FOUNDATIONS OF EDUCATION

FOR TTCs

STUDENT'S BOOK

YEAR ONE

Options: ECLPE, SME,SSE&LE

FOREWORD

Dear Student teacher,

Rwanda Education Board is honoured to present the Foundations of Education textbook for Year One for ECLPE, SME and LE options. It was designed based on the revised curriculum to support its implementation.

This textbook includes pedagogy and psychology related topics that will equip you with basic knowledge, skills and attitudes that you need to cater for learners of different ages and needs and effectively implement the Competence-Based curriculum in Pre-primary and Primary schools. The Foundations of Education textbook will help you to gain required competences to meet Teacher profession standards that are: teacher as educator, communicator and connector, guide, organizer and facilitator, innovator, researcher and reflective practitioner.

The textbook is made of 14 units designed in a way that facilitate self-study. Each unit starts with a key unit competence which represents abilities you are expecting to have by the end of the unit. This competence will be built progressively throughout the unit. The key unit competence is followed by an introductory activity that you are requested to attempt before any other contact with the content under the unit.

The unit is then broken down into different sub-topics to help you to go step by step. Each sub-topic starts with an activity in which you are requested to engage. The content that follows each sub-topic is a summary that gives you clear definitions of concepts, explanations to complement what you have acquired through learning activities. At the end of each unit, there are assessments tasks/activities that give you an opportunity to demonstrate the level of achievement of the key unit competence.

For effective use of this textbook, your role is to:

- Participate and take responsibility for your own learning: you are encouraged to engage in given activities to develop cooperation, communication, critical thinking, innovation and problem solving skills.
- Share with your classmates, relevant information through presentations, discussions, group work, videos, visits, lesson observation, field/ classroom visit, group discussions, brainstorming, role play, case studies, interpretation of illustrations, research etc.

- Conduct further research to enrich information provided under each topic.
- Draw conclusions based on the findings from the learning activities.

Enjoy learning *"The Foundations of Education year one"* using your book!

Dr. NDAYAMBAJE Irénée
Director General of Rwanda Education Board

ACKNOWLEDGEMENT

I wish to express my appreciation to all the people who played a major role in development of this Foundations of Education Learner's Book for TTC Year one. It would not have been successful without active participation of different education stakeholders.

I owe gratitude to university of Lay adventist of Kigali (UNILAK) and Teacher Training Colleges (TTCs) that allowed their staff to work with REB in the in-house textbooks production project. I wish to extend my sincere gratitude to lecturers, tutors and all other individuals whose efforts in one way or the other contributed to the success of writing of this textbook.

Special acknowledgement goes to the team of illustrators and designers who ensured all textbooks have required illustrations and are in- design with suitable layout.

I owe my sincere gratitude to different education partners more especially, Save the Children, Right to Play, Help A Child for their technical support during the development of this textbook.

Finally, my word of gratitude goes to the Rwanda Education Board staff particularly those from Curriculum, Teaching and Learning Resources Department who were involved in the whole process of in-house textbook writing.

MURUNGI Joan,

Head of Curriculum Teaching and Learning Resources Department/REB

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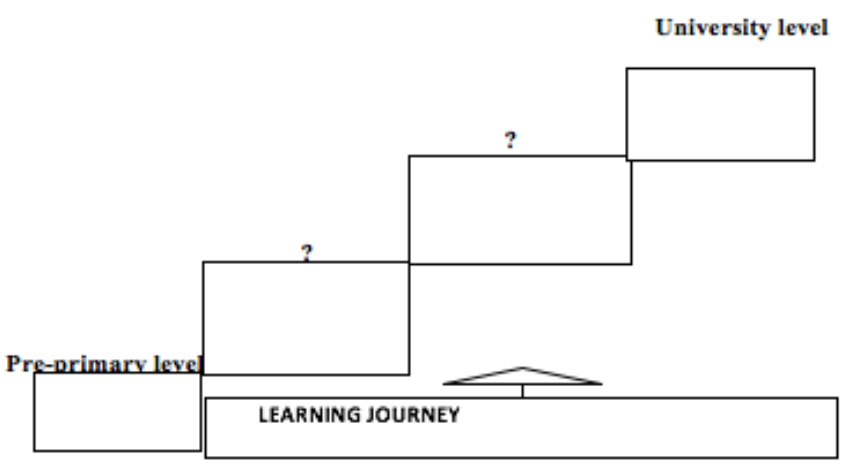
UNIT 1: GENERAL INTRODUCTION TO EDUCATION

Key unit competence: Analyse the components and linkages between elements of the national education system

Introductory Activity



Observe the above graphic and answer to the questions:

1. From pre-primary level you have gone through different levels in your learning journey. Name two remaining educational levels according to the above graphic.
2. In which class you had to sit for national exam?
3. Why do you think national exams are of vital importance for students?
4. How different are the knowledge and skills you have acquired in both primary and ordinary level?
5. Which lessons do you expect to learn in TTC and how do you think will the skills acquired prepare you to meet your future career?

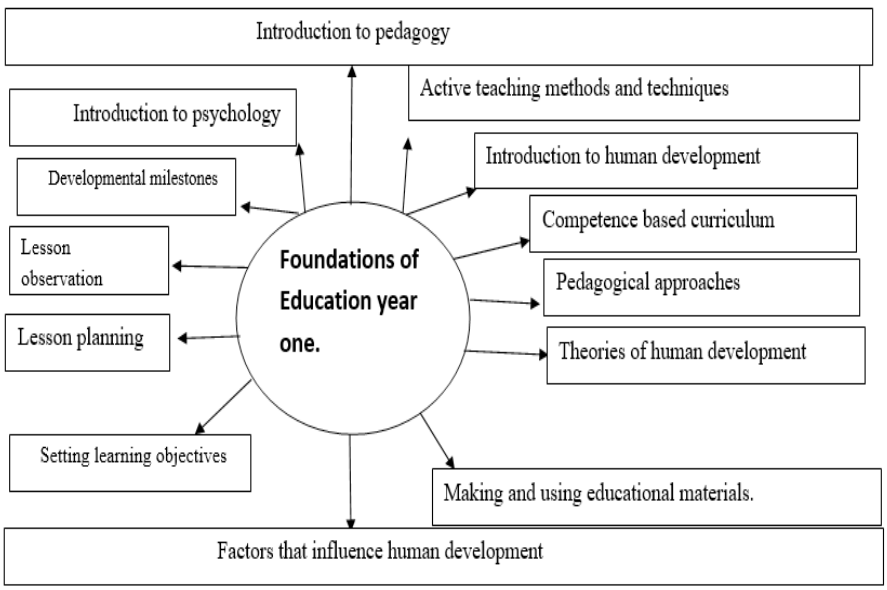
1.1. Introduction to Foundations of Education

Activity 1.1

1. Observe your weekly time table and identify how frequent the subject of foundation of education (FoE) is scheduled and periods lengths it is taught in comparison with other subjects. Has anybody ever told you something about foundations of education (FOE)?
2. What perceptions and expectations do you have about the course of FoE with regards to new knowledge, importance etc?

Foundations of Education (FoE) is a critical course for TTC student teachers in all options as it encompasses educational topics that equip student teachers with basic principles, theories required for knowledge transfer and progressive acquisition of professional competences. The course provides students teachers with knowledge, skills and attitudes that enable them to apply different theories, pedagogical approaches, teaching methods and techniques taking into consideration learner's ages and needs in different learning environment or contexts.

In Year one, student teachers will be equipped with competences about the elements indicated in the following chart:



Application activity 1.1

Write a friendly letter to your colleague from the ordinary level to share your perception about Foundations of Education subject. Please highlight knowledge and skills you expect to gain in this subject by the end of Year one.

1.2. Key concepts in education

Activity 1.2

1. Read the following paragraph and write down the terms that have relationship with education!

   The government of Rwanda is interested in competence based teaching. This philosophy of education will help all educational institutions to produce competent learners. However, this will be achieved if only curriculum, instructions, didactic aids and other academic related activities are reviewed and adjusted in competence based approach perspective. You are all called to show positive attitudes toward this new philosophy being either in general education, vocational training or professional education. We start with a Competence Based curriculum, we go through with Competences and we end up with Competent People!!!

2. Write other terms you think can be related to education.

Education

According to Oxford University Press, East Africa (2011), the term 'education' in its literal meaning is derived from two Latin words: 'educare' which means to rear, to bring up or to nourish a child. 'educere' which means to bring forth, to lead, to draw out or to train. Therefore, to educate a child would mean drawing or leading out what is in the child, i.e. facilitating the realization and development of the child's potential and talents.

According to Plato, education is the process of guiding people toward the truth.

J.J. Rousseau defines education as the process of helping learners to learn according to knowledge, skills and attitudes which result into changing the behavior.

DURKHEIM (1968, 41) defines education in its totality saying that it is: the action exercised by the adult generations on those who are not yet mature for the social life.

Therefore, education is a process of transmitting or teaching knowledge, values, skills, competences and correct social behaviours, to prepare someone for life and for social, political, economic participation, for a better society where there is happiness and satisfaction of its members, due to the activities of educated people. This process may be carried out by adults, schools, colleges, universities, churches or special institution or person.

Learning: It refers to the process of acquiring knowledge, skills or attitudes through study, experience or teaching. Learning is a lifelong process that leads to long-term changes in behavioural potentials.

Teaching: It is the activity of educating or instructing; activity of imparting knowledge or skills. It is the act, practice, occupation or profession of a teacher.

Instruction: It is defined as transmission of knowledge judged necessary to a child (learner)

Schooling: It is the action of undertaking educational programs in an institution such as a school for the purpose of acquiring knowledge, skills, attitudes and values.

School: An institution where instruction is given.

Academics: Areas of study that are required by formal education to conform to a set of standards, often without a direct application.

Vocational Training: Practical instruction which prepares an individual to take up a specific occupation.

Didactics: This refers to the science of teaching. Didactics comes from the Greek word" *didactikos*" which means to "teach" which is similar to "instruct"

Curriculum: A curriculum is a broad concept which includes all planned activities and subjects which takes place during the normal school day. It also includes after school planned co-curricular activities such as sport, clubs and drama. These takes place within a specific system and aim to lead and assist student so that they can be useful citizens within the community (REB the teacher training colleges competence based curriculum orientation manual, 2019).

Pedagogy: This is the art or a science of helping a child learn. Initially, a pedagogue was the slave in charge of taking the child to everywhere especially to school.

Progressively, pedagogue came to lose its etymological meaning of accompanying a person and by extension, a pedagogue appeared later (dates 1485 and was mostly used in 19th century) to become synonymous of master, teacher or tutor.

According to DURKHEM (1911): Pedagogy is the practical theory of Education.

Pedagogy is a discipline whose concern is the education of a child. It implies the science of the child, the knowledge of educational techniques and the art to put them into practice.

Application activity 1.2

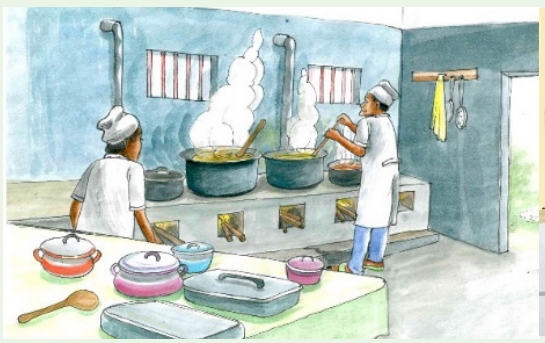
Match the term with its meaning. You only match letters and numbers

Education	The discipline whose concern is the education of a child. It implies the science of the child, the knowledge of educational techniques and the art to put them into practice.
Learning	It is defined as transmission of knowledge judged necessary to a child (learner)
Instruction	It refers to the process of acquiring knowledge, skills or attitudes through study, experience or teaching.
Didactics	This is a broad concept which includes all planned activities and subjects which takes place during the normal school day. It also includes after school planned co-curricular activities such as sport, clubs and drama.
Curriculum	Is a process of transmitting or teaching knowledge, values, skills, competences and correct social behaviours, to prepare someone for life and for social, political, economic participation, for a better society where there is happiness and satisfaction of its members, due to the activities of educated people.
Pedagogy	This refers to the science of teaching. Didactics comes from the Greek word" *didactikos*" which means to "teach" which is similar to "instruct"

1.3. Aims and purpose of education

Activity 1.3

Observe the picture below showing different people successfully working in different domains.



Answer to the following questions:

1. What kind of a job does each of the above pictures portray?
2. What is required for a person to perform the activities illustrated by the pictures?

3. What role does educational training play to enable a person having a job?

The purpose of education is defined differently in different societies and has continued to evolve and change throughout history. Broadly speaking, there are personal purposes for growth and self-improvement; political purposes for improved citizenship, social functioning; and economic purposes for having a skilled workforce.

Generally, the aims of education are:

- Bring people to their full potential;
- Develop intellectual basic skills such as reading and math, for a literate society;
- Improve social skills and sense of moral responsibility for a better society;
- Prepare people for success in life (socially and economically);
- Prepare people with skills to join the workforce and contribute to the economy;
- Develop skills and curiosity so that individuals can learn on their own;
- Promote the democratic process (sharing views, debating, making decisions, taking action to solve problems, evaluating progress made, etc.);

Rwandan Education Sector Objectives

The Education Sector objectives are the reference point by which educational issues are included into other Rwandan policy documents. These objectives are aligned with those recommended in the Eastern African Curriculum Framework proposals.

The Government of Rwanda through Law number 36/2018 of 29th June, 2018 determining the organization of education revised the objectives of the sector. They are to:

- Provide Rwandans with adequate skills at all levels of general education as well as technical and vocational skills;
- Offer quality courses and education at all levels;
- Promote science, technology and research in order to equip Rwandans with capacity to speed up national development;
- Promote the culture of peace, tolerance, justice, respect for human rights, solidarity, democracy and that of avoiding any form of discrimination or favouritism;

- Provide each Rwandan with an integrated education based on ethical values, science and social welfare and directed towards building a nation to ensure its sustainable development;
- Instil into Rwandans, the love of a job well done, the value of hard work, punctuality and promotion of competence;
- Train the Rwandan to have freedom of thought, be innovative, have abilities to acquire and be analytical towards other people's opinions and to communicate his or her own ideas, to be patriotic and encourage him or her to be updated on the situation prevailing elsewhere;
- Eliminate all grounds and obstacles that hinder the development of girls and women education as well as of any other groups that need special attention.

Application activity 1.3

Read the following general aim of education and write the Rwandan education aims that are linked to it.

General aim	Aims of Rwandan education
Prepare people with skills to join the workforce and contribute to the economy	

1.4. Forms of education

Activity 1.4

Observe the pictures below and answers to questions.

Question 1: Describe the context illustrated in each picture. Your description should focus on “what”, “who” and “where”.

Question 2: What is common to all the illustrated contexts?

