

# INTRODUCTION TO EDUCATIONAL PSYCHOLOGY

## MODULE 1

MUFULIRA COLLEGE OF EDUCATION

EDUCATION DEPARTMENT

*"We endeavour to meet our students' aspirations!"*

*Our Motto; "I will serve" calls for dedication to duty to have this whole lot of work produced" So help us God!*

Educational Psychology

DISTANCE EDUCATION MODULES  
2011 Version

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# Acknowledgement

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# About Educational Psychology

## How “Introduction to Educational Psychology is structured”

### THE COURSE OVERVIEW

The course overview gives you a general introduction to the course. Information contained in the course overview will help you determine:

- If the course is suitable for you.
- What you will already need to know.
- What you can expect from the course.
- How much time you will need to invest to complete the course.

The overview also provides guidance on:

- Study skills.
- Where to get help.
- Course assignments and assessments.
- Activity icons.
- Units.

We strongly recommend that you read the overview *carefully* before starting your study.

### The course content

The course is broken down into units. Each unit comprises:

- An introduction to the unit content.
- Unit outcomes.
- New terminology.
- Core content of the unit with a variety of learning activities.
- A unit summary.
- Assignments and/or assessments, as applicable.



## Resources

For those interested in learning more on this subject, we provide you with a list of additional resources at the end of this ;these may be books ,articles or websites.

For those interested in learning more on this subject, we provide you with a list of additional resources at the end of this module; these may be books, articles or web sites.

## Your comments

After completing “Introduction to Educational Psychology” would appreciate it if you would take a few moments to give us your feedback on any aspect of this course. Your feedback might include comments on:

- Course content and structure.
- Course reading materials and resources.
- Course assignments.
- Course assessments.
- Course duration.
- Course support (assigned tutors, technical help, etc.)

Your constructive feedback will help us to improve and enhance this course.



# Course overview

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## Welcome to Educational Psychology

This course is meant for the students to acquire the knowledge and understanding of terms, concepts, processes and principles of psychology and apply them to classroom situation as professional teachers at secondary school level. The course endeavours to impart in students theories that help the teacher to understand the child as learner in his or her holistic nature, theories that can help the teacher to handle, teach and modify the learning environment of the learner, the methods of teaching and general pedagogy that is beneficial to the learning environment. The course also helps to make the teacher understand himself or herself as a person and how best he or she can adapt to the ethics of teaching and learning. It covers topics such as Introduction to psychology, theories of child development, Memory, Personality, Counselling, Assessment and Evaluation, Perception, Learning Theories, and we have introduced special education as a component to prepare our students for any eventualities in the classroom. All these topics and others are divided in different modules. We assess our students through assignments, tests, projects and examinations. Guidelines for assignments will be given in the student guide 2011. **Educational Psychology- we believe is the most exciting course for our student teachers; so! Enjoy the course!**

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## Is this course for you?

This course is intended for people who would be teachers in Zambia.

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## Course outcomes;

By the end of the course, we expect you our students when teachers to;

- Demonstrate deeper understanding of the self and others that make up a conducive learning environment.
- Apply theories in classroom teaching
- Identify impediments to learning and teaching and suggest ways of overcoming such
- Improve the quality of our teaching and learning environments
- Improve teaching and learning methods/strategies and techniques
- Develop curricular suitable for learners in Zambian schools
- Conduct research in areas that affect and influence learning/teaching

---

## Module outcomes

Upon completion of this module you should be able to:

- Define key concepts educational psychology.
- Trace the pioneers of psychology
- Explain the importance of educational psychology to a teacher.
- Describe research methodologies in psychology
- Identify different branches of psychology..



## Outcomes

**Describe** the contributions of psychology to education

**Define** behaviour

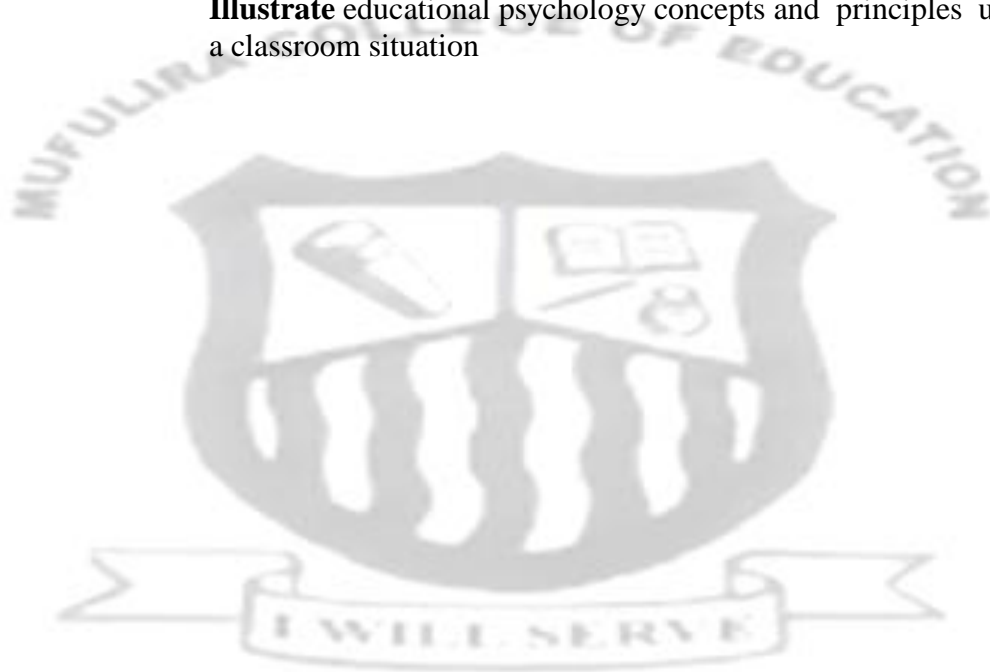
**Trace** originality of psychology.

**Apply** the principles of educational psychology in a classroom situation

**Show** understanding of theories of child development.

**Define** psychology and identify several of its pioneers.

**Illustrate** educational psychology concepts and principles used in a classroom situation



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## Timeframe



How long?

You are expected to complete reading this module between this contact session and the next contact session in December, 2011.

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## Study skills



As an adult learner your approach to learning will be different to that from your school days: you will choose what you want to study, you will have professional and/or personal motivation for doing so and you will most likely be fitting your study activities around other professional or domestic responsibilities.

Essentially you will be taking control of your learning environment. As a consequence, you will need to consider performance issues related to time management, goal setting, stress management, etc. Perhaps you will also need to reacquaint yourself in areas such as essay planning, coping with exams and using the web as a learning resource.

Your most significant considerations will be *time* and *space* i.e. the time you dedicate to your learning and the environment in which you engage in that learning.

We recommend that you take time now—before starting your self-study—to familiarize yourself with these issues. There are a number of excellent resources on the web. A few suggested links are:

- <http://www.how-to-study.com/>

The “How to study” web site is dedicated to study skills resources. You will find links to study preparation (a list of nine essentials for a

good study place), taking notes, strategies for reading text books, using reference sources, test anxiety.

- <http://www.ucc.vt.edu/stdysk/stdyhlp.html>

This is the web site of the Virginia Tech, Division of Student Affairs. You will find links to time scheduling (including a “where does time go?” link), a study skill checklist, basic concentration techniques, control of the study environment, note taking, how to read essays for analysis, memory skills (“remembering”).

- <http://www.howtostudy.org/resources.php>

Another “How to study” web site with useful links to time management, efficient reading, questioning/listening/observing skills, getting the most out of doing (“hands-on” learning), memory building, tips for staying motivated, developing a learning plan.

The above links are our suggestions to start you on your way. At the time of writing these web links were active. If you want to look for more go to [www.google.com](http://www.google.com) and type “self-study basics”, “self-study tips”, “self-study skills” or similar.

<http://sites.google.com/site/muce2009> is a college local free website where MUCE lecturers deposit learning materials for the students. The website connects students to various other websites by providing links and Ebooks that are relevant to our course. It also acts as an academic interaction forum for students and lecturers and the academic world. We also use to communicate with our students country wide. Assignments and announcements can be given through the website. We are making frantic efforts to develop it further to allow registration be done through it. Make use of it. (MKK)

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## Need help?



Help

Contact lecturers at Email: [muce48@yahoo.com](mailto:muce48@yahoo.com) OR [cmufulira@yahoo.com](mailto:cmufulira@yahoo.com)

And <http://sites.google.com/site/muce2009>

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## Assignments



### Assignments

- Assignments may be in different formats. There could be a session assignment in form of a take away. Sometimes assignments may be done within the session periods.
- The assignments are a form of assessment and evaluation of an individual's progress with the course.
- The assignments help the teacher/lecturer to identify the learners' needs so that they can be guided towards the attainment of the desired goals. When problems are identified, measures are taken to solve them. Another observation is to help learners prepare for a promotion/final/continuous assessment examinations.

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## Assessments



### Assessments

















This is the assigning of an individual to a particular category or rank by means of some form of his/her achievement/ability in a special way. In other words assessment is an approach designed to help teachers find out what pupils are learning. In this case, the lecturer finding out how students are progressing with their study courses, and how well they are learning it. In educational psychology terms. It is a process which attempts to obtain a quantified representation of the degree to which a learner reflects a certain expected trait in a persistent manner.

# Getting around this module 1

## Margin icons

While working through this module 1 you will notice the frequent use of margin icons. These icons serve to “signpost” a particular piece of text, a new task or change in activity; they have been included to help you to find your way around this module 1.

A complete icon set is shown below. We suggest that you familiarize yourself with the icons and their meaning before starting your study.

 Outcomes			
Writing Activity	Assessment	Assignment	Case study
			
Discussion	Group activity	Help	Note it!
			
Outcomes	Reading	Reflection	Study skills
			
Summary	Terminology	Time	Tip







## **UNIT 1 INTRODUCTION TO EDUCATIONAL PSYCHOLOGY**

Welcome to Unit 1 of Educational Psychology Module (The Introduction to Educational Psychology).

### **UNIT COMPOSITION**

- Educational Psychology- meaning and definition
  - Educational and Educational psychology
  - Nature of educational psychology
  - Scope of educational psychology
  - Goals of psychology
  - Approaches and Branches of psychology
- 

Upon completion of this unit you will be able to:



#### **Outcomes!**

- Define Educational Psychology and its branches
- Illustrate Educational Psychology and principles by citing examples from the classroom and outside situations
- Describe branches of psychology
- Explain the 'scope' of psychology.
- Criticise why psychology is not a pure science.







## EDUCATIONAL PSYCHOLOGY-DEFINITIONS AND MEANING

### Education:

Education is an activity which goes on in the society. It attempts to develop the personality of an individual and then prepares him or her for membership in a society. According to Farrant, (1974:369) education is “the process of learning to living as a useful and acceptable member of the community”,

### Psychology :

The word psychology emanates from two Greek words. “psyche” and “logos”. “Psyche” means “*soul*” and “logos” means “*science*”.

The **Concise Oxford Dictionary** defines psychology as the “scientific study of the human and its functions, especially those affecting behavior in a given context.”

Child, (2001:4) defines psychology as “the study of overt and covert behavior in humans and animals.”

### Educational Psychology

Crow: It is the study of psychological aspects of educational situations.

Judd: It is the science which explains the changes that take place in the individuals as they pass through the various stages of development.

Skinner: It is the branch of psychology which deals with teaching and learning.

The subject psychology like other natural sciences has two aspects being out theories and suggests techniques for the study of human behavior which finds the practical shape in its applied

We have looked at meaning, and definition of psychology .....



Can you now think of what the nature of psychology can be? Write in the space provided.-----  
-----

## THE NATURE AND FUNCTIONS OF PSYCHOLOGY

It is an accepted reality that the nature of psychology is quite scientific. This fact has been properly recognised by eminent psychologists and thinkers as may be inferred from the definitions of psychology in terms of the scientific study or science of behaviour, already given. Let us, however, try to analyze why psychology should be called a science. In general, we may term a subject scientific if it:

1. Possesses a body of facts which can be supported through universal laws and principles;
2. Emphasizes the search for truth;
3. Does not believe in hearsay, stereotype/superstitious



4. Believes in cause and effect relationships
5. Adopts the method of objective investigations, systematic and controlled observation and a scientific approach
6. Stands for the generalization, verifiability and modification of the observed results/deduced phenomena.
7. Helps in predicting future development; and
8. Is able to turn its theory into practices by having an applied aspect.

In addition, the points below also qualify psychology as a science.

1. It is empirical. This means that its body of information is gathered by means of observation and experimentation.
2. It is systematic. Its body of information can be classified in an orderly, consistent and meaningful manner.
3. Its notion is based on the basis of measurement. It is determined by how precise and accurate its measurement is.
4. As a science, terms used in psychology are clear and definable.



### Writing Activity 1

Having dealt with the above sections in the module, let us practice on the following questions:

1. In your own understanding , psychology can best be defined as-----  
-----  
-----
2. Write down four facts that psychology has a scientific approach in its investigations.  
[a]-----  
[b]-----



[c]-----

[d]-----



### OUR TIP!

Did you say Psychology is a scientific study of human and animal behaviour? Then you could be right. Or perhaps you said Psychology is the study of overt and covert behaviour in both humans and animals. You are also right. Well, the most important aspect in our desired definition is the study of behaviour, and behaviour may be intrinsic (covert) or extrinsic (overt). Overt behaviours are easily observable while covert behaviours are inward.

As for question 2, check and re read the points on the Nature of psychology and you will be home and dry! It is empirical (we can prove its basis through evidence), it is systematic i.e it has orderly classifiable information, behaviour can be measured and it had clearly definable terms.

