 INTRODUCTION

Adolescence is the period between 12 and 18 years. The onset of puberty marks the beginning of adolescence. Puberty is the culmination of the physical changes that lead to sexual maturity.

Adolescence is the bridge between childhood and adulthood. It is a stage in development marked by amazing spurts in physical, cognitive and social development. Sometimes, the sudden burst in all aspects of development, especially the altered body, overwhelms the adolescent.

Naturally, the adolescent questions these changes, and makes effort to understand them. The answers the adolescent finds help to define their identity. Although physical changes during this stage are universal, psychological and social reactions depend on each individual, the context they find their self and the culture.

In this unit, you will learn the developmental landmarks that define adolescence. You will also learn the critical tasks the typical adolescent is expected to master and the educational significance of the changes and problems children encounter at adolescence.

2.0 OBJECTIVES

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

- outline the physical cognitive, and social changes that typically accompany adolescence
- highlight the major developmental tasks adolescents are expected to master
- examine the educational significance of changes during adolescence.

3.0 MAIN CONTENT

3.1 Developmental Landmark

We will discuss the above topic under the following sub-topics:

3.1.1 Physical Growth and Motor Development

Genes programme human beings for developmental changes. At puberty, the *endocrine system* secretes *hormones*. Hormones are powerful regulating chemicals. They regulate physical growth and sexual maturation.

1. Hormonal Changes

The *pituitary* gland is primarily responsible for the *adolescent growth spurt*. The growth spurt begins when the pituitary secretes increased levels of growth hormone. The pituitary gland, also sometimes called the *master gland*, secretes hormones that cause other endocrine glands to produce their own hormones. *Thyroid* gland is controlled by hormones from the pituitary gland. The thyroid secretes hormone that also contribute to normal growth and body functioning.

The pituitary gland also secretes *gonadotropin* hormone. In males, the sex gland is the *testes*. In females, the sex gland is the *ovaries*.

The male testes produce the sex hormone called *testosterone*. The testosterone level rises significantly at puberty. The female ovaries produce the sex hormones called *estrogen* and *progesterone*. The levels of these hormones rise significantly at puberty.

One bothersome problem of adolescence associated with rise in hormone levels is *acne*. This is a skin disorder in which there are pimples and black heads on the face and neck. Acne is more common in boys than girls. This is because it is caused by the primarily male sex hormone, *androgen*. Hormone occurs in both males and females. Boys produce more androgen than girls.

2. Physical Changes

In boys, physical growth spurt peaks at about 14 years of age. Primary and secondary sex characteristics appear. *Primary sex characteristics* include enlargement of the testes, and production of sperm cells. *Secondary sex characteristics* include growth of hairs on body surface, especially pubic area, underarm and face; and deepening of voice.

In girls, physical growth spurt peaks around 12 years of age. Primary and secondary sex characteristics appear. Primary sex characteristics include maturation and shedding of ova – the female sex cells. Secondary sex characteristics include enlargement of the breast and pelvis, feet deposits on the hip, growth of body hairs on the pubic region and underarm and appearance of *menarche*. Menarche is the first menstrual period and the first sign of female fertility.

3. Motor Development

A major concern of adolescents is weight, appearance and physical fitness. By the age of 17 years, almost 90 percent of muscular-skeletal structure of the adolescent had been built (Amscheler, 1999). Limbs and muscles have strengthened. The typical physique of a man or a woman appears.

Physical endurance increases dramatically at adolescence. However, in most adolescents physical activities decline considerably. Adolescents get most of their physical activities through organised sports.

3.1.2 Cognitive Development

The transition into adolescence is marked by dramatic changes in cognitive abilities. It may appear to a detached observer that adolescents suddenly acquire new ways of thinking. We note however that the changes in the ways adolescents' process information are the result of a steady building of intellectual skills that have root in earlier stages of development.

Adolescents are able to display advanced forms of thinking called *formal operations*. The major cognitive achievements of adolescent we would consider include:

1. Abstract Thinking

Adolescents are able to think about things that cannot be seen or known directly. Adolescence is a stage in development when children are able to imagine what might exist. Adolescents no longer rely intellectually on what already exists. Abstract thinking involves complex mental juggling of symbols and rules to transcend concrete reality. Thus, adolescents are able to mentally experiment with ideas rather than rely on concrete things done.