Formal education

- Formal education corresponds to a systematic, organized education model, structured and administered according to a given set of laws and norms, presenting a rigid and prescribed curriculum in regards with objectives, content and methodology. It is classroom-based and provided by trained teachers. It leads to some form of certification at the end of a course or level.
- Formal education is important for standardization and ensuring learners achieve basic academic competencies.

Informal education

- Informal education does not correspond to an organized and systematic view of education. it happens outside the classroom, through community-based organizations, museums, libraries, mass media and at home. These are some examples of activities under informal education: visits to museums or to scientific exhibits; listening to radio broadcasting or watching TV programmes on educational or scientific themes; reading texts on sciences, education, technology in journals and magazines.
- Informal education is generally more flexible and individualized but also more short-term than formal education. There is no control over the performed activities; it does not necessarily provide degrees or diplomas; it supplements both formal and non-formal education.
- Informal education is important for developing life skills and talents.
- Some students feel intimidated by a formal educational environment yet thrive in a more relaxed informal educational environment.
- It supplements both formal and non-formal education.

Non-formal education

- Non-formal education is any organized learning activity outside the structure of formal educational system that is consciously aimed at meeting specific learning needs of particular groups of children, youths or adults in the community.
- It includes various kinds of educational activities such as skill training, health and family planning, sensitization in project creation and management.
- The defining characteristics of non-formal education are that it is an edition, alternative and/or a complement to formal education within the lifelong learning process.

- Examples of non-formal education: Capacity building sessions (training), Civic education training "*Itorero",* Community sports programs, adult literacy programs.

Application activity 1.4

Fill the following learning environments in the T-chart according to whether they are formal or informal education: *park, museum, computer lab, primary classroom, university, carpenter's workshop, science lab, home.*

Formal Education	Informal Education

1.5. Historical Developments in Rwanda's Education System

Activity 1.5

Bearing in mind the three historical eras (Pre-colonial, Colonial and Post-Colonial Periods) and their effect on the history of education, fill in the K&L of the following KWL chart and highlight what you know (*K*) and what you want to know (*W*) about the history of Rwandan education.

K	W	L

The historical development of education in Rwanda is linked with the political history of the country as the major changes in education were dictated by political changes. As Rwanda has wide history, it is important to take into account the three main periods such as pre-colonial, colonial and post-colonial period. These periods describe the development of education in Rwanda as discussed below.

1.5.1. Education before colonization

	
Young adolescent girls during *Urubohero* session	Young adolescent boys during *Itorero* Session

Before Adolescence, education in Rwanda was informal and delivered largely through the family. Non formal education was organised for adolescent. Young adolescents were trained through *Urubohero for girls* and *Itorero* for boys.

During *Urubohero* sessions, girls learnt households keeping and other skills that prepared them to be effective prospective wives. Among these skills, there is basket making and other handicrafts.

Boys were trained in *Itorero*. Courses they received included the military and war skills, iron smith and foundry, poetry…

1.5.2 Education during the colonial period

With the arrival of catholic missionaries in 1900, small schools were built nearby their churches. Rwandan children especially boys started to attend them though they were in small number. In these schools, they received rudimentary skills such as writing, reading and calculations with the purpose of enhancing evangelical mission.

Later with the arrival of Belgians, the educational system was strengthened. Churches were supported reinforcing their education.

Apart from primary schools, secondary ones were also created. The purpose of secondary education was to prepare carefully sons of chiefs (abatware) for colonial administrative activities. Therefore, prestigious schools such Astrida secondary school, were attended by these authorities 'children.

It is important to note that during this period, the curriculum that taught was based on Belgian curriculum and context.

The educational system left by Belgians was as follows:

- Primary: 6 years of primary education (1– 2 – 3 – 4 – 5 – 6)
- Post-primary: 2 years of vocational training (Enseignement artisanal et ménager)
- Secondary:
  - 4 years of teacher and professional education with one year preparatory (7– 1– 2 – 3 – 4);
  - 7 years of general education (7– 6 – 5 – 4 – 3 – 2 – 1)

1.5.3. Education under the first and second Republic

During the first Republic and second one, primary and secondary schools increased in number. The intention was schooling all children at the age of attending the school. With this regard, double shift was applied in primary schools to have a big number of children accessing primary education. In 1963, National University of Rwanda was created in Butare at Ruhande. According to educational law of 1966, schools were classified into two categories: public schools and private ones.

The structure of education system left by the second Republic 2nd Republic before the 1979/1980 reform was structured as follows:

- **Primary education:** 6 years including 3 years of lower primary and 3 years of upper primary.
- **Post- primary education:** 3 years (*CERAR -Centre d'Enseignement Rural et Artisanal au Rwanda-* for boys and *Section familiale* for girls*)* for vocational training (farming, construction, carpentry, culinary, …)
- **Secondary:**
  - 3 years for ordinary level (1– 2 – 3)
  - 2 years of short cycle of advanced level for technical and professional training after ordinary level (4– 5) with a D5 certificate at the end of the program. The leavers were not qualified for tertiary education.
  - 4 years of advanced level for technical and professional training after ordinary level (4 – 5 – 6– 7 with a D7 certificate at the end of the program. The leavers were qualified for further studies in tertiary education after some years of professional work.
  - 3 years of general education after ordinary level (4 – 5 – 6). The leavers were qualified for further studies in tertiary education immediately after Senior 6.
- **Tertiary education** was for 3 years and the leavers were qualified as 'Baccalauréat' holders (diploma holders).

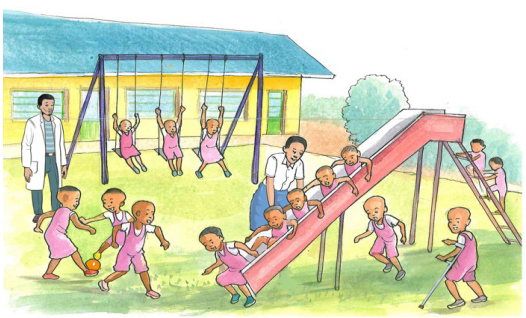
The 1978 education system reform introduced a new education structure of 8 years of primary education where the language of instruction was the mother tongue (Kinyarwanda) from Primary 1 up to Primary 8 and 6 years of secondary education where the language of instruction was French. There was no lower secondary, the choice of career path and specialization in various disciplines of study started immediately after primary education (starting from senior one).

The reform was made effective in the academic year 1979/1980. It continued up to 1991. The reform made the following structure of the education system:

- 8 years for primary education: 3 year of lower primary; 3 years of upper primary and 2 years for …… the language of instruction was Kinyarwanda.
- 3 years for post primary education (ERAI: Enseignement Rural Artisanal Integré)
- 6 years for secondary education (without ordinary level). The choice of career path and specialization in branches of study started immediately after primary education. The language of instruction was French.
- Tertiary education lasted between depending upon the faculties.

Though both 1st and 2nd Republics made a significant step in increasing the number of both primary and secondary schools and hence increased the number of children in these schools, education was ethnically and regionally discriminative. Girls were also few in the schools compared to boys.

1.5.4. Summary of changes of education system after the genocide against Tutsi



After 1994 genocide, schools were rehabilitated and new ones were constructed. The number of children attending the school has been far increased compared to those who attended before the genocide.

Different government policies have been implemented to ensure that there is a high literacy rate among the population.

To meet Universal Primary Education and Education for All, Rwanda has introduced a program of Nine and twelve Years Basic Education - 9 and 12 years basic education (9/12YBE), a program which required to building a significant number of schools as way of responding to the growing demand of enrolment. This education is against any discrimination be it ethnical, regional and gender-based.

Since 1994, the education system in Rwanda has undergone remarkable reforms. Progress has been made over two decades in the areas of education and skills development. However, barriers still remain especially in terms of the competences required for the labour market and for international competitiveness.

Such historical educational changes have dictated the change in curriculum as far as a high quality curriculum is regarded as the foundation of an effective education. Its adequacy, relevance and coherence have to be regularly updated to keep pace with the changing global situation and to address issues which conflict educational principles.

In line with efforts to improve the quality of the curriculum, Rwanda has been through different phases of significant change in recent decades as highlighted below:

- 1996: a major review restructured the education system to provide 6 years of primary, 3 years of lower secondary and 3 years of upper secondary schooling. The curriculum and syllabi were harmonised and elaborated and the language of instruction in lower primary became Kinyarwanda with French or English as the languages of learning from upper primary onwards.
- 2009: There have been mini-curriculum reviews in some learning areas and subjects to address the issues of relevance, adequacy and alignment to the teaching and learning processes. Compulsory and elective vocational subjects in lower and upper secondary were constituted to provide the learners with general knowledge and vocational competences.
- 2009: The language of instruction shifted from French into English from P4 onward for all subjects exclusive of Kinyarwanda. This reform was initiated to align Rwanda with regional English-speaking nations, strengthen Rwanda's relationship with the Commonwealth, and increase Rwanda's competitiveness in regional and global settings.
- 2009: The 9YBE program became the catalyst for the expansion of education from P1 to S3 using unconventional construction methods, teacher specialization, double shifting and reduction of subject areas.

- 2011: ECD Policy adopted and an attempt made to formalize the sub-sector.
- 2013: Teacher Training Colleges began offering an ECE option.
- 2014-2015: A major education reform was undertaken to move from knowledge-based to a Competence-Based Curriculum (CBC).
- 2016-2018: The roll-out of CBC happened in a three-year phased approach (2016-2018) starting with P1, P4, S1, S4.
- 2016-2019: UR-CE and REB revised the Teacher Training College curriculum to equip future teachers with knowledge, skills attitudes required to implement the CBC introduced in pre-primary and primary education.

Application activity 1.5

Complete the "L" column left from the KWL chart (Activity 1.5.) with everything you think you learnt

1.6. Current structure of Rwandan education system

Activity 1.6

n which classes should children and students of the following ages be: 3 years, 5 years, 8 years, 9 years, 11 years, 12 years, 14 years, 15 years, 18 years, 22 years.

Age	3 years	5 years	8 years	9 years	11 years	12 years	14 years	15 years	18 years	22 years
Class										

Formal education is typically divided into different levels with respect to age groups of students. Each level has its specific aim and certification which differs from another level. For example: pre-primary, primary, secondary, vocational, and tertiary (University or college education).

In Rwanda, the education system has the following structure:

Pre-primary Education

Pre-primary is organized in nursery schools for a period of three years for children of 3 to 6 years of age. It is established to prepare children to enter primary school. This education aims to encourage the socialisation of children and to stimulate their learning potentials by allowing them to engage and play with other children and to practice physical, rhythmic and manual activities. Initially pre-primary was not obligatory and was in the hands of parents and the private sector and the role of the government was to give limited support in terms of learning materials and provision of syllabus to follow. The policy now is to provide nursery education at village level and to encourage public private partnership at local level.

Primary Education

Primary education in Rwanda is free and compulsory for 6 years. The official school enrolment age at this level is from 6 or 7 years to 11 or 12 years. All children sit for national examinations at the end of primary 6 for selection into secondary education. The dramatic increase in enrolment has required a double shift system to be implemented in primary schools across the country.

Secondary Education

Secondary education in Rwanda is for 6 years, composed of 3 years of lower secondary or ordinary level (O- Level) and 3 years of upper secondary or advanced level (A-Level). The official school age for this level is from 13 years to 18 years although there are some children who start school early and join secondary by the age of 12. Lower secondary education is free and compulsory and the government, in partnership with the community, is building additional classrooms to increase access into upper secondary so that it also gradually becomes free and compulsory. All children sit for national examinations at the end of lower secondary for selection into upper secondary or technical and vocational education.

Tertiary education

This is formal education at college, or university level. It is also called higher education. All secondary school leavers sit for national examinations after which they may be selected for universities, professional and technical colleges or they may join the labour market.

Application activity 1.6

Choose one of the four levels of education and write a paragraph of 6 lines about it by showing that you find it the best for you!

END UNIT ASSESSMENT

Draw a framework chart showing the education progression from nursery up to university and show the links between educational levels. Remember to add a brief description under each level.

UNIT 2: INTRODUCTION TO PEDAGOGY

Key unit competence: Apply pedagogical concepts and principles in simulated classroom situations.

Introductory Activity

1. Choose the words which can have a close relationship with education.

   pedagogy, teaching methods, mechanics, dentist, instruction, cooperative learning, hair style, learner centred approach

2. Use internet and search the meaning of pedagogy and the meaning of the words you have chosen in previous question 1.
3. Compare and contrast the meaning of pedagogy with the meanings of the words you have chosen.

2.1. Didactic triangle concepts

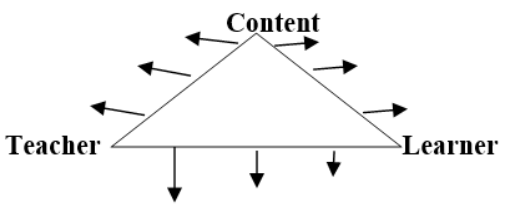
Activity 2.1

Observe the following triangle and write at least three action verbs that link:

a. Content and teacher

b. Content and learner

c. Teacher and learner



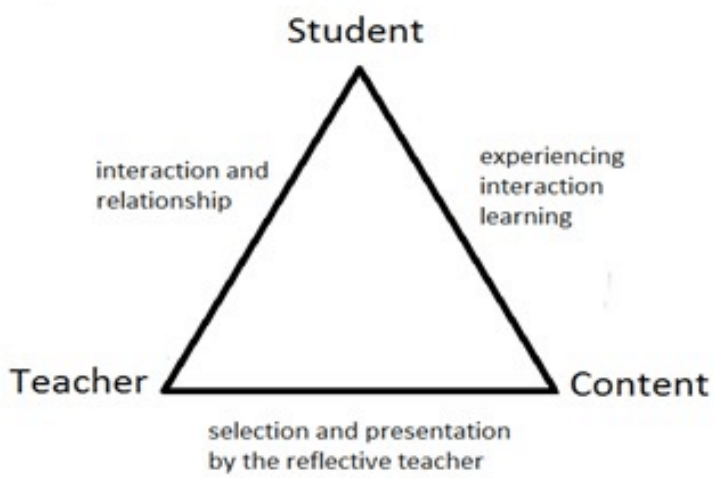
a. Didactics

According to **N. SILLAMY**, didactics comes from the Greek word “didactikos” which means “to teach”, which is similar to “to instruct”.

According to Jean-François HALTE (1992), didactics is defined as “**a reflection on the content to be taught**”. It is also a reorganisation of knowledge for its transmission.

b. Didactic Triangle

According to HOUSSAYE (1996), the pedagogical situation can be defined as “a triangle composed of three elements such as knowledge, teacher and learners. Instruction takes place when there is an interaction between 3 elements: teacher, students, and content/knowledge. A model that explains these relationships is called the *didactic triangle*.