## FUNCTIONS OF EDUCATIONAL PSYCHOLOGY



### Reflect!

Having dealt with what scope of psychology is, we now look at the functions of psychology .What do you think could be some of the functions in an educational set up in Zambia? Give your views. (We always want you as a learner to learner to lead the way. So try it under here! The functions of Psychology are;

.....

.....

.....

.....

We hope you have tried out your understanding of the functions of psychology in the space provided above. It is always important to do so as helps you consolidate your understanding when additional information about a concept is now explained to you in full.



### TIPS FOR YOU!



Knowing you are psychological as a human being, we guess you gave the following points or even some as functions of psychology!

- to know the learner
- to select and organise the subject matter or learning experiences.
- to suggest art and techniques of learning as well as teaching
- to arrange learning situations/environment
- to acquaint oneself with the mechanism of heredity and environment
- helping in maintaining discipline
- rendering guidance services
- solving classroom problems
- knowing about oneself

**NOTE THEN THAT!** Educational psychology, with its broad coverage of the content material principles, theories, techniques and applied experiences first analyses the tasks of the teacher's teaching and then, in its light, tries to supply the knowledge and skills needed by the teacher in respect to his classroom teaching and other activities for the desirable behaviour modification and all-round growth and development of the students may outlined above.

## SCOPE OF EDUCATIONAL PSYCHOLOGY



### KEY TERM! Scope

What comes in to your mind when you read the sub topic 'scope'?

In scope we will deal with the extent in knowledge coverage.'

The scope of a subject can usually be discussed under two heads;

- (a) The limits of its operations and applications
- (b) The branches, topics and the subject matter it deals with.



### LET'S DISCUSS HERE!

The field of operation and applications of psychology are too wide. It studies, describes and explains the behaviour of living organisms. Here the terms behaviour and living organisms carry unusually wide meanings. Behaviour is used to include all types of life activities and experiences-whether conative, cognitive or affective, implicit or explicit, conscious, subconscious or unconscious of a living organism. Also, the term living organism is employed to include all living creatures



inhabiting the earth irrespective of species, caste, colour, age, sex, mental or physical state. Thus, the normal, the abnormal, the young and the old belonging to different stock, spheres and walks of human life are all studied by this science. Moreover, studies in psychology are not confined to human behaviour alone but also encompass the behaviour of animals, insects, birds and even plants.

In this way, wherever, life exists and there are living organisms; psychology may be needed for the study of their activities and experiences. We know that the living organisms as well as their life activities are countless and no limit can. Therefore, be imposed upon the fields of operation and application of psychology.



### ***Writing Activity!***

Now that we have guided you through, describe the scope of psychology unguided!

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### **GOALS /AIMS OF EDUCATIONAL PSYCHOLOGY**

A human being's existence has goals and aims, a man's venturing into any sort of action must achieve him something. It is an aim, it is a goal. We live to achieve our goals and aims. Psychology equally has goals and aims to achieve. It cannot be there for nothing. Why study behaviour for example? Just for its own sake? Definitely no! So we ask you to think a little what the goal of psychology is and how you can apply psychology in the classroom situation.

Write them here;

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Below are some goals/aims you may expect.





- To measure and describe human and animal behaviour
- To predict and control human and animal behaviour
- To understand and explain human and animal behaviour
- Changing behaviours and mental processes so that they are more appropriate.



### **YOUR TIP!**

We have at this juncture left the application of psychology into classroom situation entirely to you. We will not give you this and we swear. You have to do this yourselves. We **DO NOT WANT** to take your learning responsibility. This is the essence of you studying this module and so we cannot spoil our soup by giving all that you are here to study. But we will ask you for answers one day how you should apply psychology into classroom situation! So gather points well in advance. The relevance accumulates with the content you will cover in Educational Psychology.

### **We will just guide you with the following vital points that can lead you to a detailed description or explanation of the relevance of educational psychology to a teacher;**

There are three main ways Educational psychology helps the teacher and the school.

- ◆ It helps to define objectives operationally to translate them into terms of implied action and measurement.
- ◆ It provides experimental methods and how objectives can be achieved.
- ◆ It gives various means where by the attainment of aims can be measured. Though careful constructed standardised tests, Educational psychology has provided better means of judging students progress and diagnosing difficulties.



### **APPROACHES TO PSYCHOLOGY**

As earlier mentioned, the scope of psychology is wide. This means that for the content to be learnt well, there is need for speciality. Have you come across any other aspect of psychology apart from Educational Psychology? Below are some branches that you may have written. It is important to take note that these are not the only ones. The ones mentioned are relevant to teaching.



### 1. Neurobiological approach

This approach places emphasis on the fact that the human body is composed of chemicals associated with the brain and central nervous system is responsible for influencing behaviour.

### 2. Behavioural approach

Observable behaviour is central to the behaviourist concerns. It concentrated on studying by looking at an individual's behaviour rather than at their internal workings- Watson, J.B.

### 3. Cognitive Approach

This is directed to the internal processes assumed to accompany observable human behaviour. Cognitive psychologists argue that man is not a passive receptor of stimuli the mind actively processes the information it receives and transforms it into new forms, and categories.

### 4. Psychoanalytic approach

This approach has an underlying belief that unconscious motive rather than the rational reason give reason to our behaviour-Sigmund Freud.

### 5. Phenomenological approach

This approach seeks to understand events or phenomena, as they are experienced by an individual without imposing any pre conception without bias.

### 6. Gestalt approach

This states that behaviour depends on our perception of wholeness before we see parts. The approach was done by Germans.

## BRANCHES OF PSYCHOLOGY



### Reflect!

What is a branch?

.....

.....



## Think of a tree with its branches!

This should tell you that no one may exist absolutely in isolation from others. There should be elements of co existence, dependence and belonging in life. Psychology equally exists with others. It may be the trunk, but the trunk should have the branches.

However, while we may not name the branches of a tree, we want to name the branches of psychology!



### Reflect!

What branches of psychology do you know? List them below and briefly explain what each branch deals with;

1. ....
2. ....
3. ....
4. ....
5. ....



## BRANCHES OF PSYCHOLOGY

There are many branches of psychology. However, we will give you some of them. Do not worry if some of the branches you have written in the breather above do not appear below; you will only need to be able to refer to recommended and prescribed books for confirmation. In the branches below; we select those that are very much related to Educational Psychology, those from which Educational Psychology borrows information to understand the holistic nature of the learner.



1. **General psychology-** studies the basic processes in human information processing, perception learning, memory, thinking and their lawfulness.
2. **Biological psychology-** seeks to uncover the neural and hormonal factors that under lie behaviour.
3. **Developmental psychology-** studies the original of behaviour and psychological function that is thought, personality abilities, feeling, motives, emotions and personality, abilities feeling, motives, emotions and attitudes and how and why these change during the course of life.
4. **Social psychology-** Investigates individual behaviour in the social setting and inters group relationships.
5. **Abnormal or clinical psychology-** Is focused on the problems and cure of mental illness and difficulties in psychic functioning.
6. **Personality psychology-** Is concerned with the uniqueness of the individual and how and why people differ from each other.
7. **Occupational psychology-** Is the study of such problems as vocational development and job satisfaction.
8. **Industrial psychology-** Is the study of machine simulation of human functions as well as human morale.

There may be many other branches but perhaps these are the main ones. It is important to note among these branches, **Educational Psychology** is another.



### *THE TEACHER VS EDUCATIONAL PSYCHOLOGY*

Educational psychology seeks to discover factors which influence the quality and quantity of learning. You will agree with us that some people only learn very little in lecture of 1 hour, thus



the quality and quantity is not achieved; why? This is done by studying the mental physical, social and emotional behaviour of children. There are a number of factors that influence and affect the quality and quantity of learning. Some of them are personality, emotions, interest, memory, learning styles, intelligence, perception, disability, and many other factors. All these will be studied in educational psychology. A better understanding of each of these topics lies in the foundation where there is a good understanding of the schools of thoughts. Educational psychology is an applied psychology. It is not pure psychology. It is psychology applied on a learner. It seeks to understand pupil behaviour as portrayed in the classroom and seeks to ascertain the quality and quantity of learning. It finds out how much a pupil is able to learn, what factors enhance and hinder learning and provides a general understanding of the child in learning. Educational psychology borrows from other psychologies. For-instance from developmental psychology, educational psychology would understand how a child develops and what factors could have affected child growth and thereafter provide measures to rehabilitate the child. Therefore, studying this subject helps to understand how the child develops physically, emotionally, socially and intellectually through stages. A teacher's knowledge of how a child develops helps him or her to understand why a learner behaves the way he or she does and adapt ways of teaching, interacting and helping the learners according to their needs. A student also needs to understand personality development, the factors that affect it and how it affects learning. Educational psychology therefore borrows from other branches to understand a learner. Educational psychology helps teachers to make wide decisions on matters to do with the teaching and learning processes.

- ◆ It helps teachers to understand oneself, the pupils, the environment, the process of learning and teaching, how children develop intellectually.
- ◆ It also utilises relevant material from fields like anthropology medicine, psychiatry, biology and sociology in its attempt to explain. Describe measure and interpret the process of learning and teaching.



Outcomes

### WRITING ACTIVITY (Your practice)

1. Separating Educational psychology from psychology or its other branches would be a fallacy. Discuss!



### SELF ASSESSMENT! (We try to look through an eye and see what we have learned!)

In order to help you assimilate your information, we will continue to bother you with questions throughout our interactive module. So try to do the following tasks.



Outcomes

2. Psychology applied in social settings is .....
3. To uncover the neural and hormonal factors that under lie behaviour, a teacher uses.....psychology information in education.
4. Abnormal psychology can help a teacher to understand the learners' problems related to.....and .....
5. Briefly explain the following concepts in your own understanding
  - i. Cognitive psychology: -----  
.....  
.....  
.....  
.....
  - ii. Abnormal psychology:-----



.....  
.....  
.....  
.....

iii. Industrial psychology:-----

.....  
.....  
.....  
.....

iv. The behavioural approach to psychology.....

.....  
.....  
.....  
.....

6. State five [5] in which educational psychology can be helpful to a teacher

i. ....

ii. ....

iii. ....

iv. ....

v. ....



### YOUR TIP!

Answers to such questions are not far away from your content. Revisit your content and test your brains! The questions are like robots; you need to stop at a red sign and decide to go ahead or not at amber and go straight at green. If at all you are able to answer the questions, you are permitted to go ahead and study further other parts of this module. You are advised not to go ahead when you are unable to answer any of the questions.



## **UNIT SUMMARY!**

In this unit we have looked at Educational Psychology as one of the branches of applied psychology deals with the study of the behaviour of the learner vis-avis his educational environment. The branch is designed for teaching and learning process .It is described as a science to solve educational problems. The nature of educational psychology like its mother, i.e. .psychology, is well assumed as quite scientific. Scope of educational psychology is both limited and extensive .It is limited in the sense that being a science of teaching and learning, it should try to confine itself within the boundary walls. Remember, several other key concepts have been discussed under this unit. i. e. the definitions of psychology, the branches and the approaches to the study of psychology among which are behavioural, cognitive, neurobiological and others. We also looked at the functions and nature of psychology. Psychology we said is scientific, empirical and definable and that its study enables us to understand our environments, modify them and adapt to them.

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## Unit 2

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**Welcome to unit 2 of the “Introduction to Educational Psychology Module 1”. We are optimistic that you enjoyed unit one thoroughly and beyond this; we are sure you learned a lot. We now expose you yet another enthralling unit. This unit will discuss the developmental milestones in children and how these affect or influence development as a whole including learning.** It will describe how the individual develops from a baby, as well as some of the problems that can affect normal development.

### COMPOSITION OF THE UNIT

The unit will comprise the following concepts;

- Beginning of Life
- Meaning of development
- Stages of growth and development
- Various aspects of growth and development
- Principles of growth and development
- Hazards to an expectant mother
- Unit summary
- Assignment

**Upon completion of this unit you should be able to:**



#### Outcomes

- *Identify the stages in the development of a child*
- Explain factors that affect and influence child development during the stages of development
- Discuss the hazards to an expectant mother.
- Outline the roles of a mother during pre-natal

: .



### Terminology;

There are no strange terms in this unit because we guess from grade twelve background Biology, you are aware of terms such as development, zygote, chromosomes, genes etc. We advise you to consult your biology literature and or the dictionary for the meaning of these terms.



### Our spit!

As you may be aware, human life starts from a single fertilized cell. The constant interaction with the environment results in the growth and /development of the innate capacities, abilities and potentialities of the child. The task of formal as well as informal education is to help him in this path of growth and development. Therefore, it is imperative that the individuals are connected with the task of helping the child to grow and develop satisfactorily, must be acquainted with the nature of growth and development.

It is only with knowledge of growth and development of the learner at each stage of his life that it is possible for the teachers to render proper guidance, arrange learning instructional programmes for bringing personalities.

## HOW LIFE BEGINS

**When one day we asked our students to describe where life began, one student said life began in the sea, another one said life began with the creation of man in Genesis. Well our beliefs aside, let's carry the scientific meaning of the beginning of human life.**



Life begins at conception when two live cells fuse, a live male sperm and a live female ovum are fuse in the fallopian tube of a woman. The female stimulating hormones will cause the woman's temperature to rise during ovulation period making the conditions for conception ideal the possibility being 90%.

During sexual intercourse between a man and a woman, the penis penetrates the vagina. At the time of penetration, each sperm released carries **23** chromosomes. The ovum also realises or carries **23** chromosomes giving a total of **46** chromosomes after fertilization for the development of a normal human being to occur. In each chromosome there are small particles called Genes which carry the child's heredity. There are **20 000** genes in each chromosomes, **22** pairs are known as autosomes. These are responsible for making the whole body. The **23<sup>rd</sup>** pair is called the sex chromosome which is responsible for the sex differences.

A normal female has **XX** chromosomes while a normal male has **XY** chromosome. Sex type is determined by **XX** which is given child and **XY** which is boy child. But not all goes well at fertilization. Abnormalities in combinations occur resulting in certain defects.