2. Reasoning on Hypothesis

Adolescents are able to think hypothetically. That is, they are able to consider many possible ways a particular problem could be solved, and the possible forms each variable in the task situation might assume. They are also aware when they have exhausted the possibilities.

3. Constructing Propositional Logic

Adolescents are able to use self-consciously deductive reasoning processes. They are able to divide their attention to different aspects of a task situation. They are able to monitor their own thought processes through meta-cognition. Adolescents' thought process is relative, not absolute. Adolescents are able to reveal inconsistencies in the thinking

4. Combinatorial Reasoning

Adolescents are able to organise and combine abstract rules to solve a class of problems. They are able to generate, for example, a complex algebraic equation combining the different operations of addition, multiplication, division and subtraction to solve higher order problems.

5. Increased Memory Span

Adolescents are able to retain a greater amount of information in the short-term or working memory (Jenkins, Myerson, Hale, and Fry, 1999). Attention span also increases remarkably. Adolescents are able to consciously remember and think about more items of information at a time.

6. Increased Memory Strategies

Adolescents are able to use more memory strategies to aid learning and remembering. For example, the use of rehearsal, chunking, clustering and elaboration strategies improves remarkably during adolescence.

3.1.3 Psychosocial Development

The search for identity comes to the forefront of development during adolescence. The environment changes. Relationships with parents, siblings and peers change. Heightened pressure for autonomy and independence emerges. This stage is Erik Erikson's fifth stage of psychosocial development– the stage of identity achievement versus role confusion. Young people begin to get a sense of who they are through the roles they adopt, the kinds of relationships they are building with peers, and the beliefs they are having about their own potential. Adolescents gradually incorporate adult roles and responsibilities.

Some of the major achievements in the psychosocial phase of development are outlined here:

1. Creating an Identity

At this stage, an adolescent strives to define their self in a new way by creating an identity that they could be comfortable with. Identity refers to an individual's sense of uniqueness and belonging. According to Baumeister and Muraven (1996), identity is built on an integrated, goal-directed understanding of self. Males emphasise intrapersonal identity, a sense of self as separate and unique. Females emphasise interpersonal identity, a sense of self as connected to others (Douvan and Adelson, 1966). Sexuality assumes a particularly important role in identity formation as heightened interest in the opposite sex develops.

According to Adams and Marshall (1996), achieving identity serves several purposes in the life of the adolescent, namely:

- Identity provides the structure for understanding who one is;

- Identity provides the meaning and direction in life through values and goals clarification;
- Identity provides a sense of personal control and freewill;
- Identity enables the recognition of potential through a sense of future perspectives and possibilities of choices in life.

Inability to achieve a sense of identity results to role diffusion. When this happens, the adolescent doubts their sexual identity, psychological identity and social identity. Behaviour problems such as acting out with sex, and experimenting with drugs and alcohol may manifest. School truancy, other delinquent behaviours and eventually, dropping out of school may follow.

1. Self-Concept

Self-concept refers to a person's belief about their self. Self-esteem refers to feelings of self worth based on beliefs about self. Self-concept and self-esteem are tied to identity while self-concept becomes organised and more accurate at adolescence, self-esteem grows and differentiates further.

3. Egocentricism

Adolescents develop increased self-consciousness. They harbour the belief that others are concerned with their looks as they themselves are. This increased self-awareness leads adolescents to begin to find faults with their parents and adult authority. They become argumentative and fight valiantly to defend their viewpoint. Popularity issue also becomes acute concern to adolescents.

4. Post-conventional Morality

Adolescents are able to base their moral judgement on an internal set of ethical principles. Moral judgement is determined by a belief in universal codes of respect, justice and equality for all. Self-sanctions, rather than social sanctions, are the controlling force in moral decisions at this stage.

3.2 Developmental Tasks

The transition adolescence is marked by new challenges. The spurt in cognitive abilities and social sensitivities is accompanied with new demands, especially as the adolescent moves toward greater independence. We outline below the major developmental tasks of the adolescent stage of development.

According to the University of Florida, Institute of Food and Agricultural Science (UF/IFAS) Fact Sheet FCS 2118 (2007), adolescence developmental tasks may be categorised as follows:

1. Achieving new and more mature relations with others, both boys and girls, in their age group

The goal here is that the adolescent is expected to learn to look upon girls as women and boys as men. They are expected to become adults among adults. They are expected to learn to work with others for a common purpose, disregarding personal feelings and prejudices. Adolescents are expected to learn to lead without dominating.