Teacher: WHO is delivering instruction/facilitating the learning

Student: WHO is receiving instruction/learning and ultimately should show evidence of learning

Content: WHAT is being taught (subject matter/curriculum)

Relationships between Teacher-Student-Content:

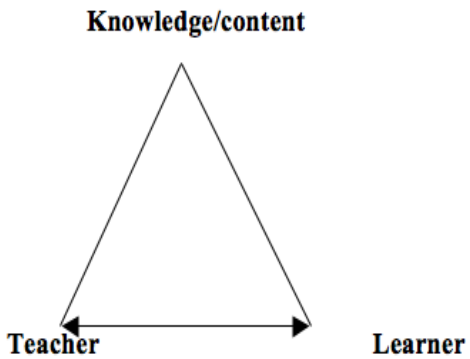
- **Teacher-Student (training process):** How does the teacher connect with students? What type of atmosphere does the teacher create? What approaches does the teacher use to engage students in the learning-process (pedagogy)? How does the teacher check for understanding (assessment)?

- **Teacher-Content (teaching process):** How well prepared is the teacher? What content-related resources are available and used (syllabus, articles, textbook, etc)? How clearly does the teacher explain key content (instruction)?
- **Student-Content (learning process)**: What background knowledge do students have? How are students interacting with the content? What tools are they given to read or learn from? How are students asked to show mastery and apply the content?

Pedagogical processes

The didactic triangle explained above generates three pedagogical processes:

Process “to Train”



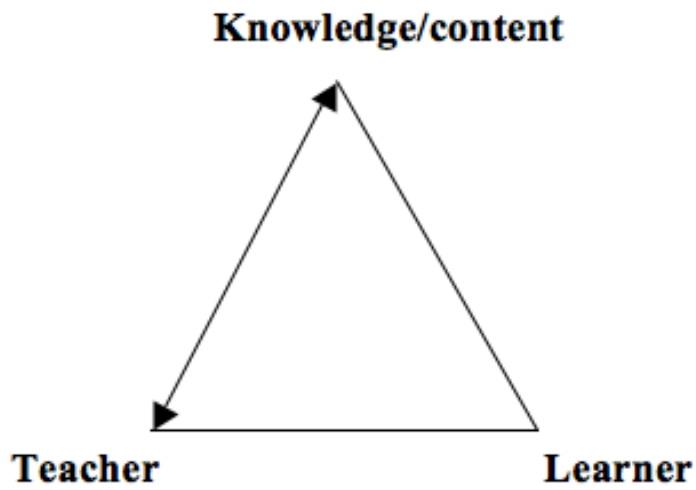
The process “to train” privileges the relation teacher - learners. This axis concerns the didactic contract, meaning that the relation that determines implicitly what every partner has the responsibility to manage and of which he will be responsible in front of the others.

It is a reciprocal waiting system that describes the teacher and learner’s expected behaviours about knowledge acquisition” (DE CORTE, 1996, pp.18-19).

The contract is not negotiated between two equal partners; it remains fundamentally dissymmetric. The educator occupies here an irreplaceable place, since he anticipates the right side of other.

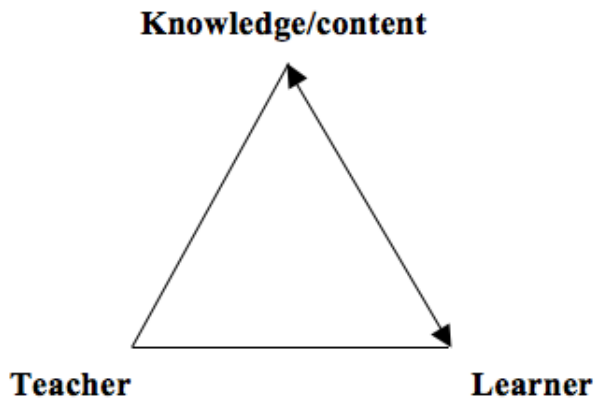
Thus among the two partners, the teacher is the sole to have a legal obligation towards the learner, but, he is also one who, implicitly or not, determines what will be the learner’s responsibilities. The class pedagogical environment (programs, methods, strategies, manual, learning activities, etc.) is determined by the teacher to maximise the learners/students learning process. But the learner does not participate in the decision.

- Process “to Teach”



The process “to teach “is founded on the privileged relation between the **teacher and the knowledge.** Generally, when the interaction knowledge - teacher is privileged, the teaching is teacher centered and the pedagogical model used is of the lecture type whereby the teacher must transmit the content.

- Process “to Learn”



The process “to learn” is founded on the privileged relation between the learner and the knowledge.

In this process, the teacher waits for learners to access the knowledge directly without his forced mediation. They can access knowledge which is immediately accessible to them without the teacher. The teacher is not absent as such but he plays another role, that of preparer, accompanist of the learning situation.

In this process, the teacher's role is to be a guide, a facilitator of learning. He/she uses discovery pedagogy that helps learners to discover and construct their own knowledge.

The three processes explained above are complementary as stipulated by HOUSSAYE et al. (2000. P.21) in the following words:

- If you teach, also think of "training" (be interested in learners and their life, ask them questions) and learning (give to learners some tasks, work for presentation).
- If you train, do something a little in "teaching" (even if you put aside knowledge, it is not indifferent that you continue to be perceived as a person who is supposed to know, a holder of a superior knowledge, capable of demonstrating it if needed) and in "learning" (it is necessary to bring learners to have knowledge through experimentation while feeling it).
- If students are learning, think of "teaching" (do not believe systematically in his documents, any learner comes to ask you explanation or additional information) and thinks of "training" (it is the moment of group dynamics and paying particular attention to the dependent learners and to those with difficulties).

The relationships between the three elements of the pedagogic triangles are governed by the didactic contract. **A didactic contract**, in the teaching learning context, refers to a relation that determines what each of the actors of the pedagogic relation-the teacher and student- has the responsibility to manage, and for which one will be responsible before the others.

c. Concept of didactic transposition

According to CHEVALLARD (1985), didactic transposition is the process by which scientific content becomes school content. It refers to the change from the exact knowledge as produced by researchers to a didactic version of this knowledge (VALLET (1991).

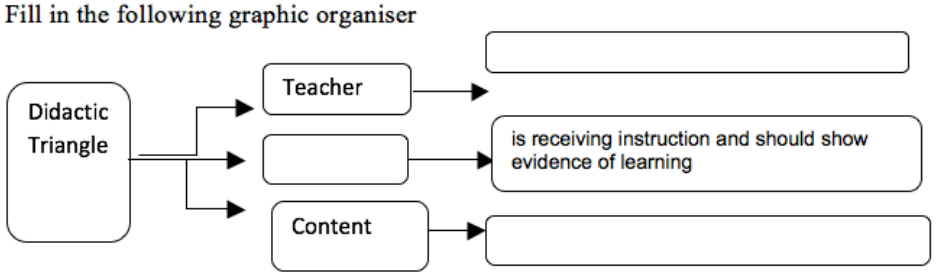
Basing on who is implicated in the didactic transposition and the moment it is made, there are two stages of didactic transposition:

- **External didactic transposition:** transforms the knowledge of subject specialists (academics, researchers, authors, innovators and other didacticians) into the knowledge to be taught. It leads to the definition of each subject contained in the curriculum. They define the programs and analyse the strategies to be used in the didactic situation. They choose content that should be taught. It is external because it is outside the classroom context.

– **Internal didactic transposition**: transforms this knowledge to be taught into content that has to be effectively taught. This transposition is carried out by every teacher in his or her classes to adapt the content to the learners taking into account their needs, interests, motivation and various constraints such as (time, examination, school regulation, etc.). It is during this stage that the teacher intervenes more.

Application activity 2.1

Fill in the following graphic organiser



2.2. Pedagogical principles

Activity 2.2

Think about the teacher you have most appreciated in your S3 class. Think about teaching and learning activities you were engaged in. Why do you think s/he was your best teacher?

Even if the terminology can vary from one author to another, most people use the following seven principles:

i) Motivation

Etymologically, the word "motivation" comes from the Latin word *motivus* which means "motive", "which makes something move". It is a "set of internal drives which lead someone to action"(GAGNE, 1969). It is "a set of desires which will push a person to achieve a task or to satisfy a need" (BERGERON, 1979).

Classically, according to MUCHIELLI (1998), motivation can mean any emotional tension: feeling, desire, aspiration, tendency, need etc. which is likely to start and support an action. Motivation instigates, activates, directs and channels the behaviour towards certain goals.

A goal is “motivating” when it is the source of dynamism in the person who perceives or conceives it. His/her dynamism is mobilised and their behaviour is organised.

“Any need tends to provoke the reactions which are likely to satisfy it; it is the need which mobilizes individuals, animals, people as a drive of their activities” This natural functioning of the human being, who produces behaviours when he/she feels an internal imbalance state, constitutes a precious support to the teacher, who is constantly exposed to the problem of motivating the students.

Motivated learners develop behaviour which pleases the teacher:

- Learners are interested in what has been taught
- They are constantly attentive
- They put more personnel efforts
- They do not get tired and they never get discouraged
- They are interested their progress and achievements
- They learn more quickly than other learners and understand better.

On the other hand, a learner who is negatively motivated will always seek - and find excuses to avoid or neglect his/her studies, with the same courage and the same zeal as the motivated student, but in the opposite way.

ii) Activity

Activity means that a person learns better if he/she is completely involved in an action. In active methods, the teacher creates a learning environment where the learners take part and communicate among themselves in the groups. The teacher avoids speeches. In active methods, the learners learn how to live together, how to behave, they take part and work together to achieve a common goal; the know-how is also acquired in active methods.

The purpose of active methods is to give to the learner more autonomy, more initiative, more personal motivation and to develop his/her creativity & innovation.

iii) Concretisation

Effective teaching always starts with something tangible, existing, concrete, that is, the teaching focuses on a real context. Reality gives meaning to the context and allows the learner to understand any context, referring it to a well-known and familiar context.

iv)Progression

This is a process of developing or moving gradually towards a more advanced state. Teaching and learning must be progressive. This is about psychological progression which takes into account child psychology, his/her level of mental development, his/her problems and psychological difficulties. It is therefore advisable to take into account psychological progression, not to follow mechanically the programmes established by adults (curriculum developed in centres). It is advisable to check if the content of the programme is adapted to the level of the learners. Teaching must take place gradually; the teacher must be ready to make revisions, readjustments, summaries, and repetitions.

v) Individualisation

Individualization refers to an instructional approach that allows the learner to learn on his/her own, at his/her pace and possibly using diversified ways. The teacher breakdowns the content into small, simple and understandable contents, to facilitate learner's learning.

vi) Cooperation

This is a principle of teaching which uses the teamwork; all the learners work together and take part in the implementation of classroom objectives. Cooperation is based on the following elements:

- Interdependence
- Sense of responsibility and loyalty to the group
- Cooperation skills
- Evaluation of the group work.

In a context of cooperation, a group is involved in carrying out a given task. The involvement of the group is vital, because all the members must learn, and they must teach each other. The group is organised in a way that everybody participates, collective success prevails over personal success.

vii) Transfer

Generally, in the psychology of learning, we talk about transfer when preliminary learning has an impact on the acquisition of new behaviour. According to LEGENDRE (1993, p. 1370), the transfer refers to the implementation of classroom "acquisitions" in a new situation to solve a problem. It is an "influence", an "impact" on the subsequent learning.

Application activity 2.2

Match the principles to their appropriate definitions in the table below:

1. **Activity**	a. The teaching must take place gradually, the teacher must be ready to make readjustments, revisions, summaries, repetitions, …
2. **Motivation**	b. It means that a person learns better if he/she is completely involved in an action.
3. **Concretisation**	c. Effective teaching always starts with something tangible, existing, concrete, that is, the teaching focuses on a real context.
4. **Co-operation**	d. This refers to an education system that allows the learner to learn on his/her own, at his/her pace and possibly using diversified ways.
5. **Progression**	e. This is method of teaching which uses the teamwork; all the learners work together and take part in the implementation of a classroom.
6. **Individualisation**	f. It is “a set of desires which will push a person to achieve a task or to satisfy a need”.
7. **Transfer**	g. It refers to the implementation of classroom “acquisitions” in a new situation. It is an “influence”, an “impact” on the subsequent learning.

2.3. General teaching methodology versus specific teaching methodology

Activity 2.3

Referring to the knowledge from TMP subject answer the question below:

1. What are the subjects/ learning areas you are required to teach at pre or primary school? (answer according to your option);
2. All those subjects and areas should not be taught the same way. Suggest the reasons!

General teaching methodology

General teaching methodology focuses on teaching in a general way. It includes what happens on everyday-bases inside classrooms, where questions related to the encounter of teachers, learners and the subjects are interconnected, and also to problems related to political and social relations where school is an intertwined part.

General teaching methodology:

- Deals with the general principles and standards to guide the teaching-learning process toward educational goals.
- Studies the elements common to education in any situation
- Provides descriptive models, explanations and interpretations applicable to general education, to any subject and in any stage or educational environment
- Analyse the main trends in education
- Applies to any individual no matter the area or subject.

Specific methodology

Specific methodology refers to particular instructional approaches appropriate for each subject as all subjects may not be taught in the same way. *Science* cannot be taught in the same way as *Geography*. As far as the subjects' nature differs from one another, they require specific teaching methods. Specific Subject Didactics/methodology refers to the "how" of teaching a specific subject.

A didactic situation

A didactic situation always includes a person who knows (usually a teacher) and a person who needs to know (usually a learner), that interact with one another to impart and acquire more knowledge and skills.

Components of a didactic situation

The teacher and the learner in the didactic situation

- The teacher unlocks reality and learning is spontaneous
- Learners emancipate, free themselves from control
- They orientate themselves to new learning environments
- The teacher guides learners into certain directions
- Learners make sound judgements, based on experiences
- Learners have opportunities to demonstrate their skills
- Learners learn to socialise and exchange ideas

Activity 2.3

Answer to the questions below by circling the letter that corresponds to the **correct answer**.

1. The teaching and learning of general didactics implies that the teacher will teach:

a. How to teach a specific subject.

b. Compiled themes that are applicable to all the study fields of teachers and teach them how to teach.

c. Students specific teaching skills on subject content

d. Students skills on how to select methods for one subject

2. Specific Subject Didactics means that:

a. There is a general and common approach of teaching all subjects

b. All subjects are of the same nature

c. There is a specific way of teaching a specific subject.

3. A didactic situation consists of interaction between:

a. The parent, teacher and principal

b. Usually an adult and a child,

c. The teacher, DOS and parent

d. A parent, family member and a grandparent

End unit assessment

1. Identity didactic principles recently applied by one of your tutors during any lesson. Explain.
2. Choose one principle and apply it through role play.

UNIT 3: PEDAGOGICAL APPROACHES

Key unit competence: Practice active pedagogical approaches in simulated classroom situations

Introductory Activity

Read the following scenario and answer to the questions

Divine, Carine, Shyaka and Teddy are learners at Kibingo Primary School. They study together with 40 classmates. The teacher has observed special interest to these three learners. Kevin wants always to work on tasks which require him to go outside the classroom "self- directed". He is very motivated when the task leads to a kind of discussion. If the question is open Divine shows interest to work collaboratively with others. Carine is quite different from Divine. Carine is active, adventurous and communicative. Her behaviours can actually be best observed when the teacher uses play while teaching. One day the teacher asked her "what do you like during class activity?" "Playing" loudly Carine replied quickly. Shyaka is the youngest in the class. He is failing to deal with primary concepts separately. Teacher shared Shyaka weakness with his colleagues and the nursery teacher testified that Shyaka was extremely good learner in pre-primary especially when he was given materials and allowed to learns on his own (free corner play).