### DEVIATION FROM USUAL CHROMOSOME COMBINATION



**Reflect!**

**What do we mean by deviation?**

Have you ever imagined why a certain boy has bigger breasts like a girl and a girl having beards and a bigger or deeper voice? Or maybe you could have seen someone with a very tiny head.....**what did you suspect?**



Deviation is movement from the normal. Chromosome deviations therefore entail movement from normal chromosome combinations. This is where what is expected of a normal combination of chromosomes does not happen or happens not as expected. Some of the deviations are as below;

- (i) A defect in a chromosome may lead to a case called a **Down syndrome** (Mongolian child) such children have the following features:
  - small head
  - oriental cast

- a defect in the eyes and heart
- in most cases the IQ is 25-47 (imbecile)

(ii) A female born with one 'X' chromosome goes to have a defect called Turners syndrome. The child will grow normally but fails to grow at puberty stage.

(iii) A man may be born with an extra one. He may be too taller than average and usually very aggressive and violent.

(iv) If the 23<sup>rd</sup> chromosomes fail to divide properly. The developing organs end up developing with an extra 'X' or 'Y'. Those with 'XXY' are physically male but marked with feminine characteristics i.e. Enlarged breasts and hips but no production of sperms.

(v) Loss of a chromosome may result in the death of an organ. For example, missing of limbs or no eyes or ears.

(vi) Genetic factors may also cause mental disorders. For example, advance syphilis damages the CNS (central nervous system) leading to psychosis; extra big head called Hydrocephalic or a small head called Microcephalus (idiot).

(vii) In addition, extra sex chromosomes also cause abnormalities such as Klinefelter's syndrome. Here the affected person has too many female chromosomes **XXY, XXXY, XXXXY** etc. Instead of the usual composition of **XY**. Such an individual has a superficial appearance of a male and usually with a normal sized penis by very small testacles. Such individuals suffer from emotional difficulties and show anti-social behaviours and in addition such males are sterile in nature.



### Writing Activity!

- State two abnormalities that may result from abnormal chromosomal combinations
  - .....
  - .....
- Our understanding of abnormal chromosomal combinations is that some behaviours are inherited. **True/ False**
- The acquisition of an extra chromosome leads to a condition called.....
- Which of the following conditions leads to small headedness
  - Mongolism
  - Down syndrome
  - Klinefelter
  - None of the above

5. The 23<sup>rd</sup> pair of chromosomes is called the autosomes and they are responsible for sex. **True/ False**

### SELF CHECK!

#### *Did you get the following answers?*

1. Down syndrome or Mongolism, Klinefelter's syndrome, Mental disorders such Microcephalus and hydrocephalus (any other from above)
2. True
3. Down syndrome
4. False ( The 23<sup>rd</sup> pair are called sex chromosomes



Well if you got the questions correct, you are advised to proceed to the next concept on stages of development.



### STAGES OF DEVELOPMENT

Within this unit, we also have to look at stages of development and the factors that affect and or influence development. You are well aware that development is a process. It does not happen at once. Everything develops from one level to the other, usually in a progressive manner. However development is either met with positive factors that influence it, negative factors that impede it. In this lesson, we will avail to you the stages of human development and what factors affect it.

Life is a journey. You have so far dealt with the beginning of life in the previous lesson. Since life is in stages we shall look at the stages of a human being from conception to birth.



### Reflect!

What is developmental psychology?-----  
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List some of the factors you think may affect a child's development

1. ....
2. ....
3. ....
4. ....
5. ....



## PRINCIPLES OF DEVELOPMENT

**It is important to take note that growth and development have principles. Below are some principles**

- 1) The principle of continuity. This means that development follows continuity. It goes from the womb to tomb and never ceases.
- 2) Development is predictable
- 3) The principle of development direction-development can go into longitudinal axis (head to foot) and can be in proximodistal.
- 4) The principle of individual differences with respect to their growth and development in various dimensions. Rate of growth and development is not uniform-development is more rapid in the early years of life and slows down later in the later years of childhood.
- 5) The principle of integration- Kuppuswamy, (1971), observes that development involves movement from the whole to the parts and from the parts to the whole.
- 6) Development is spiral and not linear



Developmental psychology can be defined as the study of the psychological development of human across the total human life span from conception to death.

In this work we use the life span approach to describe human development.

This means that we examine the developmental stages in chronological order. We begin with pre-natal development as earlier on mentioned and competences of the new born and move to the development during infancy, childhood, adolescence and adulthood.

Having looked at the principles of growth and development, let us now look at the stages of development children go through.



## **PRE-NATAL STAGE.**

Human development begins in a fraction of a second in a woman's fallopian tube where the sperm [male sex cell] unites with the egg cell or ovum [female sex cell] to form a zygote. This process is called fertilisation [conception]. The zygote is about the size of a full stop but it contains all the material inherited from the father and the mother. All the other cells in the body will develop from this single zygote. The pre- natal phase is divided into three stages.

### **THE GERMINAL PERIOD [0-2WEEKS]**

The germinal period starts from **0-2** weeks .The germinal period begins with conception and lasts for about two weeks as earlier on mentioned .Within approximately 24-36 hours after conception, the zygote divides into two cells. These further divide into 4 cells and further into 8 and so on .By the end of the 4<sup>th</sup> day, more than 100 cells group together in a ball formation. Some of the cells later develop into the heart, stomach, skin and other parts of the body. While cell division takes place, the cell mass moves slowly through the fallopian tube and reach the uterus [womb] after three to four days. In the uterus, the cell mass attaches itself to the uterine mucus membrane, a process known as implantation.

### **THE EMBRYONIC PERIOD [2-8WEEKS]**

Let us now focus on the embryonic period .This one lasts from implantation until about 8 weeks after conception .The developing organism is known as the embryo. Organs begin to develop including the heart [which start beating on the 23<sup>rd</sup> day] , the nervous system stomach and the oesophagus. The embryo starts to take the shape of the human form with eyes, nose, jaws, mouth, and lips. The arms have elbows, hands, and stubby fingers and legs have knees, ankles and toes. By the end of this phase, the embryo is about 2.5 cm long and can comfortably fit into the palms of one's hands.

### **THE FETAL PERIOD**

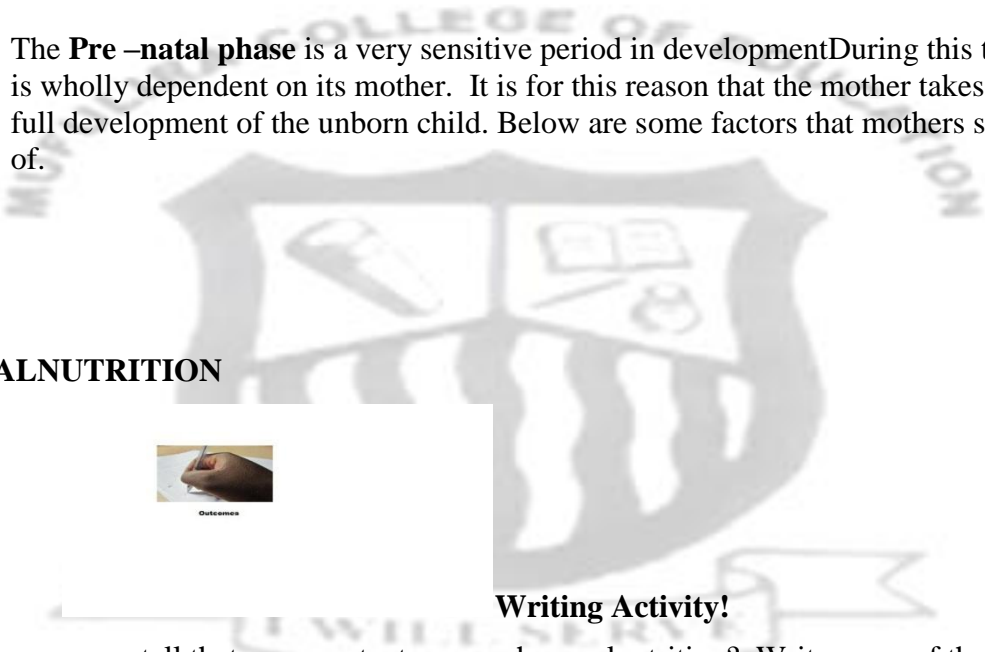
The fetal period from the end of the embryonic period to birth. Because of the ossification of the skeleton and the developing organism (now known as the foetus) can execute movements. During the third month, the first signs of external sex organs appear. During the sixth month, the eyes are formed and can look in all directions. The eyelids can open and close. The foetus now breathes rhythmically and even cries. The seventh month is the important milestone, since from this period the foetus will be able to survive if it is born. However, viability will depend on factors such as birth weight, general physical well-being and medical care after birth.

Birth usually takes place after the 38<sup>th</sup> week (nine months of pregnancy). The unborn child is well protected in the womb however, recent psychologist have come to recognise that there are several factors that can have a serious negative impact

## CONDITIONS AFFECTING PRE-NATAL STAGE OF DEVELOPMENT

We asked you to list some factors that affect development above. Did you list them? If you did, this is now an opportunity for you to compare your answers as we avail to you the factors that affect child development from early stages in life.

The **Pre –natal phase** is a very sensitive period in developmentDuring this time, the embryo is wholly dependent on its mother. It is for this reason that the mother takes extra care for the full development of the unborn child. Below are some factors that mothers should be aware of.



## MALNUTRITION



### Writing Activity!

How can you tell that an expectant woman has malnutrition? Write some of the indicators in the space below.

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**Malnutrition** can be defined as the condition that develops when the body does not get the right amount of vitamins, minerals and other nutrients that it needs to maintain the body.

When the expectant mothers’ diet is not good enough, abnormalities can occur in the child. Prolonged malnutrition by the mother may affect the growth of the foetus and may result into the following.

- High rise in still births
- Low birth weight
- Premature births
- Deformities

- Retarded growth
- Death during the first year of life
- Poor intellectual development
- The child being born with rickets
- The child may suffer from epilepsy leading to fits
- The child may suffer from cerebral palsy (muscle failure).

## SYMPTOMS OF MALNUTRITION

These are some of the symptoms that make one get concerned and attribute the condition to malnutrition.

- Unplanned weight loss.
- Weakening of the muscles, which then begin to waste away
- Tiredness
- Lacking energy
- Dizziness
- Irritability
- Dry skin
- Persistent diarrhoea

Are there any other symptoms you know? List them on the space provided



Outcomes

## ACTIVITY

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## EMOTIONAL STRESS.

Many things cause us to be stressed. These could be from the work place, at home or other problems. In an expectant mother, too much emotional stress or too much feeling can disturb the foetus. In case of emotionally stress any of the following can take place:

- Have premature birth.
- A miscarriage especially in the first 2 months (1-2 months).
- Giving birth a still born child.

## MATERNAL ILLNESS



**What illnesses can you think of that may affect the child before they are born? List some below.**

- i. ....
- ii. ....
- iii. ....
- iv. ....

During pregnancy it is not common to harm the unborn child since most illnesses and bacteria cannot penetrate the placenta. However, some agents can cross the placenta. Below are some diseases that the unborn baby can suffer from due to an infection the mother suffers from. The effects of these diseases are also highlighted.

- Rubella (German measles) may cause heart defects, deadness, blindness and mental retardation, miscarriages and stillbirths.
- Syphilis can result in various physical and mental disabilities.
- Other diseases, which can be transmitted to the foetus, include; chicken pox, mumps tuberculosis, malaria and herpes (Samson, 1988).
- Genital herpes is usually transmitted during birth, when the newborn comes into contact with fluids present in the mother's genitals. When the newborn contracts this disease, they may suffer many harmful effects like paralysis and brain damage.

## MEDICATION AND DRUGS.

**Have you ever realised that taking un-prescribed drugs is dangerous to development?**

It is not unusual that an expectant mother feels uncomfortable from time to time. During this time, depending on circumstances one may be tempted to take unprescribed medicine. In other situations, expectant mothers may be addicted to certain foods or

drinks that may have substances that may have negative effects on not only themselves but also on the unborn baby.



### Reflect!

If you are studying with friends, discuss cases that you have heard about in which an expectant mother took medicine that affected the unborn child. If you are studying alone, you can write one incident below.

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A wide variety of medication and drugs can have negative influence on the unborn child. Several of these effects could be:

- **Alcohol:** Any amount of alcohol use can cause abortion and behaviour dysfunctions. Alcohol abuse can cause foetal alcohol syndrome, with serious consequences.
- **Nicotine:** Nicotine is a substance found in beverages like coffee and too much of coffee intake by an expectant mother may cause miscarriage, premature births and low birth-weight interferes with cognitive development in early childhood. Stimulates in coffee, tea and soft drinks-can slow mental growth and contributes to premature birth.
- **Sedative:** These are substances that can become addictive like marijuana, sleeping tablets. These are likely to cause problems in sucking and breathing.
- **Opiates**-brings about convulsions, breathing problem, high mortality rate, behavioural problems.
- **Cocaine:**causes premature births, low birth weight, small cranial circumference (skull size).
- **Aspirin:** which is sold without restrictions is highly abused and it may cause fatal bleeding and low birth weight in an unborn baby.

### RADIATION.

This refers to repeated exposure to x-ray. Radiation treatment is commonly used in cancer patients. High-level radiation in the atmosphere can harm the unborn child. In recent times, expectant mothers go for x –rays to know establish the gender of their unborn child. This practice should be sparingly because cells in the process of division and differentiation are exceptionally vulnerable. Consequently, exposure to radiation that presents no little or no risk to adults can be harmful to unborn children.

The effects of x rays may be seen in some of the following disorders,

- Retardation growth in the child.
- Mental retardation
- Chromosome disorder
- Seizure and poor performance on IQ tests.
- Physical abnormalities,
- Heart diseases
- Leukaemia.