2. Achieving a masculine or feminine social role

Adolescents are expected to master and accept a socially approved adult masculine or feminine social role. They are expected to develop their own definition of what it socially means to be a male or a female.

3. Accepting one's physique and using the body effectively

Whether or not an adolescent's body achieves the "goodness-of-fit" of the stereotype definition of a perfect body for a young woman or a young man, they are expected to become proud, or at least tolerant, of their body.

They are expected to accept, use and protect their body effectively with personal satisfaction.

4. Achieving emotional independence of parents and other adults

Adolescents are expected to be free from childish dependence on parents. While retaining their affection for parents, adolescents are expected to move toward self-reliance.

5. Selecting and preparing for an occupation

Adolescents are expected to select or enter into an occupational area for which they have necessary ability. To cut an adult status, the adolescent is expected to be able to support their self financially.

6. Preparing for marriage and family life

Adolescents are expected to develop a positive attitude toward family life and having and supporting children. They are expected to gain mastery of knowledge and skills required for home management, child rearing and parenting.

7. Developing intellectual skills and concept necessary for civic competence

Adolescents are expected to develop adequate conceptual framework, language skill and reasoning ability necessary for dealing effectively with the problems of the global community.

8. Achieving a set of values and an ethical system as a guide to self esteem and behaviour.

Adolescents are expected to develop their own set of values and beliefs, an ideology about life. They are expected to develop reasonable interest and motivation for realising those values. Adolescents are expected to define man's place in the physical world and relation to other human beings. They are expected to keep their worldview and values in harmony with each other.

9. Desiring and achieving socially responsible behaviour

Adolescents are expected to participate as responsible adults in the life of the community. They are expected to take account of the values of society in their personal behaviour.

3.3 Educational Implications

Adolescence, being the peak of all aspects of child development – physical, cognitive, psychosocial-- has several implications for the two key educational agencies, namely: the family and the school.

- Owing to the turmoil of the adolescent stage of development, there is need for sensitivity, patience, understanding and open communication on the part of teachers and parents, and indeed, other persons involved in the care of children this age.
- In early adolescence, children need help in adjusting to hormonal changes that tend to overwhelm them. In late adolescence, they need help in resolving problems relating to peer relationships, sexuality, identity and plans for future.
- Often, mood swings characterise adolescence. One strategy for combating mood swings is acquiring skills in an area of human endeavour, especially skills in sports. Adolescents need encouragement to actively participate in sports and physical exercises. Physical exercises help raise feelings of self-worth and general well-being.
- Factors relating to home experience (example, poverty, divorce, alcoholism) and school experiences (model of deviant behaviour) predispose adolescents to high risk behaviour. Poverty and adult delinquency are significant social and educational issues in Nigeria. Maturation and information about sexuality for adolescents.
- Teenage pregnancy is a serious social, health and educational issue in Nigeria. Adolescents need a good deal of knowledge about their sexuality. There is need for school to time both maturity and information about sexuality for adolescents.
- Much of thinking and problem-solving as a general habit of behaviour is facilitated or hindered by historical and cultural contexts. They develop in response to cultural demand for them. There is need for schools to teach logic or

thinking as method of approaching issues.

- Formal operational thought is a model of adult thought pattern. It does not represent the actual performance of adolescents at all occasions. Indeed, research evidence indicates that most adolescents and adults do not achieve formal operational thinking and remain concrete operational thinkers for life (Ohuche, 1988; Overton, 1990). The adolescent, therefore, needs special encouragement, stimulating home environment, enriched school experience and opportunities to encounter intellectual challenges to be able to reach formal level thought habit.
- In Nigeria today, the school curriculum is fragmented and regimented. Indeed, most schools base their instruction on examination syllabuses. This type of superficial arrangement of learning experiences does not encourage adolescents to do deep analysis of ideas and intellectual debate to push thinking beyond the concrete. There is need for a continuing debate for a rethink on secondary school curriculum in Nigeria.
- Many adolescents transit from school to work. The school should prepare them sufficiently to be able to make realistic career choice based on interests, attitudes, and future work opportunities.
- Adolescence coincides with a time important choices are made concerning schooling, career, worldview, lifestyle, social relationships and sexual activity. The choices adolescents make depend significantly on how they see themselves. Home and school experience should help children develop positive self-image.
- The physical appearance of adolescents sometimes misleads parents and teachers to perceive adolescents as adults. Actually, they are not adults. They still need a lot of room and opportunity to explore themselves and their world. Parents and teachers need to be aware of their needs and provide them with opportunities to grow into adult roles.
- As children move into adolescence, their quest for autonomy can create tensions, disagreements and conflicts with parents. There is need to renegotiate family roles and rules. Parents should show understanding and sensitivity.
- Identity is often discovered in social contexts of clubs, gangs, cliques and other groups. Adolescents should be encouraged to participate in school recognised clubs and associations. Schools are invited to expand the co-curricular activities to accommodate the interests of majority of students.
- The job market today demands increased education and specialised skills. The educational process should encourage the adolescent to stay on in school and attain higher education. School should impress it on adolescents that better educated adults have a wider range of job opportunities, and ultimately, earn higher income.