Questions

1. As student teachers explain this case: They realized that Shyaka learns better when the main activities are put together and incorporated.
2. Suggest main ways which the teacher will use as he/she teaches:

a. Divine

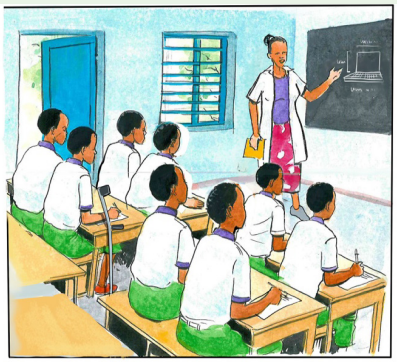
b. Carine

c. Teddy

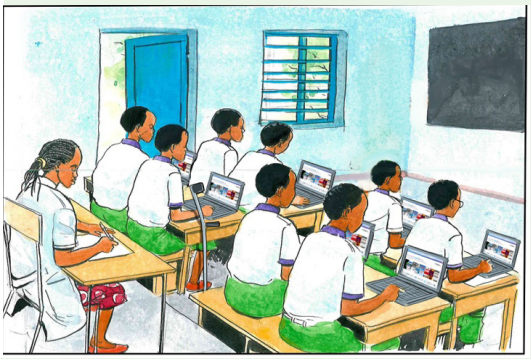
3.1. Teacher-centered vs learner-centered approach

Activity 3.1

1. Observe the following pictures and describe the context, based on learners and teacher's activities.



Picture A



Picture B

2. Read the following statements and match them with the above pictures A and B:
   - Learners are central of the learning process.
   - Students are provided with enough content to make them knowledgeable.

3.1.1. Teacher- centred pedagogy

Characteristics of teacher-centred approach

- Teacher is more active than learners and he/she determines what is to be learned, the methods to be adopted and the pace at which learning should take place.
- Learners are relegated to receiving knowledge from the teacher and only listen to, observe, make notes and occasionally answer a few questions (teachers act as a vital link between the learners and content).
- Incorporation of little instructional resources to the lesson(s).
- The teacher views learners as a homogenous group and not as individuals with diverse differences.

- Desks/tables and chairs are arranged in straight rows, with learners facing the writing board to get the teacher's presentation.
- Minimal or totally no encouragement of group work during the instructional process.

Advantages of teacher-centred approach

- Saves time, thus enabling the teacher to cover a substantial part of the syllabus.
- Requires few personnel thus cheaper economically as few teachers are used.
- Enables the teacher's work of maintaining class control, be easy as one is able to monitor what all the learners are doing.
- Creates uniformity in the information delivered as it is done by one person.
- Provides more accurate information as it is a product of careful research and wide reading by the teacher.

Situations which call for the use of this approach are;

- When the teacher has a lot of information to relay to the learners.
- When the information to be passed to the learners is of theoretical nature.
- Where there are inadequate instructional resources.
- When there is limited time to pass the information to the learners.
- Where there are large classes.

3.1.2. Learner-Centred Pedagogy

Learner centered Pedagogy has multiple names, appearances, and approaches that are affiliated with it, like inquiry-based education, constructivism or competence-based education (Vavrus, Thomas, & Bartlett, 2011). Once a certain education approach becomes an all-purpose word, it easily leads to a situation where one no longer sees the wood for the trees.

In order to prevent this and to clarify the meaning of LCP, it is helpful to view LCP as opposed to the more traditional, teacher-centred way of teaching. Some scholars, like Tabulawa (2013) and Barrett (2007) argue that the dichotomy learner-centred versus teacher-centred does not do justice to the reality. Instead of viewing learner and teacher centred education as two opposites, they prefer to see the transfer from one to the other as a more fundamental paradigm shift.

The table below shows the difference between teacher-led and learner-centred education. In a learner-centred classroom the learners co-influence the teaching and learning process, in contrast to a teacher-led classroom whereby the teacher is fully in charge of the content and the teaching and learning process. In a teacher-led classroom, it is only the teacher who has the authority to deliver knowledge, skills and attitudes as if the learners are empty vessels to be filled.

Teacher-led versus Learner-centered pedagogy

Teacher-led pedagogy	Learner-centred pedagoy
Teacher controls the content and teaching and learning process	Learners co-control the content and the learning process
Techniques are: 'chalk and talk', lecturing and whole class drilling(passivity)	Techniques involve collaborative interactions with the teacher and learners
Fixed curriculum	Room for individual interests, learning preferences, styles and needs
Teacher is the sole authority	Teacher is a facilitator of learning

In their book *Primary Teacher Education*, Agumba M.Ndolah, Bernard Misigo, Margaret Ongek, Emmy Kipsoi and Catherine Simiyu (2009) highlighted the advantages and disadvantages that distinguish learner -centred approach from teacher-centred approach.

Characteristics of learner-centred approach

The following are the characteristics of this approach

- Basing teaching on learner characteristics.
- Exposure of learners to real things (real life situations).
- Teachers' role is to provide an enabling atmosphere for active learner participation in the instructional process through offering guidance, being friendly and flexible to the learners.
- Dominance of the instructional process by the learner(s).
- Provision of group work to cater for individual differences and needs in the learner population. Learners are thus usually fewer in numbers than in the other strategy
- Incorporation of a wide range of instructional resources and other materials in the instructional process.

- Exhibition of leadership qualities in learners through taking initiative in various responsibilities e.g. distribution of materials, keeping class tidy, helping each other, etc.
- Establishment of several interesting learning areas e.g. class displays, projects, science or nature corner, shop (for lower primary) creativity corner, etc.
- Allowing for the free movement of learners in the classroom during the course of the lesson.

Advantages of learner-centred approach/pedagogy

The following are the advantages of LCA/P:

- Facilitates retention of the learned material
- Provides training on democratic principles and leadership responsibilities.
- Stimulates the learner's mental activity as it requires that one actively participate in the instructional process.
- Develops learners' communication skills thus, making them enjoy fluency in expression.
- Encourages creativity, originality, organization of material and discovery in the learners.
- Caters for the diverse interests and abilities of learners in a classroom situation.
- Makes the instructional process interesting, hence motivate learners in the lesson.
- Fosters a sense of responsibility in the learners.
- Encourages a learner to cooperate with others and appreciate working in groups i.e. develops learner's social skills Facilitates transfer and application of knowledge to new learning tasks.
- Enhances teacher-learner interaction as it allows for free exchange (sharing) of information.
- Develops critical thinking among learners.

Disadvantages of the learner-centred pedagogy/approach

- Demands a lot of time.
- Expensive in terms of resource requirements
- It requires a teacher to be patient and flexible in how he/she handles the learners, etc

Role of teachers in learner-centred classroom

- The teacher focuses on observation of evidence on what learners can do and then identifies any difficulties encountered by them so that appropriate strategies can be developed for those with special needs (slow learners, learners with disabilities, talented and gifted learners).
- The teacher should take into account different cross-cutting issues and integrate them in the learning activities where applicable.
- The teacher should encourage individual, peer and group evaluation of the work done in the classroom. They must also use appropriate competence-based assessment approaches and methods.
- The teacher is a facilitator and a guide in the learning process. She/she must provide supervised opportunities for learners to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication and cooperation.
- The teacher is an advisor and provides guidance and counselling for learners. She/he supports and comforts learners by valuing their contributions in the class activities
- The teacher acts as a parent and has to ensure discipline, follow up learners' behavior, and communicate with parents about the learners' performance at school.

Role of students in learner-centred classroom:

- Learners communicate and share relevant information with other learners through presentations, discussions, group work and other learner-centred activities (role play, case studies, project work, research and investigation)
- Learners are active participants and take some responsibility for their own learning
- Learners develop knowledge and skills in active ways
- Learners carry out research and investigation, consulting print and online documents and resourceful people and present their findings
- During the assigned tasks, learners ensure the effective contribution of each group member, through clear explanations and arguments, critical thinking, responsibility and confidence in public speaking.

In a learner-centred classroom, learners have ample opportunity to communicate and actively engage in learning activities, while in a teacher-led classroom learners mostly passively listen to the teacher. In learner-centred education the teacher gives room for learners to create and come up

with their own ideas and knowledge, hereby taking into account that learners learn differently and sometimes need specific individual support.

The choice for a learner-centred approach is ideally reflected on several levels; for instance, in the official national curriculum, the classroom activities and the individual interaction of teacher with the learners. Learner-centred pedagogy is an approach that gives room for individual interests, learning preferences, styles and needs. It is a pedagogy that incorporates collaborative and (inter) active teaching and learning activities that are clearly instructed and facilitated by the teacher, leading to a situation whereby learners co-influence the learning content and process. (*Learner Centred Pedagogy in Practice UR-CE and VVOB,2017)*

Application activity 3.1

Around each approach (learner centred and teacher centred approach), write different words (word cloud) which have close relationship with term "learner centred and teacher centred approach"

3.2. Problem-based Learning approach

Activity 3.2

1. Write the term "Problem-Based Learning" in a search engine (e.g. Google, Bing, Yahoo, etc.) and find different details explaining and/or providing examples about the concept. Write down a summary in your exercise book.
2. Read the following scenario and answer related questions

Scenario: Teacher Clement teaching the phenomenon of evaporation

Clement, a P4 Science teacher guided learners who exposed a vase containing a small amount of water under the sunlight. The whole class had time to observe the progressive decrease of water until the vase was empty.

He then asked learners to discuss in groups and explain the phenomenon: where is the water that was in the vase? He encouraged learners to give freely their explanations (assumptions). After discussions in groups, learners gave the following explanations:

- Perhaps water disappeared due to the sun (they don't use "evaporate")
- The water was overthrown by a child/someone
- The water disappeared as a result of the atmospheric air.

He accepted all explanations and proposed an experiment to validate or invalidate the above learner's assumptions. Learners observed the water level before boiling it in a covered saucepan. After boiling, they observed water vapour on the cover. They also observed that the water level decreased. To conclude he explained that under heat effect, water evaporates, but does not disappear; water vapours in the atmosphere remain suspended until they "condense" to become water.

Questions:

a. Identify key steps in the methodology used by Clement to explain the phenomenon of evaporation.

b. Can this method apply to other lessons (Maths, Social studies, …). Explain how.

3.2.1. Definition of Problem-Based approach

The problem-based approach is among the approaches of the "socio-constructivist" movement by which knowledge is built by mutual input (peer and teacher). This approach enables students to learn while engaging actively with meaningful problems. Students are given the opportunities to problem-solve in a collaborative setting, create mental models for learning, and form self-directed learning habits through practice and reflection.

Problem Based Learning (PBL) is a student-centred pedagogy in which students learn about a subject through experience of solving an open-ended problem. According to Barrows and Tamblyn (1980), PBL is defined as the learning that results from the process of working towards the understanding or resolution of a problem.

Based on the idea that "learning is change of perceptions", the purpose of problem-based approach is to engage the learner in a provocative context, forcing him/her to mobilize existing resources (knowledge, skills) to overcome the obstacle and reach a solution through various learning activities.

3.2.2. Characteristics of problem-based learning

The Problem Based Learning has the following main characteristics according to Barrows (1997):

- **Student-centred:** the students are motivated to be responsible on self-learning. The teacher will act as a facilitator and will help students to make a right decision.

- **Problem-based**: learners are provided with a problem situation that destabilizes the learner's perceptions, knowledge and skills
- **Problem solving**: a problem will be used to stimulate effective and efficient development and reasoning skills. At the early stage, there will be a modelling of problem-solving process and teachers will reduce their role when students start to communicate and make argument with themselves and peers about what they think.
- **Self-directed**: students can justify what they must learn and this is based on their task to solve the problem. Information needed to solve the problem they will go back to the problems and will apply a new knowledge that they gain through problem solving. The experience that they gain will be used to construct new knowledge.
- **Collaborative**: students will collaborate in the problem-solving process and will identify learning issues. The student collaboration will occur during self-directed learning when students form a group to solve the learning issue which has been identified.
- **Self-reflecting**: when the problem is solved, students will make a self-reflection to new information, compared with new problem, make a reflection to face the same problem (for the future), to abstract a concept or a principle.

What are the essential characteristics of a problem situation?

A problem situation should:

- Have sense: it concerns the learner, makes him/her feel attracted;
- Correspond to a learning objective;
- Be adapted to the learners (age, socio-cultural medium);
- Be related to a barrier that is sufficiently strong (effect of provocation) to call the learner for mobilization of his/her knowledge and perceptions. The obstacle appears to the learner as surmountable even if initially he/she has no resolution tools. It is the need to resolve the problem that leads to the development of instruments of resolution;
- Create ruptures with the original explanatory models if they are inappropriate or incorrect (creating a cognitive conflict or socio-cognitive). The real-situation problems allow learners to deconstruct the initial perceptions to reconstruct new knowledge;
- Raising questioning of learners;
- Correspond to a complex situation opening to different solutions;
- Lead to a general knowledge: notion, concept, law, rule, behaviour.

3.2.3. Importance of problem-based learning

- PBL helps students develop flexible knowledge, effective problem-solving skills, self-directed learning (SDL)
- PBL methodology promotes students' motivation and their research becomes more focused and meaningful.
- The students also become more involved in learning, creative and critical thinkers.
- PBL also helps to increase the consideration of interdisciplinary knowledge and skills.
- In addition, PBL has potential to increase the cognitive competitiveness of individuals by eliminating barriers that may inhibit work processes and encourages students to apply relevant and meaningful information to real-life situation.
- PBL has also been useful in developing management, collaboration and communication skills

3.2.4. Steps of problem-based lesson

a. Experimental-based lessons

In sciences the problem based learning follow the experimental learning steps summarised as follow: (Refer to the above scenario about the phenomenon of evaporation):

i. Presentation of the problem situation

ii. Reflections, comparison with perceptions of students (prior knowledge, beliefs ...)
   - The teacher collects the initial perceptions of students through group discussions.
   - The prior learning of students allows teachers to compare their answers with those he/she expects by leading learners to their discovery. The teacher should avoid giving the answers, but guide learners through their discussions until they discover the expected answers.

iii. Formulating assumptions by learners
   - An assumption is often defined as a possible answer to a problem, a potential explanatory model incorporated in an approach, a provisional solution to a problem, an idea to verify etc.
   - That is why we should encourage learners to make more than one assumption, and avoid absolute way (eg maybe, perhaps, possibly ...).