**Note:** You can get radiation from many sources which may not avoid though direct radiation from scanning directly affects the unborn baby. Phones and other electrical applications emit rays that may be dangerous to us though the effects may not be immediate as those that would affect the unborn child during scanning.

## MATERNAL NUTRITION.

The unborn child is dependent on the mother for all its nutritional needs via the placenta and the umbilical cord.

When the expectant mothers' diet is not good enough, abnormalities can occur in the child. The most common are: high rise in still birth, low birth weight, premature births, deformities, retarded growth, death during the first year of life and poor intellectual development. Poor maternal nutrition is one of the reason why the infancy motility rate in Africa is approximately 15 time high that of the USA(Steinberg and Meyer, 1995)

Having discussed the factors that can affect the unborn baby during pre-natal development, it is important that we remind ourselves of what the expectant mother is expected to do.

## ROLE OF THE MOTHER DURING PRE-NATAL



### Reflect!

1) The mother should attend ante-natal clinic while pregnant.

Why do you think the expectant mother should attend ante-natal clinic?

List the reasons on the space below.

.....

.....

.....

.....

Now look at some of the reasons below.



**Reasons for anti-natal attendance are many folds:**

- To detect some diseases
  - To know the position of the baby
  - To ascertain the blood content
  - To detect the level of blood pressure
- 2) The woman should eat nutritious food to avoid malnutrition into the upcoming baby.
  - 3) Un-prescribed drugs should be discouraged to avoid miscarriages.
  - 4) She should avoid carrying heavy loads but encourage her to do some exercises
  - 5) She should avoid emotional stress.
  - 6) She should avoid excessive alcohol and smoking to avoid fatal consequences.
  - 7) The pregnant woman should maintain high standards of hygiene both cloths and food.
  - 8) Should develop positive attitude towards pregnancy.
  - 9) At all costs to avoid cholera and malaria. Has to be conscious of traditional medicine.
  - 10) To avoid tight cloths and high heeled shoes.
  - 11) She must have ample time for rest and get frequent fresh air. (Kaplan et al, 1999).

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## Unit summary



### Summary

We have come to the end of **Unit 2**. In this Unit, we have looked at how human life begins. Furthermore, we have explained the phases of pre-natal development namely germinal, embryonic and fetal phases. The hazards or factors expectant mothers are likely to incur have also been discussed and they have negative effects on the child. Mothers have a mammoth task to ensure that their children are free from hazards that affect the child's development. We hope that you have added to the knowledge that you came with the drawing table.

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## Assignment

Having completed this unit, assess yourself by attempting the following questions.



### Assessment!

- 1) Explain the difference in meaning between growth and development in educational psychology.

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- 2) Discuss how an expecting mother should look after herself

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- 3) As a school teacher how can you promote mental hygiene in the adolescents?

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4) Name two factors that can lead to an expectant mother experiencing emotional stress?

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## Unit 3; INFANCY AND CHILDHOOD

### Introduction

Welcome to Unit 3. This unit is a continuation of what has been discussed in Unit two. In this unit, we are expected to cover the following:

#### UNIT COMPOSITION.

- Infancy
- Early Childhood
- Adolescence
- Summary
- Assignment

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### INFANCY AND EARLY CHILDHOOD

After a baby is born, it goes into post natal development. This period is not over emphasised as everything that happens when we are alive is after birth. This unit will discuss aspect of human development from infancy, early childhood and adolescence.

The word 'infancy' comes from a Latin word ' infans' meaning 'without speech'. Infancy includes the period from birth to the age of about two to three years. It is during this time that personality, social attachment, thinking and language first take shape. During infancy, the baby becomes capable of sitting, crawling, grasping and climbing.

### Physical Development

Infancy is characterised by extraordinary rapid growth and development in all areas. In general babies triple their mass during the first year of life, while there heights increase by 75%. during the best of the childhood the rate of growth is more even. Changes in body proportion are, however, more evident during early and middle childhood than in infancy. During its early

childhood, the baby loses its chubbiness because of the lengthening of the torso (Louw,d 1997:484).

During middle childhood, the legs and palms grow faster than torso, giving the child a speedy appearance. As the baby grows, caterage changes to bones, muscles thicken and teeth start to appear. The development of the central nervous system is of special importance for the child's social and cognitive development. As the child grows, neurons are gradually covered with a myelin sheath. The process of myelination continues throughout childhood and adolescence. The process provided the basis for the child's increasing complex abilities. The brain reaches mature size and weight during middle childhood.

## **Motor Development**

This development of infancy's abilities to move their arms and legs. Large motor actions develop first. They lift their heads, roll over, sit crawl and eventually walk. The capacity for fine motor movement also develops gradually. At first, the infant grasps the object with the whole hand. In the time, the child holds the object between the finger and thumb. As the sensory functions and the fine and large motor system become integrated, more complex actions are possible. Before the end of infancy, most babies can climb stairs, walk backwards, and run and jump.

Motor skills and bilateral combinations improve dramatically during early childhood. The process of refining the large and fine motor skills continues throughout the child's middle childhood. While at the same time, some increase in power, coordination and muscle control also occurs. The consequences of early development seem to be more or less the same in all babies. Most babies sit before they stand, crawl before they walk and so on. The tempo of development, however, seems to vary between cultures. Babies in some African cultures for example are more advanced in their early development of motor activities than white babies. They sit earlier begin to move around earlier (Doup. 1997:487)

## **Social Development**

An infant's social relation begins with his mother or primary caregiver and these are later extended to other members of the family. By 24 months, they play near each other rather than with one another.

Play, as the child's work plays a central role in the child's development. It fulfils a large number of functions and satisfies a wide range of needs. Play helps to satisfy the child's curiosity. It helps to help them motivated and active. Through play, the child explores the environment, experiments new behaviour acquires new skills and expresses a wide range of emotions.

## EMOTIONAL DEVELOPMENT

Research has shown that attachment is not automatically present at birth, it develops in stages (Bowlby:1969)

Infants become attached to their mothers and fathers because they are comfortable, familiar and responsive.

Once an attachment forms, infants who are separated from their caregivers are likely to be distressed. It has been observed that infants who display secure attachment to their mothers generally become socially competent pre0scholars. If denied the care, infants tend to be pathetically withdrawn, anxious and even abusive.

## COGNITIVE DEVELOPMENT

Infants cognitive abilities develop rapidly. After a few months, infants can mentally group similar objects into a simple category. They also show special interest in objects that look or feel different from familiar ones.

Infants long term memory for specific events is very fragile at a few months of age. Research has however demonstrated that infants can retrieve memories when given appropriate cues.

By 8/9 months, the memory abilities of infants has improved eg they can imitate behaviour they witnessed earlier. By the end of the 1<sup>st</sup> year, they can discriminate between fe/male.

## EDUCATIONAL IMPLICATIONS

- 1) The child's motor skills are facilitated and consolidated when a child is engaged in a variety of physical activities.
- 2) Nutrition contributes to physical development, therefore, it is vital if the diet is deficient, the learner is likely to show retardation.
- 3) A learner who is physically active is dependent of his muscular growth and co-ordination as well as his sense of self-confidence and assurance.

## Early Childhood

The early childhood phase is characterized by marked physical and emotional growth. Somewhere between 2 and 3 years of age, children reach half of their adult height. The twenty “

baby teeth are in place at the beginning of the stage and by the end, they begin to fall out. Children are ready to enter school by the time the stage ends and at about 5 to 6 years. They have mastered the task of primary socialization-to control their bowels and urine, to dress and feed themselves, and to control their tears and temper burst, at least most of the time. The term Pre School for the age group of 2½ to 6 years may be a misnomer, because many of the children are already in school like setting, such as pre school, nurseries and day-care centers. Preschool education can be of some value; however, too great a stress on academic advancement beyond the capability of the child can be counterproductive (Kaplan et al, 1999).

## **ADOLESCENCE**

Adolescence is a very challenging period. What are some of the experiences you have had with adolescents as a student teacher?

### **Physical Development**

#### **When a boy/girl**

To start with, the beginning of adolescence is marked by the attainment of puberty. (The word puberty comes from the latin word “pubestas” meaning age of manhood). This marks the onset of sexual maturity. The progress of the development is controlled by a tiny gland called “pituitary” which is found in the brain. It produces hormones. These are chemical substances that enter the blood, make the sex organs develop and are also responsible for the development of the secondary sexual characteristics (female sex hormones is called estrogens and male sex hormones are called testosterone).

In female, the following primary sex characteristics take place. There is completion of growth of the uterus and vagina. They began to menstruate. Their bodies go through a circle (the menstrual circle) lasting about twenty-eight days. After an egg has been released from the ovary, the lining of the uterus becomes the thicker. The uterus is where the egg will grow and develop if it is fertilized, the lining is not required. The egg therefore falls off and passes out through the vagina, causing bleeding called menstruation or monthly period.

The following secondary sex characteristics are also worth noting. The growth in height and weight, the breast develop, pubic hair appears in private part, the hips broaden to make child bearing possible and the body take on round female contours.

In males, the tests and penis increase in size. The sperm begins to be made in the testes, which hung in the bag of skin called the scrotum. So many sperm cells are produced by the testes that they sometimes spill out through the penis. This is often accompanied by a vivid dream and therefore called “the wet dream”. This is a perfect natural occurrence.

The following secondary sex characteristics also take place:

pubic hair appears in private parts, the shoulders broaden, the voice deepens and the beards begin to grow. Muscular development may spout ahead.

## Factors Affecting/Psychological Development

Having looked at the physical and characteristics of adolescence, let us consider the affective and psychological development of adolescents. Adolescence at this stage, think of themselves and feel offended anyone talking ill or bad remarks on them. They consider that people are not interested in their welfare.



As you were growing, can you give your own experiences during this period?

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With the advent of adolescence, the individual become extremely self-conscious. The important characteristic is re-orientation of the effective aspects of life. The pendulum of his life oscillates between intense excitement and deep depression. Sometimes it becomes moody and interactive in manner. He tends to live in the realm of fantasies that are nearer to his heart's desire. He becomes egocentric and introverted. He hates, he fear, he loves. He tends to lose his temper easily especially if his prestige or freedom is at stake.

An adolescent shows two main characteristics:

1. Emotional
2. Exaggerated sensibility.

## Educational Implications

- 1) Outdoor activities (like scouting) may help the adolescent to come out of his fantasies.
- 2) The teacher should help the adolescent gain control over his emotions and attain emotional stability.

## Social Development

Man is a social animal. How do you understand this statement? Social interaction is important to every person. Adolescents are no exception. Adolescence is the period of social expansion as well as constriction. Freedom and mobility of teenagers help the adolescent to make a great number of social contacts of varying degrees of intimacy. Common characteristics, similar future

plans and common interest may be the underlying factor in the formation of peer groups (or sub culture) of the adolescent because rather fussy (restless) and selective in his choice of companions.

Social behaviour during adolescence is greatly influenced by the onset of sexual maturity. During early adolescence, the individual shows the need for close friendship with other teenagers of his own sex. Friendship becomes intense and make stable (in some cases, this might result, unfortunately, into homosexual activities.)

During middle adolescence, the adolescents begin to show interest in making friendship with member of the opposite sex. They begin to form groups comprising of both sexes. They show interest in activities, which offer scope of coming together (e.g dancing cycling, hiking, picnics and parties). Hetero-sexual phase supervenes at this stage. Both sexes seem to be much concern about dress, looks, cosmetic, style and fashion in order to impress members of the opposite. The search for popularity and security leads the adolescent to form attachments with a variety of persons. Sexual impulses initiate craving and jittering. Sometimes this makes him or her to be emotional unstable she/he loses concentration and hence suffers academically. Sometimes his or her attachment to somebody of the opposite sex may disturb the parents or teachers.

## **Cognitive/Intellectual Development**

This stage is characterised by deductive thinking. Piaget assumed that all the people attain this stage regardless of educational or related experiences.

Research however, does not support this hypothesis; it shows that the ability of adolescents to solve complex problems is a function of accumulated learning and education

## **Sexual Development**

Adolescence is a very trying time during development. Because the boys and girls experience physical changes due to the hormonal secretion, they are bound to be tempted into experiencing sex. Recent studies show that almost 50% of adolescents under the age 15 and 75% under the age of 19 have sexual intercourse

## **Emotional Development**

Adolescence is a period of emotional stress. This is a result of the rapid and extensive physiological changes occurring during puberty.

Each adolescent has a unique task: to develop from a dependent to an independent person who relates to others in a humane and well socialised fashion.





### Writing Activity!

List at least 10 social problems faced by adolescents are likely to face while at school.

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As a student teacher, the chances are high that you have dealt with adolescents either at home or your place of work. What problems have you incurred? Kindly list down some problems that you adolescents experience .

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Look at some problems of adolescent behaviour written below.

- Masturbation
- Unplanned pregnancies
- Sexually transmitted infections and AIDS
- Resentment of authority
- Strong sexual and emotional fallings
- Desire for independence but economically and vocationally they are dependant.

Peer groups give the adolescents emotional satisfaction, which come from “belonging”. It also gives him status and opportunity to practice his social and other skills. It also helps him to develop the philosophy of his life. Adolescents stake almost everything to win and hold approval of their age mates. During middle childhood, peer group influences supplement that of home and school but during adolescence it may tend to support the influence of these institutions.

## EDUCATIONAL IMPLICATIONS

Sex is the fundamental factor of adolescence. Like the overflow of the great river, it irrigates and facilitates great tracks of life's territory. The whole business of adolescent education, then, is the “long circuiting” of sex instinct, the redirection of this energy into useful channels. Therefore, besides physical activities, the adolescent should be helped to sublimate the sex instincts in all sorts of creative work.