SELF-ASSESSMENT EXERCISE

Adolescence is said to be a period of storm and stress. Explain this statement.

4.0 CONCLUSION

The many developmental tasks facing adolescents are challenging. Adolescents are testing independence. Sometimes, they make wrong decisions. At times, the interaction between parents, teachers and the adolescent may be challenging and uncertain. Sometimes, the pressure from society on the adolescent to become adult may be great. Unfortunately, adults sometimes play discordant tunes. Adults may present faulty models and obstacles to growth. These problems are not insurmountable. Many adolescents undergo total personality re- construction and come out fine adults.

What adolescents need is sensitivity, patience and open one-on-one communication on the part of parents, teachers and other agencies involved in the care of children of this age. Parents and adults need to provide a supportive environment for adolescents to search and explore their identity. When adolescents make wrong decisions, it is the duty of parents and teachers to turn such mistakes into opportunities that will enhance adolescents' mastery of life skills.

5.0 SUMMARY

This unit has examined the physical cognitive and social changes that typically accompany adolescence. We highlighted the major developmental tasks adolescents are expected to master. Finally, we examined the educational significance of changes during adolescence.

6.0 TUTOR-MARKED ASSIGNMENT

1. What are the major physical, cognitive and psychosocial achievements of adolescents?
2. Outline the major developmental tasks of adolescence.
3. Examine the educational significance of the challenges of adolescents encounter.

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UNIT 5 CHARACTERISTICS OF ADOLESCENTS

CONTENTS

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- 3.0 Main Content
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1.0 INTRODUCTION

As you have seen already, the adolescence period is a time when major qualitative changes occur in a short period (mainly between 11 and 18 years). These changes create intense psychological problems which, when solved successfully, the individual enters adulthood. This period is usually referred to as period of storm and stress, harder to cope with and accomplish the developmental tasks, which you saw in the last unit. Adolescents need help and support. That is why our role as teachers is very important at this stage.

In this unit, you will be presented with the physical, social and intellectual characteristics of adolescents, their needs and implications of their conditions for education.

2.0 OBJECTIVES

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

- i. Explain physical, intellectual, emotional and social characteristics of adolescents
- ii. Explain the meaning of “early” and “late” developers and the effects of these on behavior of adolescents.
- iii. Outline the needs of adolescents
- iv. Mention ways teachers can assist adolescents in coping with the changes occurring in the adolescence period.

3.0 MAIN CONTENTS

3.1 Physical Characteristics

The physical development of adolescent starts with the onset of puberty when the girl starts menstruating and the boy, the production of reproductive sperm.

3.1.1 Adolescence and puberty

Although the terms “adolescence” and “puberty” are used interchangeably, they are really not the same thing.

Adolescence: Adolescence “is the process of growing up, both physically and psychologically ending in adulthood”. Landsdown, et al, (1991) and Chambers Encyclopedia describe adolescence as a period of life between childhood and adulthood during which, rapid development occurs in the reproductive organs and secondary sex characteristics e.g. development of deep voice and beard in boys and hair in the private parts of boys and girls.

Puberty: Puberty on the other hand refers to the onset of adolescence, which generally occurs around the age of 11-12 years for girls and at around 13-14 years for boys. Puberty comprises a series of physical and physiological changes, which convert children into adults, capable of reproduction. These include growth spurt alteration in body proportions and development of sex organs.