- The teacher accepts all the proposals as assumptions written in the books of "experiments" that will reflect all the discussions made in groups.

iv. Validation / invalidation of assumptions by experiments or other activities
   - The teacher or students propose the kind of experiment and the experimental protocol to be done to validate or invalidate the assumptions.

v. Generalization and Synthesis
   - The main role of the teacher is played at this level. He/she explains the new concepts and help learners to question their initial perceptions.

b. Non-experimental-based lessons

When the problem- based learning is used in non-sciences lessons such as in social studies, steps can be as follows:

- Definition or presentation of the problem (case study, scenario)
- Group discussions
- Presentation of findings
- Summary/conclusion

3.2.5. Limitations with Problem-Based Learning

The use of PBL in our classes is very beneficial, especially when you want to promote learner-centeredness, critical thinking and problem-solving skills.

However, it has some limitations while implementing:

- It is demanding in terms of time and means – takes time in planning and collecting adequate materials and obliges too many debates on the side of students to identify what they need to learn in order to develop a solution and where to look for appropriate learning resources to address the problem.
- May be difficult to implement in large classes.
- Requires huge science prerequisites.
- The fact that its process is wholly active makes it complicated to monitor and evaluate.

Application activity 3.2

1. What are the steps of experimental approach?
2. Create a problem situation related to sexuality education to use in a P6 Science and Elementary Technology lesson.
3. What do you personally appreciate in Problem based learning?

3.3 Play-based learning approach

Activity 3.3

Picture A **Picture B**

1. Observe the above pictures and describe the context in Picture A and B (where activities are being conducted? How is the learner's mood, etc.).
2. What learners gain in participating in activities illustrated in picture A and B in term of learning?
3. Give 2 examples of games/plays familiar to pupils in primary school and show they importance in their learning.

3.3.1. The meaning of play-based approach

It has been noted that most adults working in Early Years settings share the professional opinion that play is a key pedagogical medium for learning. As a result they are careful to provide their children with plenty of opportunities to explore the curriculum through collaborative and exploratory play.

Other research also highlighted that play is a powerful inner force through which a child reaches out to interact with his environment involving movement and different sensory modes. At early age, children who are prevented from having a wide range of sensory-motor experiences due to illness, overprotection, or other reasons are not likely to develop certain kinds of percepto-cognitive information.

Play is unstructured activity while **games** are activities with a minimal set of rules, equipment and coaching. Play can be regarded as medium of instruction for young children who have not yet developed fully the language skills. Children engage instinctively in play.

Play-based learning is an experiential, participatory and guided approach, which enhances the teaching and learning process through play. Children organize and make sense of their world as they actively engage with their peers and leaders in educational games and activities. Play-based learning motivates and stimulates children and supports them in the development and consolidation of skills and concepts, while helping to shape their positive attitude towards learning and life.

3.3.2. Fundamental principles of play-based learning

- **Play is recognized as a child's right, and it is essential to the child's optimal development:**
  - The United Nations Convention on the Rights of the Child recognizes "the right of the child … to engage in play … appropriate to the age of the child" and "to participate freely in cultural life and the arts".
  - Play is essential to the development of children's cognitive, physical, social, and emotional well-being. The Association for Childhood Education International (ACEI) recognizes play as necessary for all children and critical to children's optimal growth, learning, and development from infancy to adolescence.
  - Educators recognize the benefits of play for learning and engage in children's play with respect for the children's ideas and thoughtful attention to their choices.

- **All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience:**
  - In play-based learning, educators respect every child's views, ideas, and theories; imagination and creativity; and interests and experiences.

- The child is seen as an active collaborator and contributor in the process of learning. Together, educators and learners plan, negotiate, reflect on, and construct the learning experience.
- Educators respect the diversity of social, cultural, and linguistic backgrounds represented among the children in the classroom, and take each child's background and experiences into account when interpreting and responding to the child's ideas and choices in play.

- **A natural curiosity and a desire to explore, play, and inquire are the primary drivers of learning among young children:**
  - Play and inquiry engage, challenge, and energize learners, promoting an active, alert, and focused state of mind that is conducive to learning.
  - Children's choices in play are the best starting points for the co-construction of learning with the child.
  - Educators respond to, challenge, and extend children's learning in play and inquiry by: observing; listening; questioning; provoking; providing descriptive feedback; engaging in reciprocal communication and sustained conversations; providing explicit instruction at the moments and in the contexts when it is most likely to move a child or group of children forward in their learning.

- **The learning environment plays a key role in what and how a child learns**
  - A learning environment that is safe and welcoming supports children's well-being and ability to learn.
  - Both in the classroom and out of doors, the learning environment allows for the flexible and creative use of time, space, and materials in order to respond to children's interests and needs.
  - The learning environment is constructed collaboratively and through negotiation by children and educators, with contributions from family and community members.
  - A learning environment that inspires joy promotes learning.

- **In play-based learning programs, assessment supports the child's learning and autonomy as a learner**
  - In play-based learning, educators, children, and family members collaborate in on-going assessment to support children's learning and their cognitive, physical, social, and emotional development.
  - Assessment in play-based learning involves documenting and reflecting on what the child says, does, and represents in play and inquiry.

3.3.3 The benefits of play-based learning

Since the early 2000s, there has been a shift towards recommending the use of play-based learning in early education curricula. Play-based learning is, essentially, to learn while at play. Within studies that have examined the benefits of play based learning, two different types of play have been the primary focus: free play, which is directed by the children themselves and guided play, which is play that has some level of teacher guidance or involvement .

In and out of the school, play gives children opportunities to manipulate materials, count, measure, add, understand the world around them, express themselves freely, make a connection to personal experiences enhance their literacy skills, develop social skills." Piaget, J. (1962), play, dreams and imagination in children.

Since both free play and directed play are important, there should be a balance between allocating time for uninterrupted free play and embedding or extending academic content in different ways within playful activities to support children's learning in various subject areas.

a. Play and numeracy activities

The concept of '**numeracy play'** is defined as play with number toys, shapes, construction toys, building blocks, or board/card games, in addition to counting things and singing counting rhymes/songs. These numeracy activities can be differentiated into **formal activities** (those where there is an element of explicit instruction from the caregiver to the child) and **informal activities** (those that arise in daily life). The formal and informal numeracy activities in early years can have substantial effects on later mathematics achievement.

The formal ways of teaching numeracy include for example playing with numbers, playing with blocks, constructions using objects of different shapes and size, problem solve through imaginative play, order, sort, match in role-play area.

The informal ways of teaching numeracy include using objects/materials found in home environment. Parents have a vital role in the creation of the home numeracy environment through the provision of numeracy-related learning tools, and through parent-child interaction in numeracy related scenarios.

b. Play and Science

Children conduct concrete experimental activities which contribute to children's interest and slowly emergent understanding of nature, technology, health, mathematics, biology, chemistry and physics. Through such activities children achieve knowledge on plants, animals, the circuit of nature, nature phenomenon plus nature regularity and accordingly understanding of subjects like light, water, magnetism, electricity, air current etc. through experimental, exploration and discovery activities

Example: Water play

Children's first learning experiences with water are conducted early using tools easily found in the home environment: safe, unbreakable measuring cups and small containers (margarine tubs, yogurt cups, plastic bottles etc.)

Free play with water can build the foundation for understanding of a multitude of scientific concepts, including those in

- Physics (flow, motion, sinking and floating, bubbles, magnetism, colour spectrum, evaporation)
- Chemistry (solutions, cohesion, mixture, mixture and solutions)
- Biology (plant and animal life), and
- Mathematics (measurement, equivalence, volume).

Mastery of these concepts will support children's understanding of academic subjects in later schooling and life.

Conclusion

Sensory experiences facilitate development in multiple domains. Sensory materials encourage cognitive development. As children manipulate the materials, they learn to understand concepts such as more/less, full/empty, and sink/float. Children learn math skills such as size, conservation, counting, matching, classifying, and sorting (Guha, 2002). Children reinforce and practice their large and small motor skills as well as eye-hand coordination while pouring, molding, stirring, sifting, sorting, measuring, lifting and carrying sensory materials. Using descriptive words such as hard/soft, rough/smooth, liquid/solid, hot/cold to describe sensory materials helps children to expand their vocabulary.

c. Play and language skills development

When it comes to teaching and learning in early years, PLAY becomes a medium of instruction because children have not yet mastered the language so that they can exclusively use it for learning.

The best channel for developing competences is 'Play'. Even language skills are developed and mastered through play.

Different types of play contribute to the development of language skills

- **Manipulative play and development of language skills**

This play involves the use of hands, legs and all body parts. It develops hand-eye coordination in children.

Manipulative play enhances all language skills of listening, speaking, reading and writing where the hand muscles are used and the eyes are coordinated to perform the manipulation of materials. This implied that teachers used varied language activities in listening, speaking, reading and writing to expose children to acquire language skills.

- **Creative play and Language skills development**

Creative play enhances the development of language skills. This is because creative play involves the use of materials like paint, brushes, paper, water and modelling clay hence children are exposed to various activities that are selected by the teachers. Through these materials, they are able to express their thoughts hence develop their vocabulary in listening, speaking, reading and writing skills.

- **Dramatic play and language skills development**

Dramatic play promotes the development of language and creative skills. This is because the learners are able to listen to instructions, perform the roles as they speak, read the scripts and write essays related to the roles they perform. In make believe play, learners enhance the ability to imitate and create. They practice words they have heard from others and realize that they must listen and organize meaningful scripts through writing.

The following are dramatic play activities that enhance language skills

- Talk about what different people do in role-play situations
- Talk in the language of different roles e.g. shopkeeper, mummy, Little Red Riding Hood (Pre-schoolers)
- Role-play nursery rhymes, stories, dialogue
- Use language to plan and create real-life or imaginary situations
- Develop the language of dialogue e.g. listen to and respond to what other children/adults say
- Extend vocabulary associated with imaginary/role-play e.g. depending on contexts (school, airport, library, artist's studio, garden centre, …)

- Have access to related books fact/fiction in role-play area.
- Develop writing skills e.g. writing shopping lists, prescriptions, Get Well cards, record sheets, forms, bills, leaflets, menus, letters
- Develop ICT skills through office role-play – telephones, keyboards, photocopier, computer.

d. Play and social skills

Play promotes the development of social and emotional skills:

- Children playing different roles and relating to each other from the perspective of their assigned roles.
- They learn to agree on different things after discussion,
- Negotiate roles, and cooperate to bring it all together.
- They learn how to cope with any fears and worries that may accompany life experiences.
- They are better able to show empathy for others in different life contexts
- They learn to control their impulses, and tend to be less aggressive than children who do not engage in play.

3.3.4. Disadvantages of play activities

- Sometimes they are competitive, pitching friendly individuals or groups against each other.
- Sometimes they may reflect negative characteristics such as aggressiveness of the adult society that learner may internalize as they play;
- Play require a lot of time for all the learners to develop their own interests at their own pace;
- Inexperienced teachers may use play activities yet the learner achieve very little.

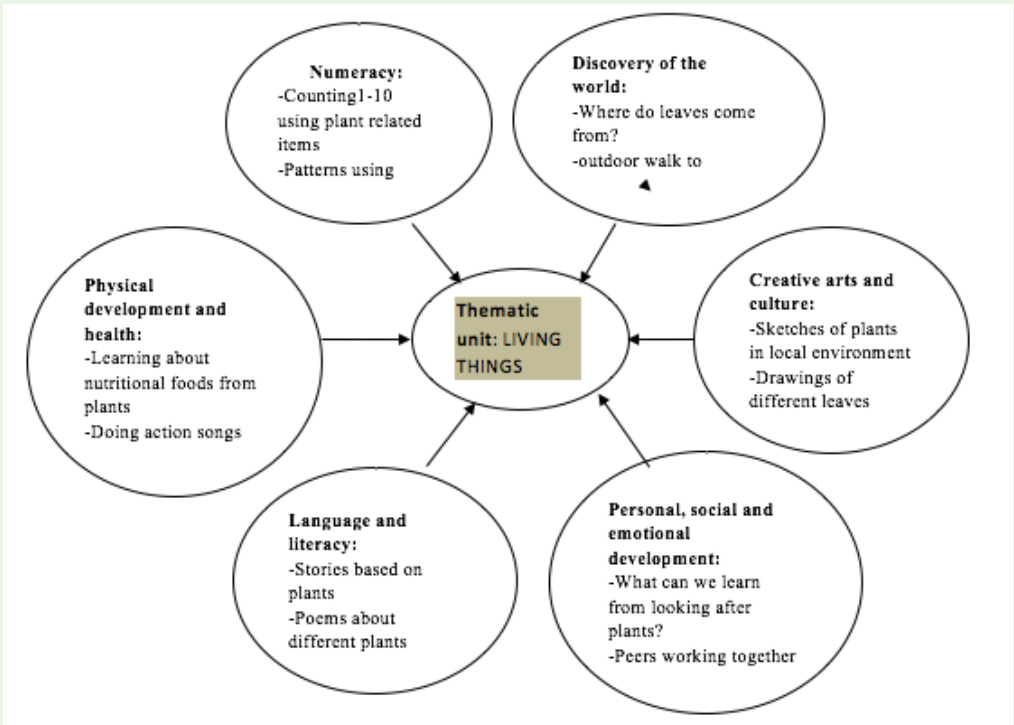
Application activity 3.3

1. Differentiate play from game.
2. What are the advantages of play in the learning and teaching process?

3.4. Thematic approach

Activity 3.4

1. Write the term “thematic approach” in a search engine (e.g. Google, Bing, Yahoo, etc.) and find different details explaining and/or providing examples about the concept. Write down a summary in your exercise book.
2. Read and interpret the diagram below.



3.4.1. Introduction

The term “thematic” is delivered from the word” theme”**.** Learning in thematic refers to learning which is centred on themes. It involves creating a variety of educational activities planned around a central theme. These activities are integrated into all aspects of the curriculum within a given period.

We use thematic teaching to help children to achieve development milestones as well as to develop number, reading and writing skills. Therefore, themes are used to enable children acquire knowledge, skills and attitudes through a series of planned activities. Time taken to cover one theme depends on its content and may range from several days to one month.

3.4.2. Organisation of teaching using thematic approach

The teacher or learner may select the theme to be learned. The teacher starts on what the children know to what is unknown otherwise referred to as button to the top. The teacher may proceed to help the children in theme selection in case they are not familiar with the listed themes. He/she teaches the theme chosen under different activity areas. The teacher is supposed to make learning as natural as possible. He/she can use a song or a poem when changing from one activity area to another. Teaching of one theme can take a period of time ranging from one week or even month.

The knowledge and skills taught, this should progress in different levels starting from the simplest to the most complex. The teacher should cater for different age groups in the class providing them with appropriate activities. Together with children teacher should develop various learning corners as learning progresses, these corners should have varied materials for learning.

The teacher should use guiding questions or through-provoking questions to get information from children to what they know.

3.4.3. Characteristics of thematic approach

- Main activity areas are put together or incorporated.
- The teacher needs to be aware of different types of knowledge, skills, concepts and attitudes to be developed in different activity areas.
- Learning is continuous, that is, one theme is learnt through a planned activity for a given period of time.
- The arrangement of learning corners portrays the theme being learnt during a particular time.
- The child's needs, interests and abilities are taken into consideration when planning activities in each theme.
- There is flexibility in the choice and planning of the activities.
- Learning is at the pace of the child.
- Learning is in a natural set-up which helps the child to learn.