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### Unit summary



#### Summary

In this unit you have learnt how teachers and parents should assist an adolescent to find his/her place in the society as a whole. She/he must learn to be socially acceptable, to accommodate his or herself to folkways, customs and morals of the community. Education must help him regain thinking and acting regardless of how much these patterns stand out in tune with adolescent peer ideas and values.

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## Assignment



### Assignment

#### ASSIGNMENT

1. Describe emotional characteristics of adolescents as they grow.

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2. How can a teacher help solve adolescents problems at school?

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3. What problems do adolescents face at home and school?

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4. Give strategies how you can alcohols and smoking adolescents at your school and community

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## Unit 4

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# INTRODUCTION TO SPECIAL EDUCATION

Welcome to Special Education component of the Introduction to Education Psychology Module 1. We have decided to include special education content in our syllabus in order to meet policy guidelines and the needs of learners with special education needs included in the mainstream settings. This module will therefore avail trainee teachers the opportunity to be acquainted with knowledge about children with Special Education Needs, the identification of special education needs, causes of impairments and disabilities, skills of handling learners with special education needs and providing effective teaching and learning environments for all learners regardless of their varying needs.

## INTRODUCTION

Welcome to unit 4 of this module. This unit gives you an introduction to special education. It introduces philosophical concepts about special education and its development. We believe history provides a firm foundation for the future.

Upon completion of this unit you should be able to:



### Outcomes

- **Define** terms such as Special Education, impairment, disability and handicap.
- **Describe** The development of special education in Zambia.
- **Analyse** the policy documents on education with particular attention to special education in the light of today.
- **State** forms of special education provision in Zambia.
- **Evaluate** the merits and demerits of form of special education provision.

# INTRODUCTION TO SPECIAL EDUCATION

## WHAT IS SPECIAL EDUCATION?



### Reflect!

Go back in memory and the past; recollect your experiences with people that were considered outcasts in your community. Why were such people considered outcasts? List about ten of such cases even in your local language below;

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....
7. ....
8. ....
9. ....
10. ....

Perhaps you have listed more than ten. These are people who were either part of our families or our neighbours. They were either not able to see, hear, walk properly, were mentally disordered, had abnormal skin color and many others. Several derogatory terms were used for these cases, chimbinda, chintomfwa etc according to the disability. Was there any help rendered to these people? Or perhaps they were marginalised. Historically, if one had a disabled person in the family, they killed, buried alive or threw away the child. It was considered an omen to have a disabled child in the family, an abomination and a curse or punishment from God to have such a child.



### Writing!

Write a short paragraph of how people with disabilities were treated in your local village community.

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#### NOTE!

Today society has realised and acknowledged the natural causes of disabilities and the worth of accepting and educating learners with disabilities. Against the odds of the past, today Governments, Non Governmental organisations and individuals work hard to try and find ways of making the disabled children learn and be productive in society. Campaigns and laws to protect the rights of disabled persons have been launched.



### Reading!

#### DEFINING SPECIAL EDUCATION

What usually is a bone of contention is coming up with a definition of special education which would be unbiased, representative and appropriate for all communities. There will however be attempts to define special education though some inadequacies will still be seen in the definitions. The questions that arise from these definitions are who qualifies for special education? What is special about special education? How does one qualify for special education, how is he or she identified, what degree? Etc

Some of the definitions are:

- **Special education** is the type of education offered to those who for certain reasons do not benefit from the normal curriculum. The question here is who are these? What reasons do they have to deserve special education?



- According to **Brennan**, special education is that combination of curriculum, teaching, support and learning conditions necessary in order to meet the pupils' special educational needs in an appropriate and effective manner. It may form part or all pupils' curriculum.
- A **special need exists** when any disability (physical, sensory, intellectual, emotional, social or any combination of these) affects learning to the extent that any or all of the special access to curriculum, special or modified curriculum or specially adapted conditions of learning, are necessary if the pupil is to be appropriately and effectively educated.
- Farrant (1991) says special education is any teaching system that attempts to provide a more appropriate form of education for children whose physical or mental condition makes normal teaching methods unsuitable for them. The key to special educational provision is to help each needy child to adjust and compensate for his or her disability (child 1993).

**We have learnt that special education is the education provided to learners with sensory, physical, mental and many other challenges that inhibit learners affected from benefiting fully from the educational curriculum, teaching methods and resources provided in ordinary schools.**

## TERMS COMMONLY USED IN SPECIAL EDUCATION

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**SEN-** the letters stand for Special Education Needs. This refers to the needs of a learner who has a disability. E.g. one special education need would be a wheel chair for the physically crippled.

Initially SEN used to be called educational handicap, refer to (MOE 1977) and Child (1997:337). SEN was broader than the other term hence was adopted for use recommended in the Warnock Report of 1978. The term handicap tended to perpetuate and exaggerate the distinction that have and those that do not.

The broader term covers children, who have varying degrees of difficulty in learning, more so than the majority children of a similar age and those with disabilities which prevent them from using all the normal educational facilities usually provided in schools.

The change in terminology was intended to shift the emphasis from the disability to the particular educational provision needed. Also classifications according to disability in the Warnock report were avoided to prevent stereotyping and labelling of children with special education needs.

**SNE-** stands for special Needs Education; referring to the type of education learners with special education needs receive.

**ADHD-** Attention Deficit Hyperactivity Disorder; referring to learners who lack attention and are usually hyperactive.

**CSEN-** acronym for children with special education needs

**IMPAIRMENT-** this is an abnormality, structural, physiological or psychological that results from an accident, injury or disease. **e.g.** loss of an ear, finger, or gain, swell in case of goitre or hunchback. Impairment may not mean a disability unless the impairment gives a restriction to perform a certain function.

**DISABILITY**- A loss of function or a restriction on performance caused by an impairment. It is an inability to perform a certain function as a result of an impairment one has. E.g. loss of a hand makes one unable to drive- the driving function is disabled because of the impairment one has. A disability may not mean a handicap- the degree matters.

**HANDICAP**- is a social dysfunction or disadvantage making one fail to fulfil his or her potential as a result of an impairment or disability. Every human has a potential to do something, earn a living, find a job, and compete for jobs, participate in community development. However, a person who is handicapped cannot exploit his or her potential because he or she has no means, cannot compete but the will is there.



Outcomes

### Activity

With clear examples, differentiate the terms **impairment**, **disability** and **handicap**.

#### NOTE!

**Not all those who are impaired are disabled and not all who are disabled are handicapped. One can be impaired without being disabled though everyone disabled has impairment. The degree of the impairment determines the disability and the degree of the disability and impairment determines the handicap.**

## **HISTORY AND DEVELOPMENT OF SPECIAL EDUCATION IN ZAMBIA**

Having a brief understanding of where we have come from helps us to prepare where we are going. History always provides a basis and a foundation for the future. Below is the brief history of special education development in Zambia.

### **THE DEVELOPMENT OF SPECIAL EDUCATION IN ZAMBIA**

The history of special education in Zambia can be traced from 1905 when a wife to a Missionary by the name of Mrs Issie Hofmeyer, opened a class for the blind at Magwero in Eastern Province of Zambia. Because the main aim of the missionaries was to evangelize, she transcribed Braille into Nyanja. There were five blind students that opened the class and Lazarus Banda was among the first students who even took over the class after the death of Mrs Issie Hofmeyer in **1910**. Another Missionary by the name of Miss Bote learnt from that idea and opened a class of 12 students for the blind at Madzimoyo. When demand was high, another class was opened at Nyanje in **1923** and another at Magwero in **1930**. Blind students who passed standard four were trained as teachers of gospel. By **1963**, boys who passed standard six were trained as teachers, telephone operators or as evangelists. The syllabus mainly focused on life skills, training to make baskets, brooms, mats etc.

Magwero inspired the opening of other several schools such as Jonestone falls, Chipili, Sefula, Kambowa, Mporokoso and Bwana mukubwa. Miss Bote then opened an orphanage which later led into the opening of a school for the deaf. The first deaf taught became a teacher for the dumb.

This was a pre colonial period and the colonial government did not have concern for the education of special needs children. Special education is therefore traced from the will of voluntary agencies.

### **POLICIES**

The first document in Zambian education was the Education Act of 1966. This document did not make any mention of special education. This period was characterized by segregated education between the whites and the blacks.

Government commitment towards special education was only seen through opening a college that could train teachers to teach children with special education needs. This was Zambia College for the Handicapped at Kamwala in Lusaka. Due to the negative connotation that goes with word 'handicapped', the name was changed to ZAMISE- Zambia Institute of Special Education. The idea is that the college was not for the handicapped but for teachers who could teach children that had special education needs and not 'still' handicapped. "See definition of handicap above"

## **THE 1977 EDUCATION REFORM DOCUMENT**

The Government showed further commitment through the 1977 education reforms document that had comprehensive strategies on how special education could be run in the country. Though without legal backing, the document came up with the following considerations;

- The role of the Ministry was to coordinate, administer and develop professionals and plan for special education.
- Others were to design curricular and teaching materials
- Inter ministerial cooperation where ministries could work together in the provision of special education
- The emphasis this time was on identification, assessment and the provision of special education. The main categories of disability then were the blind, the deaf, the physically impaired and the mentally retarded.

## **THE 1992 FOCUS ON LEARNING**

This document emphasized on the fact that every child must be in school. Access to education was to be given to every child regardless of their circumstances. The document looked at strategies of meeting special education needs.

## **THE 1996 EDUCATING OUR FUTURE**

This was a very comprehensive policy though has its own challenges. This document is propelled by three key statements on special education. These are:

- The Ministry will ensure equality of educational provision to children with special education needs.
- The Ministry will be committed to providing education of particularly good quality to children with special education needs.
- The Ministry will improve and strengthen the management and supervision of special education in the country.

## **THE STRATEGIES**

To meet the above statements, the Ministry came up with strategies for implementation.

- ❖ Working closely with the ministry of Health, the Ministry of Education will decentralize services for the identification, assessment and placement of children with special education needs. (Is this done, if not why?)
- ❖ To the greatest extent possible, the Ministry will integrate pupils with special education needs into the mainstream institutions and will provide them with necessary facilities.

However, where needs is established, the Ministry will participate in the provision of new special schools for the severely impaired. (Has this been done? If not why? What constraints hinder the implementation of this?)

- ❖ The Ministry will cooperate with private, religious, community and philanthropic organizations in
  - ◆ Meeting the special educational needs of exceptional children, and
  - ◆ Providing outreach services for children whose impairments prevent normal attendance in school.
- ❖ Education boards to ensure that special education needs within their jurisdiction are met and will be evaluated on their discharge of this responsibility.
- ❖ The Ministry will dispense with all direct educational costs for children with special education needs and will provide bursaries for such individuals at tertiary level.
- ❖ The Ministry will give attention to the educational needs of exceptional children by;
  - Training an adequate number of teachers in special education
  - Designing appropriate curricular and teaching materials
  - Prescribing specifications for special furniture, equipment, aids and infrastructure provision
  - Developing appropriate support technology systems and
  - Providing adequate supervision of special education programmes
- ❖ The Ministry will enlarge and decentralize the special education inspectorate

**NOTE:** make an evaluation of the strategies and say what the Ministry has been able to implement so far and what has not. From your evaluation, are we making headways in implementing the special education policies?

## MODELS OF SPECIAL EDUCATION PROVISION IN ZAMBIA



### Reflect!

**Did you learn together with learners with Special Education Needs in the same classroom?**

**If yes, how do you describe the practice of learning together with learners with special**

**education needs? What are its benefits and challenges of learning together with learners with Special Education Needs? How best can schools be improved to make learning of learners with special education needs meaningful?**

Learners with special education needs in Zambia are educated in various institutions depending on the type of need, the degree of the disability and social needs. There are those who are mild (may receive mainstream teaching with support of ancillary staff and special facilities), those who are moderate (requiring modified curriculum similar to that provided in ordinary school) and those who are severely impaired (requiring individual curricula).

**UNIT-** this is a provision where learners with special education needs learn within the same school environment with those without disabilities. They mix during break and other social functions but learning is conducted in a separate classroom for only children with SEN

**SPECIAL SCHOOL (RESIDENTIAL)-** Only learners with special education needs are found in the environment. It's a segregated form of education specifically for certain categories of learners. E.g. Sefula Secondary school in Mongu

**SPECIAL SCHOOL (DAY)** – this is like the special residential but the difference is that learners in this provision are day scholars. They go to learn everyday from their homes.

**HOSPITAL UNIT-** There are learners who normally require both medication and education. Such learners are provided with education within the hospital premises.

**COMMUNITY BASED REHABILITATION CENTRES-** charitable organisations also provide education to learners with special education needs. These include churches. E.G Places such as CHESHIRE homes

**INCLUSIVE SCHOOL-** placement of learners who have disabilities or learner with special education needs into the ordinary classroom to learn and receive teaching and all other treatment a child who has no disability would receive.





### Activity

Discuss the advantages and disadvantages of each of the provisions above

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## Unit summary



In this unit you learned the definitions of key terms such as special education, impairment, disability and handicap. We said special education is the education provided to learners with sensory, physical, mental and many other challenges that inhibit learners affected from benefiting fully from the educational curriculum, teaching methods and resources provided in ordinary schools. We also said impairment is a term that describes a structural abnormality as a result of disease, injury or accident and a disability as a loss of function resulting from impairment. A handicap is a social dysfunction that incapacitates someone from fulfilling their potential. We also learnt that special education in Zambia started with Blind in Eastern Province of Zambia. Education policies on special education evolved from the 1970s without the education act of 1966 including special education. Special Education in Zambia is provided in hospital units, special schools, school units, inclusive settings and community based rehabilitation centers.

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## Assignment



Discuss the traditional beliefs associated with the causes of impairments and disabilities in your local village community. How can you as teacher sensitize the local people against such false beliefs?