The onset of puberty is not an abrupt event. During the years leading to puberty, there is a gradual increase in the release of hormones (chemicals) from pituitary gland at the base of the brain in sufficient concentration, making the sex organs to develop. This is what is referred to as onset of puberty.

These developments may vary depending on heredity and the environment in which the adolescents live, especially what they eat, medical care, and hygiene.

3.1.2 Growth Spurt

This is a sudden and rapid shooting up in height. There is variation in age as well as in the order of events in puberty.

Girls generally start growth spurt earlier than boys. For a brief period, girls may be taller than boys of the same age. Girls may start their growth spurt at about 11 years but grow fastest between 12 and 13 years and may slow down by the age of 14.

Boy’s growth spurt at this time is slower by 2 to 3 years. They usually grow faster at about 13 years and fastest at 14 years and slow down by age 16. During the growth spurts a child may put on about 10cm or 4 inches in a year. There are, of course, exceptions to this rule.

3.1.3 Growth of Bones

There is a rapid growth of bones at the early and middle years of puberty, which later slows down. At this stage, muscles grow up and stretch covering the growing bones. In the early stage of puberty, the legs and arms grow un-proportionately, almost twice as fast as those of the trunk. That is why the adolescents look leggy.

The bones in the head continue to grow during adolescence, the overall shape of the face changes altering its width; particularly in boys. Their lower jaws become bigger.

3.1.4 Puberty in Girls

In girls, puberty begins with the enlargement of breasts, maturation of ovaries, fallopian tubes, uterus and vagina. Generally, there is an increase in weight, since the height

increases. Hips broaden and thin layer of fat develops under the skin. That is what gives girls a feminine shape. However, with the enlargement of the breasts, sometimes-uneven development occurs, which later corrects itself.

Menstruation starts between the ages of 12 and 14 years but sometimes earlier. This may be due to nutrition, as food is essential for growth. Malnutrition affects growth causing low weight and may affect bodily function like the start of menstruation. Adolescents therefore, need a good balanced diet for normal growth and development.

The first menstruation tends to be irregular, sometimes accompanied by headaches, irritability and cramps. Once ovulation has begun, sexual intercourse can lead to pregnancy. Girls need to be told and be prepared for this; they may find menstruation very upsetting especially for the early developers.

3.1.5 Puberty in Boys

The first sign of puberty in boys is the enlargement and maturation of the testicles, penis, scrotum, seminal vesicles and prostate gland, which generally occur around the age of 12 years. There is however, as in the case of girls, a wide variation in the age of onset of puberty. Pubic hair appears at the same time with under arm and facial hairs following later.

At around 13 or 14 years, boys also begin to put on weight, height and muscles as mentioned above in growth spurts. The shoulders start to broaden and testicles begin to produce sperm. The ejaculation associated with “wet dreams” occurs at night. Their voices also change and “crack” around this time causing a lot of embarrassment to them. Some who have wished for a career in signing may have to drop out until adult voice is achieved.

3.1.6 Early and late Development

Developing earlier or later than friends may lead to some complexities. For example, developing early can result in great pressure on the children because emotionally they may not have reached that stage in development. The late developers also have problems, and may feel inferior to their contemporaries, if they do not show the bodily changes expected of them.

Developing earlier or late, therefore may lead to complex or emotional confusion. Early developers of both sexes tend to be given more responsibilities and are expected to make more responsible decisions. They may find that they in conflict with parents, especially girls who try dressing and making up as adult. This may make the girls feel self-conscious and less confident.

Late maturing boys on the other hand, may be less distracted from school work and therefore tend to do better academically. They may be less successful in sport and feel left out socially. On the positive side, it is found that late developers of both sexes tend to have stronger sense of knowing who they are.

3.1.7 The Rapid Physical Changes and Nutritional Needs

Observe how some adolescents around you eat. You will notice that they eat much more than others that are not adolescents, like fully-grown adults or children. The reason attributed to this is that adolescents need extra nutrition to sustain their rapid growth rate.

According to Siam, et al. (1986), 13 to 16 years old boys need 200 more calories of energy per day than the average adult and the older teenagers need 800 more. Therefore, nutritional needs of adolescents should be adequate and balanced, if we expect good academic performance from them. Most adolescent late developers also need nutritional therapy to achieve their normal height and catch up with their colleagues. Children tend to reach the average height of their parents or even grow taller, provided their nutrition is adequate and balanced.