3.4.4. Advantages and disadvantages of thematic approach

Advantages of thematic approach

- It is flexible i.e. it's easy to change from one activity area to another.
- It is cohesive i.e. it is continuous and this helps to build one's previous knowledge without a break in learning.
- In thematic approach, the knowledge gained is retained i.e. there is memory retention because the child remains focused on a certain theme at a certain period of time.
- It is comprehensive i.e. all activities in thematic approach and content area can be related and incorporated together.

Disadvantages of thematic integrated learning

- Not all children will have interest in a particular theme; those without interest may not learn since they have a negative attitude towards it.
- It may create boredom to the fast learners as they are forced to move at a slower pace to cater for the slow learners n a certain theme, children may not understand some activities thus making the child to hate the whole theme.
- In a certain theme, children may not understand some activities thus making the child to hate the whole theme.
- It requires a lot of organisation skills and knowledge from the teacher to organize the lesson.
- Some themes may be difficult to apply in teaching; other activity areas as deriving activities may prove impossible.

Application activity 3.4

1. What are the characteristics of thematic approach?
2. After a Foundations of Education lesson on thematic approach, a student teacher in Language Education realized that the thematic approach was applied in language subjects. Do you agree with this student? Explain why using concrete examples from one of the following syllabus or textbooks: French, Kinyarwanda or English.

END UNIT ASSESSMENT

1. Explain how to help learners understand the phenomenon of condensation following the steps of experimental approach.
2. Think about a weekly theme and using the P4 syllabus, create a thematic planning web diagram to show how different subject topics/lessons will turn around.
3. Choose any lesson from pre-primary or primary syllabus and prepare a playful activity that you can use to teach that lesson. Set clear instructions.
4. Read and role play the following scenario:

   The teacher teaches days of the week through play. He or she puts flashcards in different corners, each flashcard and corner represents a day. The teacher gives instruction to the learners that they will run to the corner according to the day he/she says.

   After the play: What is your appreciation of this learning technique?

UNIT 4: ACTIVE TEACHING METHODS AND TECHNIQUES

Key unit competence: Apply different active teaching methods and techniques in specific situations during micro-teaching and teaching practice.

Introductory Activity

Observe a lesson and fill the table below:

What the teacher is doing during the lesson?	What are students doing during the lesson?

4.1. Teaching and learning Methods

Activity 4.1

Referring to the following table, choose one best way you learn better and write a short paragraph describing reasons and your feelings about it.

I learnt best when I follow tutor's instruction	I best learn when I work on an assignment/ homework or a project	I best learn when I collaborate with my classmates/ through group.

4.1.1. Direct instruction method

Direct instruction method refers to the method where the teacher explicitly presents, explains and models the information in front of class. This is an example of teacher-centered method. It involves step-by-step presentation and demonstration of the materials to the students. It is important to include it in some lessons to make sure that students get clear information and guidance.

4.1.2. Inquiry-based learning method

Inquiry-based learning is a form of active learning which emphasizes the student's role in the learning process rather than the teacher telling students what they need to know. Students are encouraged to explore the material, ask questions and share ideas.

Through inquiry-based learning method students are provided with opportunities to explore, inquire and discover new learning in a spontaneous and a self-directed way.

Teachers play the role of:

- Defining the topic or introduce the question,
- Guiding students plan where and how to gather data and information,
- The students present findings through graph, charts, Power Point presentation, models, and writing.

4.1.3. Cooperative learning method

Cooperative Learning method refers to the method where students of mixed levels of abilities are arranged into groups and rewarded according to the group's success, rather than the success of individual member.

Through cooperative learning method students are asked to work in small, heterogeneous groups to complete a problem, project, task, or other goal as the teacher facilitates. It works to reinforce a student's own learning as well as the learning of his or her fellow group members; students must be taught interpersonal skills to work effectively as a team (i.e. leadership, conflict resolution, roles, consensus building and active listening).

Application activity 4.1

Choose one method and write on a flipchart persuading ideas about it.

a. Direct Instruction method

b. Inquiry-based Learning method

c. Cooperative Learning method.

4.2. Active teaching and learning techniques

4.2.1. Teaching and learning techniques based on direct interaction between teacher and learners

Read the list of the following concepts and fill in the table below which intends to check your prerequisites about them: Brainstorming, storytelling, demonstration, expert panel, , presentation, question and answer, and miming)

I know it,	I have little information about it,	I don't know it.

a. Brainstorming

- **Definition**

Brainstorming is about writing down all ideas that come to mind in response to a question or problem/ situation. The ideas can be recorded in the form of a list or a web or any other convenient form. This technique can be used at various stages of a lesson to stimulate and enhance the creativity of learners, accelerate interactive, joyful learning and provoke thinking skills. It also enhances peer support and fosters learner-centred practices.

- **Key steps for brainstorming**

i. Define the problem by the facilitator/teacher

The first step should be to determine a problem question that the brainstorming session will address. The question should be clear and prompt students to think of solutions, such as "How can we handle the problem of drop out in primary and secondary schools?" If necessary provide any additional information students need to have the whole background of the problem.

ii. Brainstorming step

Also called diverging step, students are given time to think on their own, explore and generate solutions to the problem. They write ideas on small papers/sticky notes. During this step the following rules are to be respected to have many and creative ideas:

- One idea per small paper
- No judgments/criticism: this is the first rule of creativity in general. Accept all ideas.
- Think freely. Encourage student to give any ideas from their mind. All ideas are welcome.
- Big numbers of ideas: the more ideas, the better. It is better to allow students to produce as many ideas as possible in a given time.

iii. Evaluation of ideas

Also called converging step, this is the time when ideas are sorted out and discussed in order to isolate the best ones. Categories of solutions are therefore created to facilitate the sorting out exercise. Some ideas can be merged.

iv. Conclusion

To conclude, the teacher and students make a summary of the proposed solutions, give explanations one by one. Students

b. Story telling

Storytelling is used to present or demonstrate processes, introduce ideas, challenge learners or illustrate abstract concepts such as life, honour, wisdom and courage. Photo stories can give more body to a story as one image can tell more than thousand words.

Story telling promotes creativity and critical thinking as well as confidence, fluency in speech, listening, reading and writing skills. It develops imaginative skills and inquiring minds and provides opportunities to transfer learning, deepens understanding of concepts and retains information. By capturing the attention and interest of the learners, storytelling boosts the teacher-learner relationship and makes the instructional process lively and interesting.

Key steps of story-telling

- Identify ideas
- Design a scenario or a plan
- Collect data and resources: text, images, music, actors, voices, equipment etc.
- Develop and rehearse the story
- Prepare for sharing: presentation, publication etc.

Important tips

- Select a story relevant to the concept(s) to be learnt.
- Apply appropriate gestures, facial expressions, posture, movement, tone of voice and pace.
- Keep the story short and lively.
- Design relevant questions about the story to check the learners' understanding.
- Provide a conducive environment for the presentation and to enable sharing of ideas.

c. Demonstration

Use physical materials and actions to show and explain how something works or is performed. The demonstrator performs the tasks step-by-step to enable the learners to repeat the same task independently or in groups. Here, the teacher supports the learners in their attempts, provides guidance and feedback, and offers suggestions for alternative approaches.

Key steps

- List the equipment, teaching aids and other materials that you will need during the lesson.
- List relevant questions before, during and after the demonstration to engage the learners and assess their understanding.
- Rehearse the demonstration before the lesson.
- Prepare the equipment before the lesson.
- Arrange the classroom seating to enable all learners to clearly view the demonstration.

Important tips

- Ensure that the demonstration is relevant to the concepts or skills studied in the lesson.
- Clearly explain what you are doing at each step of the demonstration (why and how).
- Allow time to try and to repeat until the required level of achievement is attained.
- The questions should provide opportunities for learners to predict what will happen, observe perceptible changes, record their observations and draw their own conclusions.

d. Expert panel

Teacher should invite one or more guest speakers who have specialized skills and experiences which are related to a topic of study to come and speak to the class. The guests can share a small presentation about their work and respond to students' questions. Students should prepare questions in advance.

e. Singing

Songs can be used in teaching and learning process as a method or in combination with other methods**.**

Advantages of singing method

- It motivates or makes learning interesting
- It provides an opportunity for learners to develop and display talents
- It enhances participation of learners in the lesson
- It instils acceptable values such as team spirit, solidarity and socialization
- It reinforces and commits to memory what has been learnt
- It increases the understanding of concepts
- It praises good behaviours

Disadvantages of singing technique

- It can cause disruption in the neighbouring classes if not properly managed
- Sometimes it is not easy to select or find a song relevant to the content being taught.
- It is not effective if the teacher conversant with the word and tune of the song.

f. Question and answer

This technique is also referred to as questioning technique or the Socratic Method. It is one of the key teaching methods used in the classroom. The teacher may ask a series of questions to find out how much the learners know about the topic and to determine what needs to be taught. Testing is also a mode of questioning. Teacher tests or questions learners on what has been taught previously to investigate what they have learnt.

- Characteristics of good questions: A good question should be: 1. Clear, precise, brief and direct
- Formulated to challenge and stimulate the learners thoughts

- Suitable for the age, abilities and interest of the learners
- Within the experiences of the learners and in the language they clearly understand

Advantages of question and answer method

- It helps the teacher to find out if the learners had prepared for the lesson or not
- It drills or gives practice in what has been learnt
- It guides, leads and motivates learners
- It helps the teacher to evaluate the level of understanding of the learners
- It develops the learners' ability to think and explain causes, effect and purpose of thins
- It helps learners to organize material learnt
- It emphasizes important points.
- It helps learners to discover their interest or talents

Disadvantages of the questioning method

- It encourages the teacher to focus on a few learners who are able to answer questions.
- It discourages slow learners from participating in the lesson for fear or making mistakes
- It may cause some learners to lose self-esteem and self-confidence
- Some teachers may not be skilful at using probing questions to get desired responses
- It increases the possibility of poor class control due to chorus answers
- Teachers with poor communication skills may not use it effectively. (all, 2011)

g. Miming

This is the process by which the teacher or the learner acts or tells stories without speaking or producing sounds. It involves the use of movements of arms, legs, hands and feet (gestures). In addition, body postures and actions are also incorporated in communicating ideas. Basically this method involves using the major aspects of non-verbal communication in delivery of content.

Advantages of miming

- It allows the teacher and learners to employ facial expression
- It can effectively be used to learners who are auditory challenged (deaf). This can thus make it facilitate interaction between these learners and those with speech abilities
- It can be used to train the deaf learners on how to read and write
- It offers training to learners on observation skills
- Through the use of facial expression, we are able to communicate our emotions and analyse the feelings and sentiments of others
- It develops a spirit of competition among the learners
- It cements good social relationship among the learners, for example cooperation
- It instils confidence in how learners express themselves to each others
- Makes the instructional process interesting thus stimulate learners' interest to the content
- It enables learners to develop the ability of interpreting information through imagination
- It develops power of imagination and creativity in the learners as they initiate and interpret the miming activity

Limitations/disadvantages

- It is time consuming
- It may inhibit the development of spoken language among learners who are not auditory challenged
- Liable for misinterpretation by learners because no speech is involved. (all A. M., 2009)

Application activity 4.2.1

1. Explain the reasons why the concepts discussed above are active teaching methods and techniques
2. In which situations does a teacher apply active teaching methods and techniques?

4.2. 2. Teaching and learning techniques that focus on inquiry and indirect interaction between teacher and learners

Activity 4.2.2

Gives 2 examples of learning activities for which teachers can ask students/ learners to work alone or in group outside the classroom.

a. Case study

Case study refers the strategy of writing down a real-life scenario for students to analyse, discuss, respond to, and learn from. This helps them to apply what they are learning to common situations that they are likely to encounter.

b. Learning corner

Set up a space in the classroom that allows easy access to a variety of learning materials in an interesting and productive manner. Learners can work by themselves or with others in self- directed activities on a content related to the curriculum and real life. These learning corners allow learners to deepen their understanding of subjects, apply their learning in a stimulating learning environment and engage in meaningful discoveries that match their individual interests. They provide learners with hands-on experiences they can pursue at their own pace and level of curiosity. Learners must be trained on how to use the materials, do the activities set up in each corner as well as the behaviors expected during corner work time.

c. Research work

In research work teachers Gives each learner or group of learners a research topic. Learners have to gather information or ask experienced people and they have to document their findings and present the results (orally and/or in written report or poster).

d. Practical work

Teacher assigns learners, individually or in groups, practical tasks (i.e. conducting an experiment, doing community clean up, performing first aid, cooking a meal). To be effective, the task needs: a clear purpose with strong links and relevance to the curriculum, quality materials, learners' engagement, time for preparation and carrying out the work, support from the teacher or other experts. Such activities encourage deeper understanding of phenomena and develop skills such as observation, practical work, planning, reporting, etc.

e. Project learning

Project learning refers to teaching and learning technique whereby individual learner or group of them is/are tasked to find out information about a learning situation or topic. The topic may be taken from the syllabus or other learning resource. It is mostly curried out of the classroom setting. A project can be a book-based to mean that the student read information from books and print materials or a field-based where the learners go to the field to investigate the case with hands on information.

f. Assignment

This is a teaching and learning technique used by both teacher and learners. The teacher gives a piece of work to the learner. The learner carries the task more often after the formal classroom hours. The task should be linked to the curriculum content. Assignment includes individual work or group work. Assignment should:

- Be clearly defined
- Challenge the learners so as to stimulate their interest.
- Be within the learners' ability
- Not be too long and big.

g. Discovery

Discovery is a teaching and learning technique which gives learner or group of learner's opportunities to find out something by which they were uncertain. Discovery helps leaners to figure out something mentally. A teacher asks puzzling questions that require leaners' investigations.

The discovery begins when a learner accepts to solve a problem as well as when one's previous knowledge or patterns of behaviour are inadequate to solve the problem. This is what opens the wheels to long process of finding out a new or what was initially unclear in one's mind. Discovery is also known as inquiry, enquiry, problem-solving or reflective thinking. Agumba M.Ndolah et.all,(2009).*Primary Teacher Education (Page 195.)*

h. Programmed learning

Refers to the teaching and learning technique that aims at breaking down subject matter into simple and easy to understand steps which are sequenced in a way that enables self-paced learning to proceed without the usual help of a teacher. The subject matter presented to the learner is broken down into simple steps called frames. Each step is generally in the form of question that requires a response.

As soon as the response is made, its correctness or otherwise is communicated to the learner. Explanations and further guidance are provided for both right and wrong answers.

i. Field visit

Field visit is also known as field study or educational visit. This refers to the teaching and learning technique whereby the teacher organizes visit and place/s and he/she takes students there in order to observe, analyse, record and interpret a given concept which was purposefully chosen from the syllabus. Field visit can take place within the school or outside the school either nearby or at distant place. Both teacher and learners go through three main steps of field visit namely:

- Preparation for trip when possible instructions, basic information and expectations are shared.
- During the trip when participants/ learners and teachers are actively carrying out the due activity.
- After the visit when it comes time to make follow up about the success or challenges during the trip.