Explain the relevance of including special education content in the college curriculum.

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## Assessment



Assess  
yourself!

1. Define the following terms
  - a. Special Education
  - b. Impairment
  - c. Disability
  - d. Handicap
2. Special education provision in Zambia started with the .....category.
3. State at least two forms of special education provision in Zambia
4. What do the letter **ADHD** stand for?
5. List the education documents that have governed education in Zambia from 1966
6. Which of those documents in 5 make no mention of special education?
7. A learning environment in which all learners regardless of their abilities and disabilities learn together is called.....

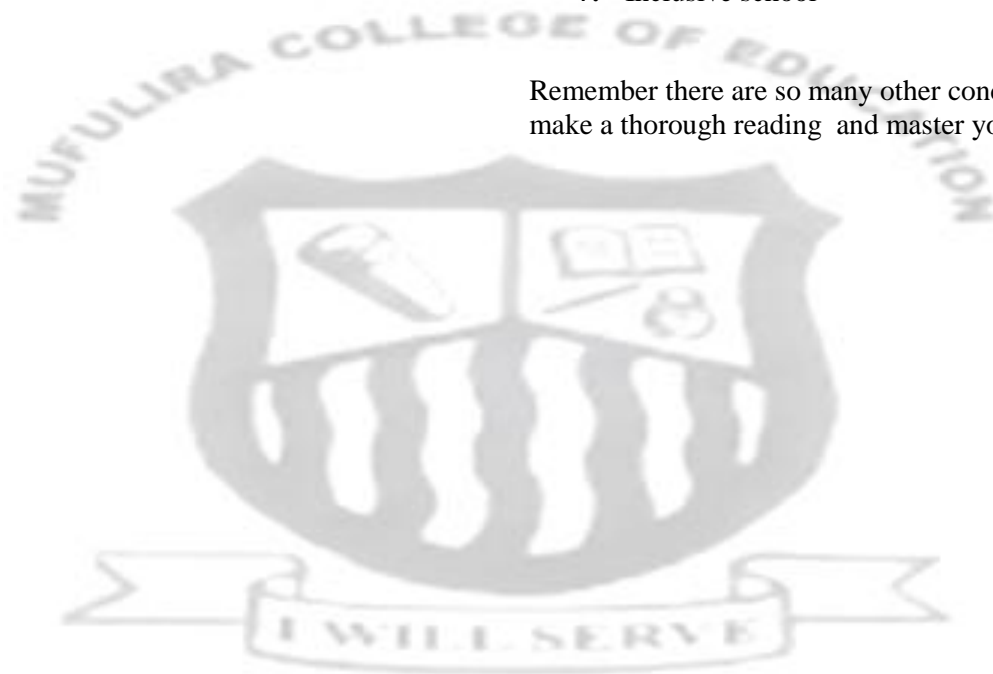
**Consult your notes above for the options! Or did you find something closer to these below?**

### **SELF CHECK!**

1. Defining the terms, special education, impairment, disability and handicap;
  - a. **Special education** is the education provided to learners who do not benefit from curriculum, teaching methods and teaching and learning resources available due to circumstances such as disability, disease or any other vulnerability.
  - b. **Impairment** is an abnormality in structure of any body organ as a result of disease, injury or accident.
  - c. **Disability** is a restriction in functioning of a any body part as a result of impairment or a loss of function as a result of an impairment.
  - d. **A handicap** is a social dysfunction makes one fail to fulfill their potential or makes them fail to earn a living.

2. Blind
3. Special school residential, unit, hospital unit, inclusive school, **CBR ( any 2)**
4. Attention Deficit Hyperactivity Disorder
5. The education act 1966, the 1977 education reforms, the 1992 focus on learning and the 1996 educating our future
6. The education act 1966
7. Inclusive school

Remember there are so many other concepts that have not been asked. So make a thorough reading and master your content.



## Unit 5

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# TYPES OF IMPAIRMENTS- HEARING IMPAIRMENT

### Introduction

Welcome to unit 2 of this module. This unit discusses the types of impairments. It will discuss the hearing impairment, its definition, the types, causes; signs and interventions teachers can use to help victims learn better.

Upon completion of this unit you should be able to:



#### Outcomes

- *Define* Hearing impairment.
- *State* The signs for learners with hearing impairments.
- *Describe* The causes of hearing loss.
- *Discuss* The types of hearing loss.
- *Suggest* Intervention measures for hearing impaired learners.
- *Measure* Hearing loss.

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## HEARING LOSS/IMPAIRMENT



### Reflective activities!

Take one of fingers and close one ear tightly, write your observations;

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.....  
.....

Close both ears tightly with two fingers. Write your observations.

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.....

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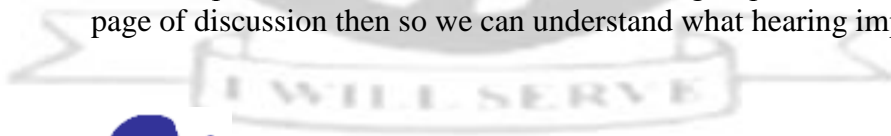
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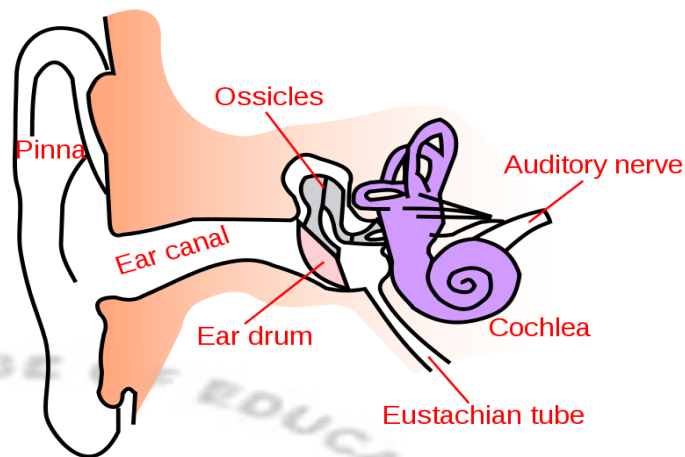
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Just have a reflection of your biology and refresh on the structure of the ear below so that when we talk about the parts affected, we are well aware about them. See the diagram and make comparisons with your own ear.



**Reading to understand!**

## **WHAT IS HEARING IMPAIRMENT?**

Hearing loss can be defined in terms of the degree of loss, the age at which the loss occurs and the type of loss.

This is that complete or partial loss of the ability of the ear to perceive sound. Hearing loss is manifested in two ways; either one is completely deaf or has some residual hearing. The word deaf means a profound or complete inability to hear. Hard of hearing refers to partial hearing loss. The complete inability to hear sound is called **deafness**. Deafness may be **pre-linguistic** or **post linguistic**, pre-linguistic if one became deaf before acquiring speech and range language- it is genetic, post linguistic if one becomes deaf after acquiring speech or language.

## **TYPES of HEARING LOSS**

There are two main types of hearing loss, conductive and sensori neural hearing loss, thus according to Kirk 1993.

### **CONDUCTIVE HEARING LOSS**

The conductive hearing loss occurs where there is some obstruction, infection or other interference with the physical transmission of sound waves through the outer and middle ear. See Donald etal (1997-258).

Some possible causes of conductive hearing loss:

- Fluid in the middle ear from colds
- Ear infection (otitis media)
- Allergies (serous otitis media)
- Poor Eustachian tube function
- Perforated eardrum
- Middle ear tumours
- Impacted earwax (cerumen- ear wax)
- Infection in the ear canal (external otitis)
- Presence of a foreign body
- Absence or malformation of the outer ear, ear canal, or middle ear

**Note!**

**Conductive hearing loss occurs when sound is not conducted efficiently through the outer ear canal to the eardrum and the tiny bones (ossicles) of the middle ear. Conductive hearing loss usually involves a reduction in sound level or the ability to hear faint sounds. This type of hearing loss can often be corrected medically or surgically.**

### **SENSORI NEURAL HEARING LOSS**

Sensori neural hearing loss occurs where the neural mechanisms of hearing (particularly the cochlea- where sound waves are translated into neural messages and the neural pass-ways of the brain) have not developed adequately or have become damaged. This often results in severe hearing disability.

The root cause lies in the vestibulocochlear nerve (Cranial nerve VIII), the inner ear, or central processing centers of the brain. Sensorineural hearing loss can be mild, moderate, or severe, including total deafness.

The great majority of human sensorineural hearing loss is caused by abnormalities in the hair cells of the organ of Corti in the cochlea. Most sensory hearing loss is due to poor hair cell function. The hair cells may be abnormal at birth, or damaged during the lifetime of an individual. There are both external causes of damage, like noise trauma and infection, and intrinsic abnormalities, like deafness genes.

Sensory hearing loss that results from abnormalities of the central auditory system in the brain is called **central** hearing impairment. Since the auditory pathways cross back and forth on both sides of the brain, deafness from a central cause is unusual.

This type of hearing loss can also be caused by prolonged exposure to very loud noise, for example, by wearing headphones on full blast for a few hours.

## THE GENERAL PERSPECTIVE OF THE CAUSES OF HEARING LOSS

In general terms therefore, the causes of hearing loss are;

- **OTITIS MEDIA;** A common ear problem among children is a condition called Otitis Media, very detrimental to learning. Otitis media is the inflammation of the middle ear accompanied by fluid medial to the eardrum. The cause may be infection, allergies, or inflamed adenoids or tonsils. Otitis media may cause mild and hearing loss that interferes with language development and the acquisition of good auditory perception and can lead to learning disabilities.
- Illness or infection of mother during pregnancy, Diseases like rubella (Germany measles) causes hearing loss, blindness and retardation. Infections in the mother's womb that affect the baby's hearing include meningitis and syphilis
- Noise pollutions particularly loud and persistent
- Lack of oxygen (Asphyxia)
- Damage to sensori neural hairs
- Wax accumulation in the ear
- Drugs such as quinine
- Congenital causes such as Down syndrome ( a genetic disorder related with mental retardation) . These children have narrow canal and are prone to middle ear infections which cause hearing loss.
- Children with cleft palates (an opening in the lips and aboral ridge) have middle ear infections.



### ACTIVITY

Write other causes of hearing loss

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## MEASURING HEARING LOSS

**It is important that we measure the hearing of learners so that we know precisely where to place them in the classroom. You should realise that everyone loses the sense of hearing as we age and wax accumulates in our ears. This is why it is important to be going for ear cleaning at the hospital.**

Hearing loss is mostly measured using pure tone audio meter, an electronic device which produces pure tones near the outer ear and the subject states whether he or she hears the sound at a certain intensity and frequency.

In conducting tests of auditory disorders, intensity and frequency of sound must be considered. Intensity refers to the loudness of the sound and is measured in decibels (dB). The louder the sound, the higher the decibel measure. Frequency refers to the pitch or vibrations of a given sound wave and is measured in cycles per second. A person may have a hearing loss at one frequency but be able to hear at another. Consonants such as 's', 'sh' and 'z' are high frequency sounds while vowels such as 'o' and 'u' are low frequency. Hearing is the intensity level in decibels at which a person begins to detect sounds in various frequency levels. Children are screened in an acoustic room- a place where sound distracters cannot enter. When screening children, the audiometer is set at an intensity of 15 to 20 dB. A 26 dB loss is within the normal range. Loss between 27 to 70 shows moderate hearing-i.e. hard of hearing and above 71 is deafness.





## ACTIVITY

Find a Pure-tone Audiometer and assess the hearing of pupils in your class. Describe the process of measuring for hearing loss using a pure tone audiometer.....

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## IDENTIFYING HEARING LOSS

### SIGNS FOR HEARING LOSS

Signs for hearing loss are divided into physical and behavioral signs. Physical signs are those we can see physically present or missing while behavioral are seen from the way we behave.

#### PHYSICAL SIGNS

Physical signs for hearing loss include the following;

- Draining ears e.g. pus coming out through the ear
- Earache often reported
- Reports of ringing and buzzing in the ears
- Mouth breathing
- Dizziness
- Sore throats, many colds, tonsillitis
- Absence of an ear pinner
- Size and shape of the ear pinna (smaller ear pinnas do not capture enough sound and bigger ear pinna also allow too much sound disturbing the meaningful sound expected).

Write other physical signs for hearing loss below;

.....

.....

.....

## BEHAVIOURAL SIGNS

Behavioural signs for hearing loss include the following;

- poor articulation of sounds
- Confusion of similar sounding words
- extreme watchfulness when persons are speaking in an attempt to lip-read
- frequent requests for repetitions
- speaking very quietly, inattentive in class
- speaking in a monotone
- showing strain in trying to hear
- talking too loudly or too softly
- turning one side of the ear towards the speaker
- responding slowly to instructions, watching over children for cues
- often giving inappropriate answers to questions



Write other behavioural signs for hearing loss that you know;

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.....

.....

## INTERVENTIONS

Hearing is one of the very important senses that makes life and learning easy. Without this sense, we cannot experience the world fully. Measures should be taken to help learners with hearing impairments to compensate for their loss and benefit from the teaching in school. This requires a concerted effort by education authorities and teachers.

The following are some of the ways in which we can help learners with hearing impairments;

- In classroom situation as in the case of hard of hearing, place the learners in front and without hearing range.
- Encourage lip reading. Learners with hearing impairments usually look at the teacher's lips closely when the teacher is speaking in order to lip read. Thus encourage this.
- Speak louder. As a teacher, ensure that your voice projection is louder to accommodate for the hard of hearing. The articulation of words should be as clear as possible so as not to confuse the learner's attempt to lip read.
- Use signs and sign language when teaching. Total communication is essential in teaching learners with hearing impairments.
- Use teaching and learning aids that are visual more so than such learners learn more by using their sight. Thus the use of charts, drawings, labels are essential to teaching and learning.
- Provide hearing aids. These amplify sound in the ears and learners with hearing impairments can easily get sound.
- Teach in environments where there are no distracters
- Use multimedia teaching strategies where video that are in sign language are used in teaching. Learners with hearing impairments learn better by seeing. Written text with sign language readers can be given to such learners to learn from both text and watching the interpretation signed.
- Use sound absorbers to absorb noise distracters.
- Teachers can as well teach with sign language interpreters as assistant teachers
- Refer such learners for medical examinations and possible cochlea implantation. Cochlea implantations in western world have proven effective in reducing the numbers of children with hearing impairments.