Furthermore, rapid physical growth that accompanies adolescence means that certain strains may be imposed on the young person, resulting in restlessness and fatigue if adequate rest is not allowed.

3.1.8 Effect of Changes in Primary and Secondary Sexual Growth

If a girl begins menstruating early and is unprepared, it will come as a nasty surprise and upsetting. A girl should be prepared in advance for the event, and be assured. She should know that it is entirely a natural happening. Moreover, an early developer should have prior knowledge, about human reproduction and that she is capable of becoming pregnant, since a well-matured adolescent girl can be attracted to the opposite sex.

Adolescent girls must be made to know the expectations of the society on them. For example, in most societies, and cultures permissive sexual behaviour by adolescents is not tolerated. Some form of sexual education is usually considered necessary. This may take place in traditional or religious institutions, schools, at home or any other arrangement acceptable to the society. In this way, the adolescent can learn to reconcile her own growing sexual awareness with socially acceptable sexual behaviour.

SELF-ASSESSMENT EXERCISE 1

1. State the difference between adolescence and puberty
2. Explain four (4) features that make an adolescent different from a child.

3.2 Intellectual Characteristics

Piaget's theory of cognitive development states that the period of formal operations fall between ages 11 and 16. This is the adolescent period. Piaget says that at this stage the adolescent is capable of formal thinking which he was not capable of as a child. The following represent the intellectual characteristics of adolescence.

1. Ability to Generalize Facts: Children usually generalize when faced with concrete objects. But in adolescence the ability to generalize on conceptual level develops. For example: "if the old man is sick and his only son who has money is not around, then he is likely to die". The adolescent can also manage abstract concepts. Adolescents can understand and communicate with concepts like justice, rule of law, democracy, capitalism, etc.

2. Increased ability in Understanding: Unlike the childhood stage, the adolescent can reason better and deeper. With his increased ability in understanding, the adolescent can attempt the solution of difficult problems. They engage in critical discussion of national and international problems. Sometimes, the adolescent thinks he has the answer to

all problems. This may explain why university undergraduates very often clash with authorities.

3. Ability to make Decisions: The adolescent, with time, becomes capable of making decisions based on logical and systematic considerations. He is able to survey several alternatives. The adolescent after explaining and weighing these alternatives makes a decision and abides by it. For example “Would I prefer going to a university to taking a good job offered to me in a commercial bank?” Children who are not adolescents may not be capable of taking independent decisions.

3.3 Emotional Characteristics

Emotional feelings in the adolescence years are deeper and longer lasting than during childhood or even adulthood. Because of wider and greater understanding of the situation involved, love, anger, hatred and jealousy are deeply felt by adolescents. They can, however, control their feelings and sometimes hide emotions by substituting them with others, e.g. fear becomes shyness and anger.

The need for independence and social approval are other influences on adolescents' life. Unlike adults who have greater control over their emotions, among adolescents small annoyances produce major emotional outburst, because at this stage, the adolescent is going through other major changes, physically and psychologically.

3.3.1 Psychological Needs in Adolescence: Need for Love and Security

Conger (1977), reported that adolescents continue to need parental love and acceptance even when they show tendencies of moving towards independence. The findings of this study also indicate that in homes where adolescents are given appropriate autonomy, they are likely to become more active, outgoing, socially assertive, and friendlier and have more positive self-image.

The need for self-esteem during adolescence is also paramount. The need to belong and identify with a group is very strong. The group's friendship is vital for self-image. This sometimes compensates for lack of love and security from the home. Children whose home reinforced self-concept will find it easier to make and keep friends. A degree of autonomy and independence should be balanced by parental love and security.

The need for new experiences is also vital. New experiences help children to structure their lives and form a more meaningful understanding of the world. Those of them that are engaged in activities that are interesting and rewarding are not likely to engage in destructive or anti-social behavior.

Praise and recognition are also other needs adolescents aspire for. They need to feel that they can cope and master the tasks they are given. Recognizing their effort is therefore very important. Adolescents who can successfully complete academic, social and physical tasks are bound to feel that they are worthy of people's respect, consequently their levels of self-esteem increase.

3.3.2 Physical Aspect of Emotional Development Adolescents

The major physical factor in adolescence is quite simply: sex. Rapid growth during adolescence takes place in the sexual organs as mentioned in the previous unit.