Application activity 4.2.2

Choose one of the techniques above and demonstrate how you can use it in primary subject of your choice.

4.2.3. Teaching and learning techniques that focus cooperative learning

Activity 4.2.3

Read the following game

Name of the game: GO, SLOW, STOP!

How To Play:

1. Mark clear boundaries for a play area that allows enough room for children to run and chase each other.
2. Ask children to find a space in the play area and face you.
3. Tell the children that they will pretend to be driving a car, bicycle, or motorcycle when playing this game.
4. Explain and demonstrate that:

- There are three commands in the game that the children must be aware of.
- The first is “go.” When you say, “Go!” the children will move quickly around the play area pretending to drive their vehicles and working to avoid bumping into any other vehicles.
- The second is “slow.” When you say “Slow,” Children will move in slow motion around the play area, still pretending to be vehicles.
- The third is “stop.” When you say “Stop,” Children will freeze and stand completely still until they hear the words “Go!” or “Slow” again.

5. The game can continue as long as desired. Make sure that children are watching for others at all times.

What are the competences that the learner can develop through this game?

a. Debate

This is a technique where two groups of speakers talk for or against a motion, some oppose it while others support it. The winners are the ones who will have raised more valid points by the end of the session.

Preparing for and conducting a debate session

When preparing for and conducting a debate session a teacher should:

- Select a topic that is appropriate to the lesson and age of learners;
- Choose the speakers or panellists in advance: have at list three speakers on each side to allow other learners to give their comments.
- Assist the main speakers to prepare for the debate
- Arrange the room so that the speakers can be seen and heard by all the learners;
- Introduce the speakers and the topic to be debated or discussed;
- Guide the debate by ensuring that each speaker is given adequate time to respond;
- Make a summary of what has been debated.

b. Games

Games design a play activity that allows students to review content in a fun, enjoyable manner (i.e. pick a card, memory, trivia, charades, concept ball). Games help students learn faster and better, and in enjoyable manner. Games/plays help to create a classroom experience that actively engages learners. They develop communication and other important skills such as social skills, critical thinking, problem-solving, numeracy and literacy skills in different subjects.

c. Group work

Group work is a form of cooperative learning that involves having learners work together. This is mainly used to generate ideas, increase learners' confidence in their answers, encourage broad participation in plenary session, promote higher level of reasoning and learn concepts in-depth, develop skills such as teamwork, critical thinking, interpersonal, communication and peer teaching.

Key steps for group work

- Design the tasks for the group activities.
- Determine the groups' size and assign learners (apply gender or disability criteria when applicable).
- Clearly describe the objectives and assignments given to each group, and identify member roles.
- Set ground rules including duration of activities and time of transitions.
- Distribute hand-outs to describe complex activities (print both sides).
- Monitor the group activities; facilitate knowledge sharing and analysis of findings.

Important tips

- Be supportive: clarify the assignments, encourage and motivate the learners, praise good work.
- Group leadership is important for effectiveness of the group.
- As learners share ideas, conflicts may arise. Some conflict is desirable allowing learners to disagree and argue about ideas. Some conflict is destructive if based on lack of respect, domination, or failure to contribute. Try to get the group to resolve the conflict themselves before intervening.

d. Role play

Learners act out a scenario or scene to practice by putting information learned to use in an everyday situation. By interacting with their peers, learners experiment and learn to deal with unfamiliar real life situations while also exercising their observation and communication skills.

Key steps for effective role play

- Select or develop the role playing scenario: Teacher's preparation
- Tell the learners what they will be doing and why
- Select participants and explain their roles
- Explain what you expect from the audience
- Give learners time to prepare
- Commence the role-play
- Discuss, evaluate and debrief
- Summarize the learning points.

Examples: Learners can act as delegates from different countries who come together to decide upon important world issues (useful to explore environmental, political, cultural, social and other global issues).

e. Think-pair-share

Students are given a question or topic to think about. They take some time to think independently first (with or without writing down notes). Next, they pair with a partner or small group to discuss the thoughts they've come up with. Finally, the whole group comes back together to highlight key points raised during their discussions.

f. Simulation

Simulation is the setting-up of a realistic environment modelling a real life situation or a scientific process by using role-play, models, games, virtual labs, etc.

Simulation involves learners trying out situations, such as future occupational experiences as it happens in reality. In this learning process, they will be able to learn by doing, predict outcomes and express their feelings, perceptions and experiences. Simulation is useful to analyse phenomena, objects or events. It can assist learners in identifying problems and solutions and enables them to apply previously learned theory in a realistic way. Teachers can use simulations to illustrate how things work so that learners get a better insight of complex processes.

g. Dramatization

Dramatization is technique of teaching and learning which calls the learner to act various aspect of the content. During dramatization, the learners use muscles of the body and speech alongside rhythm in expressing their emotions and ideas in a free manner. Dramatization takes more participants and time in organization as learners memorize the words and actions to act. However, at times learners can improvise dram a thus allowing them to make up the words and actions. When this happens, the activity is not based on prepared scripts, instead they make up the words as the story progresses. M.Ndolah, Bernard Misigo,Margaret Ongek, Emmy Kipsoi and Catherine Simiyu (2009), *Primary Teacher Education page 188.*

h. Round table

A question is posed by the teacher to groups of learners. Each person in group writes one answer on a paper and passes it to the next team member. The group looks at each answer and decides which one to present to the class. Each group shares/presents their answer to the entire class. The suggestions are discussed by the class and conclusions drawn.

Application activity 4.2.3

Choose one of the techniques above and demonstrate how you can use it in primary classroom subject of your choice.

4. 2. 4. Teaching and learning techniques that focus on presentation of information

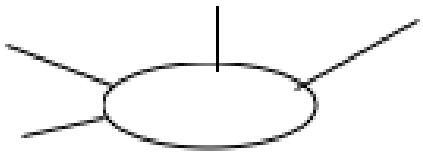
Activity 4.2.4

How do you appreciate the information presented in tables?

a. Concept mapping

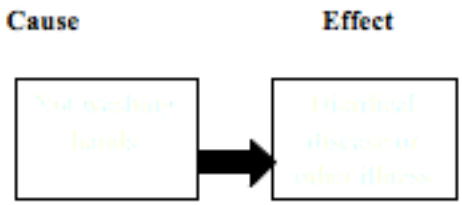
Put the concept you want learners to define or “unpack” in the centre of a web. Surrounding that key term, write any associations they have with that concept. Encourage them to think of as many as possible.

Here below there is an example:



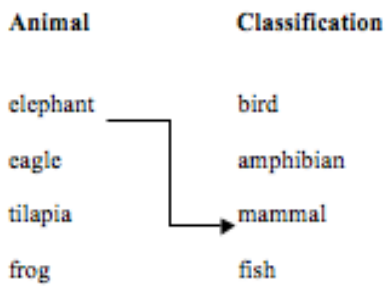
b. Graphic organizer

Graphic organizer: Design any pictorial chart or form to be filled in that separates information by category or type. This helps students to see the relationships between pieces of information and ensures they adhere to the directions given. Here below there is an example:



c. Matching

Students are given examples of something and have them match each item with the correct corresponding term or category. Here below there is an example.



d. KWL

KWL Chart: Draw a chart with 3 columns. **K** stands for "Know" and under this heading students list what they already know about a given topic. **W** stands for "Want to know" and under this heading students list questions they have and things they hope to find out about the topic. These two sections are filled at the beginning of a training or unit as an introduction. The final column **L** stands for "Learned". This is filled at the conclusion of the topic/sub-topic and is where students note down what they have gained in the end. Here

below there is an example: **Elephants**

Know	Want to Know	Learned
Groups are called herds Found in Africa and Asia Vegetarian Poached for ivory	Why do African and Asian elephants look different? What risks are there to baby elephants? What are the best ways to protect elephants?	

e. T-chart

Set up a simple table with by drawing a T to create two side-by-side columns. Use those columns to contrast two things. Example is below:

Air transport	Car transport
Fast	Delays due to traffic and road quality
Safe	Dangerous – many road accidents
Expensive	Cost effective
Does not reach everywhere	Can reach almost anywhere

f. Sort and classify

Give participants a list of mixed items as well as key category labels. Then participants put the items into the appropriate group using their logic and reasoning skills.

Europe	Africa	Asia	South America
South Korea	Argentina	Egypt	France

Application activity 4.2.4

After learning about the active teaching and learning techniques identify those that are mostly used by your teachers and explain how they are implemented.

END UNIT ASSESSMENT

Read through any pre and primary syllabi related to your option. Select 2 units, suggest 2 lessons and choose 4 appropriate active teaching and learning strategies you can use while facilitating those lessons. Fill in the following table with the collected information. Call it a plan

Option	Subject	Unit	2 lessons	4 Strategies

Share your plan to the whole class through role play.

UNIT 5: COMPETENCE-BASED CURRICULUM

Key Unit competence: Assess the pre-primary and primary Competence-Based Curriculum

Introductory Activity

Read the following scenario and answer related question.

Scenario:

Mugisha want to recruit a domestic worker. Three applicants Amina, Betty and Peter were shortlisted and went through the selection process which took 1 month. At the end of the first test about washing clothes, Mugisha found the following:

Amina can tell the steps of washing, the required materials but unable to respect washing procedures while washing.

Betty has good knowledge of steps, guidelines and materials for washing clothes. She is well appreciated on how she applies washing techniques. She demonstrates patience, cleanliness and good social behaviours.

Peter knows very well all the steps and the materials needed for washing and he is very good at washing clothes respecting all steps and guidelines. He often argues with his boss when he is asked to explain the mismanagement of the cleaning materials.

Question

1. You are a member of evaluation panel which candidate will you select for this job? Explain to other panel members why you selected that candidate and why other two candidates were rejected.

5.1. Key concepts of CBC

Activity 5.1

Write the term "**Competence-Based Curriculum**," in a search engine (e.g. Google, Bing, Yahoo, etc.) and find different details explaining it. Try to make a concept map of the related ideas/concepts.

- **Competence:** the ability to perform a particular task successfully, resulting from having gained an appropriate combination of knowledge, skills and attitudes
- **Knowledge:** the information, awareness or understanding you gained through learning experience
- **Skills:** A skill refers to the ability to carry out a task well with determined results of the learning and practice often within a given amount of time, energy, or both.
- **Attitude:** The opinion and feelings that you usually have about something in your behavior
- **Student's exit profile:** Refers to the package of qualities, abilities of a student at graduation from a given education level
- **Curriculum:** the overall content, with specified subjects, that is prescribed for study in a school system as well as the specific knowledge, skills and competencies students are expected to learn; it may also include ideas on how learning experiences should be designed and learning outcomes assessed.
- **Syllabus:** a document which outlines everything that will be covered in a particular course and the sequence of topics.
- **Cross-cutting issues:** important curriculum content that does not belong to any one subject or learning area exclusively but which is best taught and learned in a number of subjects.
- **Generic competences:** are the competences which are transferrable and applicable to a range of subjects and situations including employment.
- **Learning outcomes:** describe what learners are expected to know, understand and be able to do at the end of the learning process.
- **Criterion:** a principle or standard by which something may be judged or decided.

Application activity 5.1

Match the key terminologies to their appropriate definitions in the table below:

1.Attitude	a.The information, awareness or understanding you gained through learning experience
2.Competence	b. Ability to carry out a task well with determined results of the learning and practice often within a given amount of time, energy, or both
3.Criterion	c. Refers to the package of qualities abilities to be able to perform at graduation from a given education level
4.Cross cutting issues	d. A principle or standard by which something may be judged or decided
5.Curriculum	e. Important curriculum content that does not belong to any one subject or learning area exclusively but which is best taught and learned in a number of subjects
6.Generic competences	f. The overall content, with specified subjects, that is prescribed for study in a school system as well as the specific knowledge, skills and competencies students are expected to learn; it may also include ideas on how learning experiences should be designed and learning outcomes assessed
7.Knowledge	g. Describe what learners are expected to know, understand and be able to do at the end of the learning process
8.Learning outcomes	h. A document which outlines everything that will be covered in a particular course and the sequence of topics
9.Skills	i. Ability to perform a particular task successfully, resulting from having gained an appropriate combination of knowledge, skills and attitudes
10.Student's exit profile	j. The opinion and feelings that you usually have about something in your behavior.
11.Syllabus	k. The competences which are transferrable and applicable to a range of subjects and situations including employment

5.2. Knowledge versus Competence-Based Curriculum

Activity 5.2

Read the following scenario and answer the questions

There are two teachers (Mugabo and Katabirora) in a given primary school in Rwanda. When Mugabo is teaching, he provides activities for learners which require them research information for themselves through internet and books then present the findings. He encourages group discussions in his class and his learners enjoy the way they are facilitated to learn. Mugabo does so because he also studied in this way. On the other hand, Katabirora while teaching, he uses different means of searching information and presents it to the learners in the way that they are not offered opportunity to search and discuss. He teaches in the way he was taught. The learners are passive recipients of information and do not appreciate the way by which they learn.

Questions:

1. Among the two teachers, who is the most competent and why?
2. Among the two categories of learners, who will be productive in terms of problem solving and competitive on labour market?

Why a Competence-based Curriculum?

A Competence-Based Curriculum (CBC) is designed to develop learners' competences rather than just their knowledge. That is, the ability to apply learning with confidence in a range of situations. The focus on what learners can do ensures their learning has greater purpose and is deeper than it would be otherwise. A competence-based curriculum is characterised by approaches that are largely learner-centred, criterion-referenced, constructivist, and focused upon learning outcomes (rather than content definition) and with an emphasis on formative assessment.

The Ministry of Education through the Rwanda Education Board undertook the task of a comprehensive review of the pre-primary, primary and secondary education curriculum starting in July 2013. The underlying principle behind the curriculum review process was to ensure that the curriculum is responsive to the needs of the learner, society and labor market. This necessitated shifting from objective and knowledge-based learning to competence-based learning. The emphasis was to build more on knowledge, skills and attitudes, and to streamline the coherence within the existing syllabi by benchmarking them with those from other countries with best practices.