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## Unit summary



### Summary

In this unit you learned that hearing loss is of two main categories as conductive and sensori neural. We learned about the causes of hearing loss as environmentally and genetically caused. We also learned how to identify and measure hearing loss in learners. The main measure for hearing loss is the pure tone audiometer. We suggested measures to help learners with hearing loss learn effectively.

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## Assignment



Discuss the extent to which hearing loss affects learning. How can a teacher help learners learn effectively in an inclusive classroom?

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## Assessment



1. Hearing loss that involves blockage or obstruction of the auditory canal is called?.....
2. Post linguistic deafness is.....  
.....  
.....
3. Learners whose hearing loss occurred before acquiring language are said to be .....deaf.
4. The absence of a pinna is an example of a.....sign.
5. One of the causes of hearing loss that is characterized by the inflammation of the middle ear accompanied by fluid medial to the eardrum is called.....
6. The intensity of sound is measured in units called.....
7. Learners who have partial hearing are normally referred to as...  
.....
8. Measurement for hearing loss is better conducted in a room without distracters in order to ensure good results of the test. We call such a room .....
9. What do we call the electronic device used to measure hearing loss.....
10. Damage to the cochlea or the sensory hairs may bring about.....hearing loss.
11. Two factors necessary to consider when testing for hearing loss are.....and .....

### ***SELF REFLECT!***

When the above questions are answered correctly, you are at least rest assured of having understood the unit of hearing impairments.

### **EXPECTED ANSWERS!**

1. Conductive hearing loss
2. Hearing loss that occurs after language acquisition. Such deaf people can articulate speech.
3. Pre linguistic deaf
4. Physical sign for hearing loss
5. Otitis media

6. Decibels
7. Hard of hearing
8. Acoustic room
9. Pure tone audiometer
10. Sensorineural hearing loss
11. Intensity and frequency of sound



# Unit 6

## VISUAL IMPAIRMENT

### Introduction

Welcome to unit 3. This unit looks at visual impairments. This is another impairment that has to do with the senses. We can also call it a sensory impairment.

Upon completion of this unit you should be able to:



#### Outcomes

- *Define Visual Impairment.*
- *State* The causes of visual impairments.
- *Categorise* The types of visual loss.
- *State* The signs of visual loss.
- *Measure* Visual Loss.
- *Suggest* Intervention measures for learners with visual impairments. .



#### Terminology

**Acuity:** [ the ability to hear, see or think accurately and clearly]

**Ophthalmologist:** Visual specialist who examines visual acuity

**imbalance:** Lack of proper coordination

**Fusion:** [ when two or more things join or are combined ]

**Converge:** Meet at a common position

**Diverge:** to follow a different direction, or to be or become different

**Refraction** Of light or sound, etc., it causes it to change direction or to separate when it travels through it

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## VISUAL IMPAIRMENT

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### What is visual loss/impairment?



#### Reflective activities!

1. Close your eyes tightly; do you see anything around you? .....
2. What would be your description of a life without sight?.....  
.....  
.....  
.....
3. Given chance to choose between blindness and deafness, which one would you choose? What are the reasons for your answer?  
.....  
.....  
.....

Now that we had no chance of choice whether to be blind or deaf, we all had a probability of being blind or deaf before we were born. However, you perhaps were lucky, but who knows whether being blind or deaf is good or bad. There seem to be disadvantages to everything in life. Nevertheless, everyone would want to see what is happening around them. The Blind have their own way of seeing as well. They describe the beauty of a woman, an environment etc.

We definitely agree that without the sense of sight, we would lead life at half. But even at full because there are so many successful blind men and women out there. It depends on how we nurture them. It depends on how we avail opportunities to their success.

Sight is one of the very important human learning tools. It enables one to witness what goes on in the environment, one to master their environment, ingest it and manipulate it.





## Reading to understand!

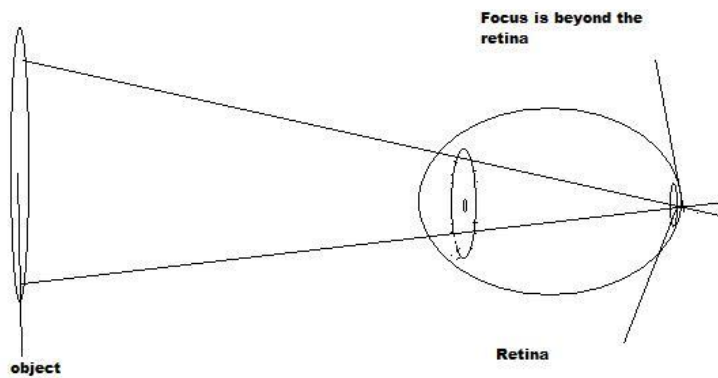
Visual loss is a type of sensory impairment where the sense of sight is affected in such a way that one is unable to see clearly or that one may not see at all. Thus there are people with visual loss that are partially sighted and others that are blind. The complete loss of the sense of sight or the ability to see is called blindness. (Muzata K. K 2011)

### TYPES AND CAUSES OF VISUAL LOSS/IMPAIRMENTS

#### Reflect!

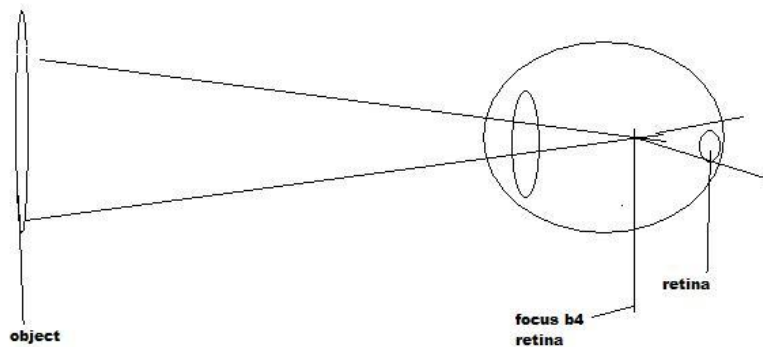
Have you heard of people who would say; “I saw you when you were that far and could not see you when you were near”? Take note, it may not be a joke; they may mean what they see. One short man got very annoyed when his friend told him that he could not see him from a distance until he was near. The short man thought his colleague was demining him due to his short height. But the colleague had just a different problem. Do not take lightly certain experiences, such as seeing objects afar than those near and vice versa. You might have a visual loss! Study the first two conditions below!

**Hyperopia** –This is a condition resulting from refractive errors due to defects in the lens. This condition is called farsightedness or long sightedness. The victim of this condition sees objects that are far away from him or her than those that are near. In this condition, light rays focussing on the retina diverge and converge beyond or behind the retina.



The condition can be corrected by wearing contact lenses that converge light rays on the retina. Thus convergence lenses help. Convergence lenses are also called **convex lenses**.

**Myopia-** This is also a refractive error resulting from defects in the lens. This is a condition where the victim only sees objects near him or her and not those that are far. The condition is also called short or near sightedness. This is a refractive error in which light rays converge before the retina.



The condition can be corrected by putting on contact lenses that diverge light rays to the retina. Thus divergence lenses are helpful in this condition. Divergence lenses are also called concave lenses.

**Have you experienced a condition where vision is not clear? How often do you poke your eyes in order to see clearly?**

**You could be astigmatic? Let's look at the condition of visual loss below.**

**Astigmatism** –Another condition of visual loss or impairment is astigmatism. **This** is an optical defect in which vision is blurred due to the inability of the optics of the eye to focus a point object into a sharp focused image on the retina. This may be due to an irregular or toric curvature of the cornea or lens. The symptoms are headaches, blurry vision, fatigue and squinting.

**Cause;** The refractive error of the astigmatic eye stems from a difference in degree of curvature refraction of the two different meridians (i.e., the eye has different focal points in different planes.) For example, the image may be clearly focused on the retina in the horizontal (sagittal) plane, but not in the vertical (tangential) plane. Astigmatism causes difficulties in seeing fine detail, and in some cases vertical lines (e.g., walls) may appear to the patient to be tilted.

**Correction;** The astigmatic optics of the human eye can often be corrected by **spectacles, hard contact lenses** or contact lenses that have a **compensating optic, cylindrical lens** (i.e. a lens that has different radii of curvature in different planes), or **refractive surgery**.

**NOTE! We can also say;**

**Astigmatism is a vision condition that causes blurred vision due either to the irregular shape of An irregular shaped cornea or lens prevents light from focusing properly on the retina, the light sensitive surface at the back of the eye. As a result, vision becomes blurred at any distance.**

Astigmatism is a very common vision condition. Most people have some degree of astigmatism. Slight amounts of astigmatism usually don't affect vision and don't require treatment. However, larger amounts cause distorted or blurred vision, eye discomfort and headaches.

Astigmatism frequently occurs with other vision conditions like nearsightedness (myopia) and farsightedness (hyperopia). Together these vision conditions are referred to as refractive errors because they affect how the eyes bend or "refract" light.

### **Binocular difficulties**

There may also be binocular difficulties in the children with reading problems. Binocular difficulties result from the two eyes not working together. There are three binocular difficulties:

- 1. Strabismus**

This is one of the visual impairments that results from lack of binocular co-ordination. The condition is also called crossed eyes or squinty eyes. There is an imbalance preventing the two eyes from focusing simultaneously on the same object.

- 2. Inadequate fusion**

This is the poor accommodation of focus of the eye to fuse two images.

- 3. Aniseikonia**

This is a condition of unequal size or shape ocular images in the two eyes. **Aniseikonia** is therefore an ocular condition where there is a significant difference in the [perceived size](#) of images. It can occur as an overall difference between the two eyes, or as a difference in a particular meridian. This is corrected by contact lens.

**There are times some people do not tell well the colors we all experience in our surroundings. The colors we see are not the colors they see. What makes the difference? Let's get onto another type of visual loss called color blindness.**

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# COLOR BLINDNESS

Color blindness or color vision deficiency is the inability to perceive differences between some of the colors that others can distinguish. It is most often of genetic nature, but may also occur because of eye, nerve, or brain damage, or exposure to certain chemicals.

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## Background

The average human retina contains two kinds of light cells: the rod cells (active in low light) and the cone cells (active in normal daylight). Normally, there are three kinds of cones, each containing a different pigment, which are activated when the pigments absorb light. The technical names for these receptors are S-cones, M-cones, and L-cones, but they are also often referred to as blue cones, green cones, and red cones, respectively. The absorption spectra of the cones differ; one is maximally sensitive to short wavelengths, one to medium wavelengths, and the third to long wavelengths, with their peak sensitivities in the blue, yellowish-green, and yellow regions of the spectrum, respectively. The absorption spectra of all three systems cover much of the visible spectrum.

Although these receptors are often referred to as "blue, green and red" receptors, this is not entirely accurate, especially as the "red" receptor actually has its peak sensitivity in the yellow region. The sensitivity of normal color vision actually depends on the overlap between the absorption spectra of the three systems: different colors are recognized when the different types of cone are stimulated to different degrees. Red light, for example, stimulates the long wavelength cones much more than either of the others, and reducing the wavelength causes the other two cone systems to be increasingly stimulated, causing a gradual change in hue.

Many of the genes involved in color vision are on the X chromosome, making color blindness more common in males than in females because males have only one X chromosome, while females have two.

## 4.

### **Glaucoma**

Glaucoma is an eye condition that develops when too much fluid pressure builds up inside of the eye. It tends to be inherited and may not show up until later in life.

The increased pressure, called intraocular pressure, can damage the optic nerve, which transmits images to the brain. If damage to the optic nerve from high eye pressure continues, glaucoma will cause loss of vision. Without treatment, glaucoma can cause total permanent blindness within a few years.

Because most people with glaucoma have no early symptoms or pain from this increased pressure, it is important to see your ophthalmologist regularly so that glaucoma can be diagnosed and treated before long-term visual loss occurs.

**Glaucoma** is a disease in which the optic nerve is damaged, leading to progressive, irreversible loss of vision. It is often, but not always, associated with increased pressure of the fluid in the eye.

The nerve damage involves loss of retinal ganglion cells in a characteristic pattern. There are many different sub-types of glaucoma but they can all be considered a type of optic neuropathy. Raised intraocular pressure is a significant risk factor for developing glaucoma (above 22 mmHg or 2.9 kPa). One person may develop nerve damage at a relatively low pressure, while another person may have high eye pressure for years and yet never develop damage. Untreated glaucoma leads to permanent damage of the optic nerve and resultant visual field loss, which can progress to blindness.

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### **Signs and symptoms**

There are two main types of glaucoma: **Open-angle glaucoma** and **Closed-angle glaucoma**.