All these new sexual experiences are disturbing. Things are happening to their bodies, which the adolescents are worried about. Girls find that their breasts are growing, they begin to menstruate. The boys' sexual organs begin to grow too; their voice "cracks". They begin to pass semen during the night, sometimes called "wet dreams". The adolescents need explanations and guidance about all these. From the community in which the adolescents live like the parents, the family, the peer groups, the teachers, the neighbours and the religious groups, the adolescents are bombarded with their own views and advice on sexual experiences. The newspapers, the magazine, films, radio and television may also give different messages.

Moreover, adolescents have to cope with the strong emotions they do not understand and can hardly control. Girls and boys become attracted to each other and move in groups. They need sympathetic and knowledgeable adults to guide them through the confusing explanations and advice from different sources. As a teacher, you have a role to play in this.

3.3.3 Emotional state and performance

If the ensuing emotional experience is pleasant, it will lead the student to love learning. If failure is greeted with scolding, and corporal punishment, with little attention to motivation, clarity, and relevance, students will dislike schooling. When experience of learning becomes so unpleasant, it creates the emotion of fear and boredom. In such situations, even the bright pupils will fail to profit from learning.

Emotional reactions such as fear, anxiety, guilt, jealousy and anger can inhibit bodily functions growth and even learning, therefore teachers must learn to satisfy the emotional needs of children.

3.4 Social Characteristics

The social adjustment of the child starts from infancy and the foundation of social development is laid in the family. The success in future relationship of the adolescent depends on this early socialization. Very often society places upon the adolescent a set of new social demands he was not used to. For example, the society would want the adolescent to join other adults in such activities as public works or village square meetings. When the adolescent fails to conform, problems are likely to emerge. This is why we shall spend some time to look at the social characteristics of adolescence.

1. The major social task of the adolescent is the development of personal identity. During childhood, the parent assumed a dominant role in the child's personality but the adolescent requires more independence. Questions like 'Who am I? How will I fit into this plan?' begin to come from the adolescent.
2. Another characteristic of the adolescent's social development is the increased influence of peer groups. Adolescents, as we know, remain most of the time with their peer groups. The peer group to a great extent determines the adolescent's

social relationships. His interests, attitudes and values are all influenced by his peers. He does anything for the sake of pleasing his peers.

3. Social relationship in adolescence is heterosexual in nature. In late childhood, boys play with boys while girls play with girls. But in adolescence, boys and girls become friends based on their common interests.
4. The structure of social relationship takes different forms.
 - (a) Chums or Friends – Friendship with opposite sex could be fairly permanent.
 - (b) Cliques – small exclusive groups made up of few friends.
 - (c) Crowds – made up of several cliques with identical interest.
 - (d) Organized Groups – Boys Scout, Girls Guide, Christian Fellowship open to all who wish to join.
 - (e) Gang – made up of delinquent adolescents with similar sinister objectives.

SELF-ASSESSMENT EXERCISE 2

1. Explain the signs of intellectual growth during adolescence
2. Explain the importance of social relationship to an adolescent.

3.5 Needs of Adolescents

Just like any other person, adolescents have needs that must be met before they can grow and live happily. Such needs include the following:

3.5.1 The Physical needs

The physical needs include food, water, health, security, exercise, rest, sex, temperature regulation and evacuation of waste from the body, etc. these physical needs are very important. Without satisfying these needs, one cannot think of other needs. Our hunger has to be satisfied before thinking of learning or other achievements.

This is a commitment of the home to the entire family members. Every young adolescent must be guaranteed these basic necessities of life. Most maladjustment cases are partly because these needs are not satisfied. The school should address this by organizing local seminars during PTAs to sensitize parents on the need to provide for all these and the repercussions for failing to do so. Where boarding facilities are provided by the school, care must be taken to guarantee these basic necessities of life by the school, failing which crisis looms in the schools. Already, a lot of crises have taken place because of the failure of school managements to address this important need of the adolescents.

3.5.2 Personality need of the adolescents

After the physical needs, the personality need come next. These are the need for status independence, achievement, and a satisfying philosophy in life. Status is very important, especially among their peers. They do not want to be recognized as children any more. The secondary teachers who want to catch the attention of students should realize this need by encouraged to behave as responsible young adults.

3.5.2 Need for independence

Teenagers want to be free from parental restrictions. They would want their space at home, they would want to keep their own things, plan their activities and to a good extent take their own decisions.

Generally speaking, adolescents would like to run their lives. They would resent parents coming to school to inquire about their progress. These adolescents will think the inquiry means they are not able to take care of their affairs. They will not want to be “overprotected”. Adolescents that are treated as young adults tend to display some adult responsible behavior.

3.5.3 Need for achievement

Everybody at times does something worth commending. That particular act should be recognized. Slow learners and those not interested in school, should be praised when they do something good. Reward instead of punishment is a great motivating device in producing learning and disciplined behavior. Remedial assistance should be provided by the school to both the slow and past learners. Individual attention by the teachers should be given to each and every student to enable them realized their worth and work towards achieving greater heights. Every effort must be made by the school to eliminate among student as this would be a barrier against achievement.

3.5.4 Need for a satisfying philosophy of life

It is during the adolescence period children develop interest in the meaning of life. They are interested in the truth, ideals and religion. The adolescents will not want gaps about the purposes of life. A satisfying philosophy or set of beliefs tends to provide ease of mind and psychological security. Religious conversions and radical political activities at this time are very common. Knowing this, teachers should be able to guide the adolescents to make rational decisions affecting their lives;

3.6 Educational Implications of Characteristics and Needs

Characteristics and needs of adolescents have implications for education.

All efforts should be made to proper physical development of the adolescents. However, teachers should make students realize that while physical appearance is important, it is not the only quality that should be emphasized. Responsible behaviour is also very important. Specifically, the following suggestions will help the adolescents. School curriculum should allow time for resting, relaxation and recreational for their fast growing bodies to recoup.

- School has great responsibility to help the adolescents know how to handle their sexual needs and understand the changing development of their sexuality. The school can organize sex education, which could incorporate courses from biology, health science, health education, religious, moral education and guidance counselling.
- The importance of adolescent nutrition should be emphasized in school and at home. Also, school curriculum should allow time for resting, relaxation and recreational for their fast growing bodies to recoup.

- In order to satisfy their intellectual demand, teachers, as much as possible, should expose adolescents to rich experiences that will challenge their curiosity. Guided discovery method and problem solving approach will introduce excitement to classroom experience. For instance, adolescent will enjoy providing answers to community problem. Library and other facilities will also give them opportunities for free discussion and independent work. Adolescents should be allowed more opportunities to participate in organizing their own learning activities.
- Teacher should understand the body changes taking place in adolescents and how they affect their emotional reactions. Teacher should make allowances for occasional outbursts and guide them to understand and overcome the effect of these changes.
- To meet their social need, teacher should provide opportunities for effective use of the social groups for classroom work. Peer teaching and group assignments should be exploited to the full. Also, teachers should provide enough lectures on moral and sex education so as to guide the adolescents in their heterosexual relations.
- The schools should have guidance and counseling experts to guide these adolescents.

SELF-ASSESSMENT EXERCISE 3

1. Provide a list of the needs of adolescents.
2. Briefly explain what teachers can do to help the adolescent enjoy this period of his/her life

4.0 CONCLUSION

Adolescence developmental stages pose serious challenges to the various segment of the society (home, school, religious institution and the entire community), that must be cooperatively faced otherwise life would be most unpleasant. The school, especially, will have to address adolescents' problems from various angles like career counseling, community counseling, diversifying teaching strategies, and developing personal relation with their student.

5.0 SUMMARY

- The onset of adolescence starts with puberty. Puberty is a period of rapid development, mainly physical especially sexual organs. This is called growth spurt. Other rapid physical growth includes the growth of bones.
- The rapid growth results into extra nutritional needs to sustain the growth. The adolescents also need information and guidance to overcome the confusion they experience because of the sexual changes they experience. School should arrange guidance and counselling sessions for them and incorporate sex education into the curricula.

- The adolescents have distinct physical, intellectual, emotional and social qualities, they have needs also; parents and teachers must understand these unique characteristics and assist them. The school curriculum must also address needs of adolescents so as to reduce confusion and conflicts that they go through. These will also guide adolescents “successful transition” into adulthood.

6.0 TUTOR- MARKED ASSIGNMENT

1. Compare the development of girls and boys at puberty.
2. List the four (4) major characteristics of adolescents and discuss two (2) of them
3. What do you understand by the needs of adolescents? Explain any 3 of them.
4. Explain the role of the teacher in assisting adolescents to cope with challenges of the period.

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