## Open-angle Glaucoma

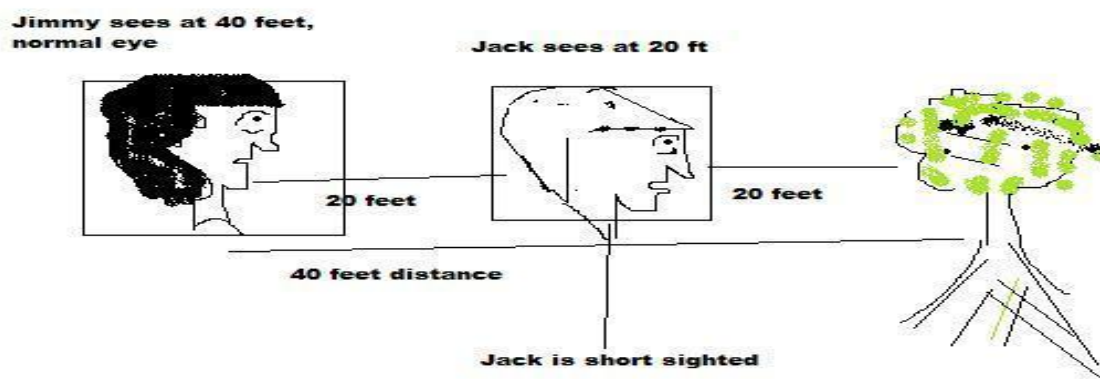
It is **painless** and does not have acute attacks. The only signs are gradually progressive visual field loss, and optic nerve changes.

## Closed-angle Glaucoma

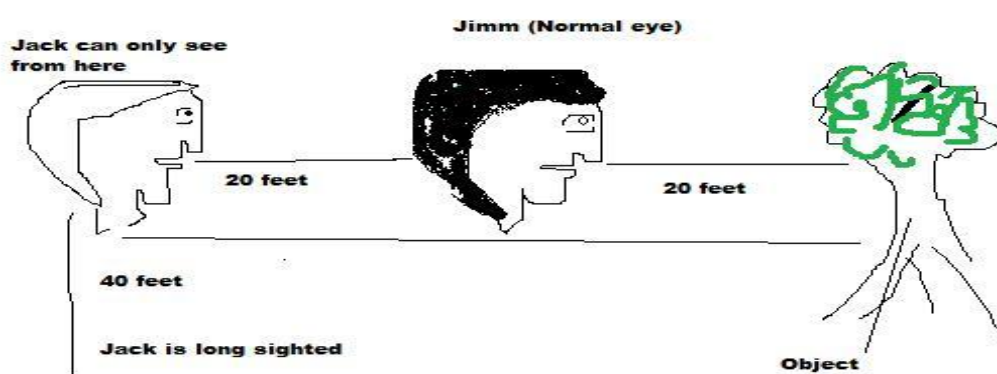
patients with closed angles present with acute angle closure crises characterized by **sudden ocular pain**, seeing halos around lights, red eye, very high intraocular pressure ( $>30$  mmHg), nausea and vomiting, sudden decreased vision, and a fixed, mid-dilated pupil. Acute angle closure is an ophthalmologic emergency.

## MEASURING VISUAL LOSS

An eye specialist (Ophthalmologist) will examine the visual acuity, refractive errors and binocular difficulties. Visual acuity refers to the ability to see forms or letters clearly from a certain distance. A snellen chart is used as a visual screening test in schools. The test is done at 20 feet from the chart i.e. the far point visual acuity. A score of 20/20 means that the subject sees at twenty feet what the normal eye sees at twenty feet. A score of 20/40 means that the individual sees at 20 feet what the normal eye sees at 40 feet. Thus the numerator is the subject and the denominator is the normal eye the victim is measured against.



The object is 40 feet away from Jimmy. Jack can only see it at 20 feet, i.e. half Jimmy! This means Jack has a visual loss of half Jimmy. This type of visual loss is called **short or near sightedness**. It is a refractive error caused by defect in the lens making focus possible for only items near. It can be corrected by putting on divergence lenses. These diverge the rays to longer distances as well. Remember when one is putting on the lenses, he or she is no longer disabled though the impairment is still on.



This situation is a direct opposite situation to the above. In this case Jack cannot see objects far away. If Jimmy (a normal sighted person) is able to see an object at 20 feet, Jack can only see that same object at 40 feet, it means Jack is long sighted. He cannot see objects near him. This is a refractive error in the lens where the lens cannot focus on near objects. It is correctable by using convergence lenses. Once the sight is corrected, there is no disability at all, though impairment lingers.

The Snellen chart also called the 'E' chart can be used to measure the sight of the children and the teacher will be in a position to place the learners either in front or behind.



**Note! In general terms, the causes for visual loss can summarised as below;**

- **Rubella**
- **Infections during pregnancy**
- **Injuries and poisonings (accidents)**
- **Retinoblastoma (tumour of the eye that causes blindness)**
- **Diseases (Glaucoma and cataract)**
- **Infections during pregnancy**
- **Injuries and poisonings (accidents)**

## **IDENTIFYING VISUAL LOSS IN LEARNERS**

There are a number of indicators that can tell whether your learner has a visual loss or not. Although we have looked at some signs for particular visual losses in some cases, generally the following signs show that one has a visual loss or is about to encounter it. There are physical and behavioral signs for visual loss just as there are for hearing impairments (remember!).

### **PHYSICAL SIGNS**

- red or watery eyes
- a pronounced squint
- irritation of the eyelids
- irregularities of the pupils
- obvious muscle imbalance such as crossed eyes
- cataract

### **BEHAVIORAL SIGNS**

- lack of attention to information presented visually
- holding reading materials very close to or far away from the eyes
- inability to see the chalkboard and other distant objects
- Pocking of the eyes due itching

## TEACHERS ROLE IN HELPING LEARNERS WITH VISUAL LOSS

- Bring closer short sighted learners to sit in front and long sighted learners far from the board.
- Use multisensory teaching strategies, use the sense of hearing, touch and taste. Let learners experience.
- Use of multimedia teaching strategies where brail material can read on computers and students listen
- Handouts should be available in **large print, audiotape, computer disk**, and/or **Braille** formats.
- If the student is partially sighted, be sure he/she is seated where lighting is appropriate.
- Provide means for the acquisition and/or recording of data in an appropriate mode for the student.
- When communicating with a student who has a vision impairment, always identify yourself and others who are present.
- Seat the student away from glaring lights (e.g. by the window) and preferably in front of the class.

Suggest other ways of helping and handling learners with visual impairments.

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## Unit summary



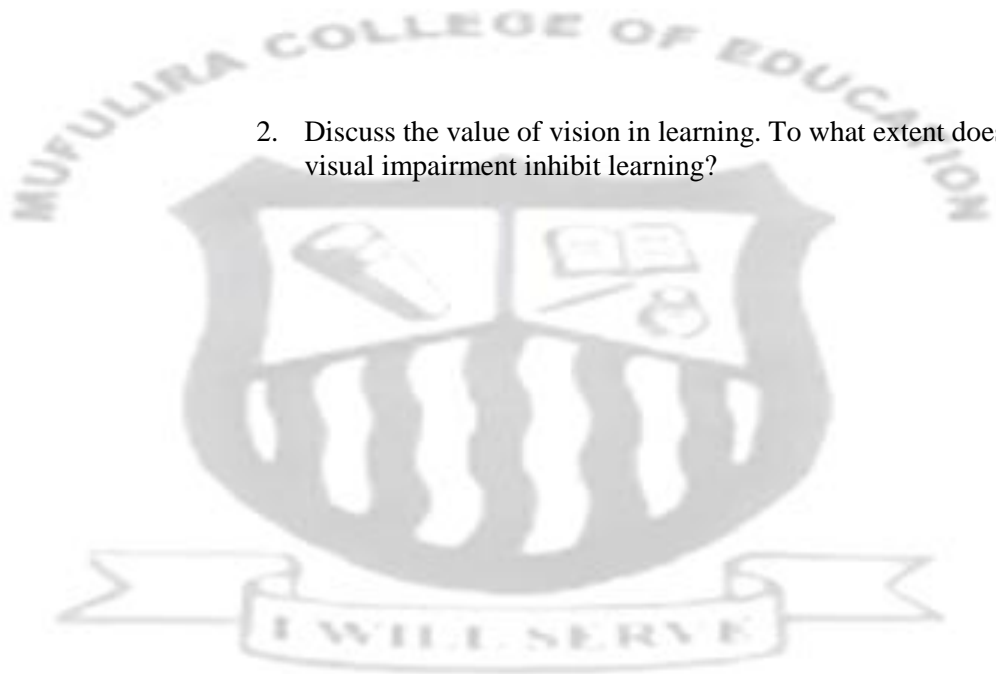
In this unit you learned about visual loss. WE guess you enjoyed the unit. The unit exposed us new interesting concepts about vision that definitely can help us understand ourselves and our learners. We learned that visual loss can be partial or complete depending on the degree of the loss. We learnt about myopic, hyperopic, astigmatism, Aniseikonia, color blindness, inadequate fusion and strabismus. Much as these types of visual loss are caused by different problems, common causes are either glaucoma, refractive errors in the eyes, binocular difficulties, diseases or genetics among other causes. Contact lenses and surgery helps to overcome the problems. We also learned about how to identify learners with visual loss using a Snellen Chart and suggested measures to help learners with such problems learn within the ordinary classroom. So help every child with visual problems. Do not wait until you have your own child, after all, the teacher's responsibility is that of a surrogate parent for all learners under his or her jurisdiction when at work.

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## Assignment



1. Find a Snellen chart and measure the visual acuity of your learners. Suggest ways of helping learners you will find to have difficulties with their vision.



2. Discuss the value of vision in learning. To what extent does visual impairment inhibit learning?

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## Assessment



Assess  
yourself!

1. State three features you would look for in learners whom you suspect to have visual loss;

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.....

2. State three common causes of visual loss;

.....

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.....

3. Briefly explain the following types of visual loss.

- a. Myopia
- b. Hyperopia
- c. Astigmatism
- d. Strabismus

4. Describe how you can measure for visual loss in your learners

5. What is the common for myopia, hyperopia and astigmatism?

.....

...

6. State three signs of glaucoma.....

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7. The grey matter that covers the eye to cause visual loss is called

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8. Provide five points of advice to a teacher on how to help learners with visual loss.....

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9. What is color blindness?

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.....  
10. Briefly explain the causes of color blindness.....

11. The standard chart comprising the letter 'E' used to measure visual loss is called.....

12. After measuring a learner for visual loss, you discovered that the learner's vision is 20/40. What is the interpretation of this result?  
.....  
.....  
.....

13. The ability of the eye to see objects from any given distance is called.....  
.....



### SELF CHECK!

Thank you for completing this unit. The revision you have instituted after studying the unit should be helpful to you and your learners. Knowledge of visual loss among learners can help us find ways of helping our learners. Did you find the following as options to the questions?

1. Hold reading material closer to the eyes, poking eyes,

2. Glaucoma, cataract, eye tumors, refractive lens errors etc see your notes above
3. Brief descriptions of concepts;
  - a. **Myopia** is a visual loss where the victim only sees objects that are near or in short distance. Objects that are far cannot be seen. This is because of errors in the lens that refracts light. In this case, the light focuses before the retina. Such learners need to sit in front. Divergent lens can help such learners see objects at any distance.
  - b. **Hyperopia** is the opposite of myopia. It is called farsightedness or long-sightedness. Individuals with this defect can only see objects that are far and not those that are near. It is caused by refractive errors in the lens making the image focus beyond the retina. Such learners need to sit at the back in class. Convergent lenses can help overcome this problem.
  - c. **Astigmatism**- this is a refractive condition characterized by blurred vision in an individual. Images usually become distorted and the victim experiences headaches and eye discomfort. It may occur with the two other refractive conditions (myopia and hyperopia) and lenses can correct the situation.
  - d. **Strabismus**- This is one of the visual impairments that results from lack of binocular co-ordination. The condition is also called crossed eyes or squinty eyes. There is an imbalance preventing the two eyes from focusing simultaneously on the same object.
4. Visual loss is best measured using an E Chart called the Snellen chart. The chart has a standard letter E at different sizes. The individual is positioned at a certain and asked if he or she is able to the letter. Sight of the letter at 20 feet if the normal eye sees at 20 feet is normal vision. If the normal eye sees at 40 feet what the subject see at 20, then the subject is short sighted. The opposite of this is the longsighted person.
5. They are all refractive errors/ they are a result of deformed lens
6. Headaches, sudden ocular pain and gradual progressive visual loss
7. Cataract
8. Depending on loss, shortsighted sit in front (see notes on interventions)
9. The eyes inability to different colors
10. Genetics, eye, brain or nerve damage, exposure to dangerous chemicals
11. Snellen chart
12. The learner is short sighted because he vision is half the normal eye
13. Visual acuity.

## MODULE SUMMARY

We hope you had an exciting journey through our module. For us, our role is simple, we would be glad to hear that you enjoyed our module and that you understood the content. Your evaluation will help us to even at better. So comment by ticking on the following aspects, send your comments to [muce48@yahoo.com](mailto:muce48@yahoo.com) or [cmufulira@yahoo.com](mailto:cmufulira@yahoo.com)

## MODULE CONTENT

- (Very clear/clear/not clear/not very clear). TICK
- (Very simplified/simplified/ not simplified/difficult)

## INTERACTION

- Very friendly module/ friendly module/ not friendly/

## ACTIVITIES

- Very appropriate/appropriate/not appropriate
- Easy to handle/ not easy to handle

## COURSE

- Very interesting/interesting/ not interesting/
- Looks very easy/ easy/ fair/ not easy

## ANY OTHER COMMENTS

- .....
- .....
- .....
- .....

**WE WISH YOU A GOOD STUDY PERIOD WITH US!**

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## INTERNET SOURCES

<http://www.apparelyzed.com/forums/index.php>

[http://en.wikipedia.org/wiki/File:Handicapped\\_Accessible\\_sign.svg](http://en.wikipedia.org/wiki/File:Handicapped_Accessible_sign.svg)

[http://en.wikipedia.org/wiki/Spastic\\_quadriplegia](http://en.wikipedia.org/wiki/Spastic_quadriplegia)

[http://en.wikipedia.org/wiki/Congenital\\_disorder](http://en.wikipedia.org/wiki/Congenital_disorder)