The table below summarizes the difference between Knowledge-Based Curriculum (KBC) and Competence-Based Curriculum (CBC)

Knowledge-Based Curriculum	Competence-Based Curriculum
Focuses on subject content and what learners can know and memorize rather than what they can do.	Focuses on what learners can do and apply in different situations by developing skills, attitudes and values in addition to knowledge and understanding.
The learning process is teacher-centered with minimum involvement of the learners.	The learning process is learner focused where a learner is engaged in active and participatory learning activities.
The teacher provides the subject content concepts, through writing or dictating notes and practical demonstration where experiments are required.	The learner builds new knowledge from prior knowledge through discovery and problem solving based learning (constructivist theory).
The assessment is after a period of time through tests or exams of pen and paper.	The assessment is an integral part of the learning process and takes place all the time by informal or formal methods.
The assessment is norm-referenced for the purpose of ranking or selection mainly.	The assessment is mainly criterion-referenced for the purpose of evaluating and measuring what learners are able to demonstrate.
Records show only naked scores or grades without indicating what the learners have demonstrated.	Records with clear statements about competence achievement are necessary for feedback

Application activity 5.2

Read the following statements and indicate those which focus on knowledge and those which focus competences:

1. Using fibers, Emma is able to make a mat properly
2. Gentil is able to enumerate the materials used to make a soap
3. Kagaba is able to write properly an administrative letter
4. Mwiza is able to plan a lesson and teach it with confidence
5. Denis is able to drive a car
6. Odilla is able tell the steps of plant germination

5.3. Vision, aims, values and principles of Rwandan CBC

Activity 5.3

Using internet and/or library, search the meaning of the following terms: ”vision, mission, aims, values and principles” of Rwandan CBC.

5.3.1. Vision, aims, values

a. Curriculum vision

Taking into account national policies, the East African Community Protocol, the national context, the views of stakeholders, the learner profiles and the range of objectives expressed in the rationale, the following curriculum vision was agreed upon.

The vision of Rwanda is to establish an inspiring 21st century curriculum, optimizing the potential of all learners and enabling every young Rwandan to make a valuable contribution to the sustained growth of the nation.

b. Curriculum Aims

The aims define what the nation envisages its young people to be by the time they leave education and the nature of curriculum that will bring this about.

- **Curriculum aims and objectives:**

To ensure the curriculum*:*

- Is engaging, dynamic and aligned to the future employment needs of the nation and the global economy;
- Challenges all young people to optimize their achievement;
- Promotes standards comparable with the highest internationally in terms of competencies, knowledge and skills.

- **Student aims and objectives**

- To develop learners as**:**
- Patriotic and responsible citizens, ready to play a full part in society;
- Confident and self-reliant people, ready to take their place in the labour market;
- Successful life-long learners, ready to adapt to new situations, and be agents of change;

- Creative and innovative individuals who are curious, adaptive and productive.

c. Curriculum values

The Rwandan curriculum is underpinned by the values that represent the basic beliefs of the nation. These basic values permeate the curriculum and all the processes of schooling and which students will also develop.

The **curriculum values** include:

- Excellence, aspiration and optimism;
- Equity and inclusiveness;
- Learner-centeredness;
- Openness and transparency;
- The importance of family Rwandan culture and Heritage

The **Basic values** include:

- Additional basic values for Rwandan students include:
- Dignity and integrity;
- Self-reliance;
- National and cultural identity;
- Peace and tolerance;
- Justice;
- Respect for others and for human rights;
- Solidarity and democracy;
- Patriotism;
- Hard work, commitment and resilience

5.3.2. Principles of Rwandan Competence-Based Curriculum

Rwanda envisages a relevant, coherent, consistent and flexible curriculum that responds to changing circumstances and contexts and will engender adaptability in young people so that they are prepared for an uncertain future in the local regional and global context.

The curriculum principles guide the way the curriculum is constructed but they go beyond this and have an impact on teaching and learning, on the way progress is assessed, on the way teachers are trained and on the way schools are led and managed. The identified guiding principles are the following:

Learner-centered: The curriculum must address learners' individual needs, interests, abilities and backgrounds, creating an environment where learning activities are organized in a way that encourages learners to construct the knowledge either individually or in groups in an active manner.

Competence-based: This is an approach where teaching and learning is based on discrete skills rather than dwelling on only knowledge or cognitive domain of learning. Learners work on competences through units with specific learning outcomes broken down into knowledge, skills and attitude. The student is evaluated against a set of standards to achieve before moving on. The learning activities should be learner-centered rather than the traditional didactic approach.

Inclusive: The curriculum must ensure that every individual is valued and there are high expectations of every learner. Learning must be organized so that all learners thrive, including girls, learners with disabilities, learners with special educational needs and regardless of their background.

Interconnected with crosscutting issues: The curriculum must reflect the significance of connections between different subject areas and cross-cutting issues and integrating them across years and cycles where applicable.

Flexible: This is to cater for learners' individual needs and talents and to ensure provision of a holistic education that include knowledge, skills, attitude and values and facilitates horizontal and vertical mobility within and across different education systems. This involves developing a curriculum that allows interactive teaching and learning involving all categories of learners to provide opportunities to nurture them.

Transparent and accountable: Schools, learners and communities must communicate openly and honestly about the curriculum and learning in the school, to ensure successful teaching and learning. Parents and teachers and senior management staff in schools must be engaged together in supporting teaching and learning and holding each accountable for their contributions. School management must be open to stakeholders and policy makers to support efficient administration and effective teaching

Integrated with ICT as a tool: The curriculum must enable educators and students to use ICT as a tool, to improve the quality of education in all subjects at all levels in teaching and learning practices. ICT must support the emergence of teaching and pedagogical learner-centered approaches as well as encourage research, communication and collaborative learning.

Application activity 5.3

Suppose you are a head teacher of a certain newly established school in Rwanda. You want to make a strategic plan and action plan of your school for its sustainable development. As part of the school strategic plan, propose the vision and aims of your school.

5.4. Competences and cross-cutting issues in CBC

Activity 5.4

1. Think about what is needed for a person to be a good teacher in pre-primary or primary!
2. Each 1st February is a Heroes Day in Rwanda. Some of Nyange Secondary school students are among heroes. What are the qualities that made them heroes?

a. Basic competences

These are essential competences highlighted in national policy documents. Their descriptors give an orientation about priority subjects to be taught, and the kind of learner envisaged at the end of every cycle. They are the foundation of all other competences learners develop through different subjects, learning areas.

Basic competence	**Short description** (what learners are able to demonstrate during the learning process).
Literacy	Reading a variety of texts books and other materials accurately and fast. Expressing ideas, messages and events through writing legible texts in good hand-writing with correctly spelt words. Listening carefully for understanding and seeking clarification when necessary.
Numeracy	Computing accurately using the four mathematical operations. Manipulating numbers, mathematical symbols, quantities, shapes and figures to accomplish tasks involving calculations, measurements and estimations. Use numerical patterns and relations to solve problems related to everyday activities like commercial context and financial management.

ICT and digital	Locating, extracting, recording and interpreting information from various sources. Assessing, retrieving and exchanging information via internet or cell phones. Using cell phones and internet for leisure and for money transactions. Using computer keyboard and mouse to write and store information. Using ICTs to enhance learning.
Citizenship and national identity	Relating the impact of historical events on past and present national and cultural identity. Understanding the historical and cultural roots of Rwandan society and how the local structure functions in relation to the global environment. Demonstrating respect for cultural identities and expressing the role of the national language in social and cultural context. Showing national awareness a strong sense of belongingness and patriotism. Advocating for a harmonious and cohesive society and working with people from diverse cultural backgrounds.
Entrepreneurship and Business development	Applying entrepreneurial attitudes and approaches to challenges and opportunities in school and life. Understanding obligations of parties involved in employment. Planning and managing micro-projects and small and medium enterprises. Creating of employment and keeping proper books of accounts. Taking risks in business ventures and other initiatives. Evaluating resources needed for a business.
Science and Technology	Applying science and technology skills to solve practical problems encountered in everyday life including effective and efficient performance of a given task. Reasoning in a logical manner. Using and experimenting with a range of objects and tools of science and technology and drawing appropriate conclusions.

Pedagogical competence (for TTC students teachers)	This basic competence is the backbone of professional competences that the student teacher acquires in Foundations in Foundation, Special Needs and Inclusive Education and in different Teaching Methods and Practice of subjects taught in pre-primary and primary schools. A teacher with pedagogical/professional competences will have ability to: – Effectively cater for all learners of different ages and needs – Set relevant learning activities or tasks that are age appropriate and suitable to develop subject and generic competences – Set relevant tasks for formative assessment and effectively use assessment results to improve learner's performances – Make lesson plan, scheme of work and other pedagogical documents as required – Facilitate different sessions/lessons using well selected active methods, techniques and strategies – Demonstrate creativity, problem solving, innovation skills and sense of initiative when making and using teaching and learning resources. – Use preventative and responsive classroom management strategies to create a conducive, peaceful and safe learning environment – Observe a lesson taught by a fellow teacher and provide constructive feedback; – Use methods and principles of guidance and counselling to understand learners 'emotions and detect their abilities, talents, as well as deal with behavioural problems.

b. Generic competences

Generic competences apply across the curriculum and can be developed in all subjects. They are transferrable and applicable to a range of situations including employment and it is through these competences that learners develop their higher order thinking skills (HOTs) and deepen their learning.

Generic competence	**Short description (**what learners are able to demonstrate during the learning process)
Critical thinking	Think reflectively, broadly and logically about challenges encountered in all situations. Think imaginatively and evaluate ideas in a meaningful way before arriving at a conclusion. Explore and evaluate alternative explanations to those presented by others.
Creativity and innovation	Responding creatively to different challenges encountered in life. Use imagination beyond knowledge provided to generate new ideas to enrich learning. Generate original ideas and apply them in learning situations. Demonstrate resilience when facing learning challenges.
Research and problem solving	Be resourceful in finding answers to questions and solutions to problems. Explain phenomena based on findings from information gathered or provided.
Communication	Communicating and conveying confidently and effectively information and ideas through speaking and writing and other form of communication, using correct language structures and relevant vocabulary in a range of social and cultural contexts. Comprehending language through listening and reading. Using oral and written language to discuss, argue and debate a variety of themes in a logical and appealing manner. Developing and communicating formal messages and speech appropriate to the target recipient or audience.

Cooperation, interpersonal management and life skills	Cooperating with others as a team in whatever task assigned. Adapting to different situations including the world of work. Demonstrate a sense of personal and social responsibility and making ethical decisions and judgments. Respecting others' rights, views and feelings. Having positive ethical and moral attitudes with social acceptable behaviour. Performing practical activities related to environmental conservation and protection.
Lifelong learning	Taking initiative to update knowledge and skills with minimum external support. Coping with evolution of knowledge and technology advances for personal fulfilment. Exploiting all available opportunities to improve on knowledge and skills.

c. Cross-cutting issues

Cross-cutting issues	Short description
Genocide studies	Students will need to understand circumstances leading to genocide. How to prevent it. A genocide study helps learners comprehend the role of every individual in ensuring that genocide never happen again.
Peace and values education	This unit of peace and values education, students will be taught how to live hormonally with others. How to cultivate the culture of tolerance as much as possible when someone offended them and understand the value of education as an agent tool for changes.
Gender education	As far as educational equality is concerned, teachers will learn how to promote gender in all school activities so that both boys and girls can learn from one another as a team of individuals who have the same visionIn doing so, the teacher will be required to mix Boys and girls in group activities.

Inclusive education	All learners are accommodated regardless life conditions, backgrounds and diverse learning abilities. From this perspective, they will learn how to diversify instructions to meet learners' diverse needs.
Comprehensive sexuality education	To unit aims to to equip students with knowledge and skills which will enable them make responsible choices about their sexual and social relationships…
Standardization culture	To prepare students for responsibilities to contribute the improvement of general welfare
Environmental Management	Teachers to make students aware of how environment should be maintained. To learn effectively, students should be healthy and those good health conditions happens as result of conducive environmental conditions. With that respect, students will be taught that a well cleaned classroom with an attractive layout is source of smooth learning. They will be taught of how to make a classroom more attractive in such way of getting students readiness. Additionally, they will be informed of how worthy environmental conditions impact our lives in different ways.
Financial education	Teacher to create activities involving money management, importance of money in life, how to handle/use money….

Application activity 5.4

As an English teacher in P2 you have to prepare a lesson on "Articles":

1. What are cross cutting issues you can possibly address while teaching and how?
2. What are generic competences you can possibly develop while teaching and how?
3. What are basic competences are embedded in English lessons?

5.5. How to develop competences and integrate cross-cutting issues

Activity 5.5

1. Think-pair-share: Based on knowledge acquired about active methods and techniques and generic competences, choose 3 techniques that can help to develop the following generic competences at maximum and explain how:

a. Problem solving and critical thinking

b. Creativity and innovation

c. Communication

2. Given the list of the 8 cross-cutting issues, and using primary syllabus, identify units that are related to some cross-cutting issues.

5.5.1. Developing competences

Competences are acquired over time through the cumulative effect of a competence approach to learning. It should be noted that competences are rarely developed in isolation. They are interconnected and developed simultaneously.

Active involvement in learning is critical to the success of the competence based curriculum. Learners need to be engaged in practical, contextualized and complex learning situations through which application of learning is constantly developed. It is therefore essential that teachers always have active teaching and learning techniques in mind when they are planning activities within a lesson.

Developing all competences requires teachers to adopt active techniques that encourage and enable learners to think critically, to carry out research, to solve problems, to be creative and innovative, to communicate and to co-operate.

It requires setting learning activities that will develop knowledge, skills and values as well as generic competences by adopting approaches that encourage and enable learners to engage in active learning. Active learning of this nature requires ground rules including but not limited to: active participation, discussions, constructive criticism and compliments during discussions. The teacher starts by reviewing the rules, sets a time limit, states and explains the question, collects and displays ideas, eliminates duplications and guides learners to draw a conclusion.

Example: **Primary Mathematics**

Teacher asks learners to work in groups to discuss how to fill in the next two numbers 1, 3, 7, 15…

The competences being developed are: imagination on relationships between numbers. This includes critical thinking, problem solving, cooperation, innovation, positive attitude towards a task, and communications as the learners explain how they solved the problem. The competence of mathematical operations of multiplication and addition together with the concept of sequence/pattern is being developed, and assessment is also integrated in the process. The activity also offers opportunities for assessment.

5.5.2. How to integrate cross-cutting issues

Cross-cutting issues are not standalone subjects; they cut across the entire curriculum. They are integrated in the curriculum in two ways:

- Some cross-cutting related topics are integrated in specific subjects as standalone units.

  Example 1: Units related to CSE are found in Social Studies and Science and Elementary Technology in primary and in Biology and health science in ordinary level.

  Example 2: Units related to Environment and sustainability are found in Social studies in primary and in Geography, Chemistry, etc.

- The second way of integrating crosscutting calls all teachers of different subjects to keep in mind the 8 cross-cutting issues when making lesson plan: in this way they can integrate possible cross-cutting issues depending on the learning activity's context.

  Example : In Mathematics class, after resolving a word problem about statistics on prevalence of HIV/AIDS in Africa, the teacher engages a discussion on transmission and prevention of HIV/AIDS. In this way, the teacher integrated the CSE in Mathematics.

Application activity 5.5

Choose any topic / lesson from pre-primary syllabus and give an example of a learning activity that can develop various generic competences in learners and integrate 2 cross-cutting issues. Explain how.

5.6. The role of the teacher and learner in developing competences

Activity 5.6

In groups, identify the activities of the teacher and the learners in the learning process in CBC setting.

5.6.1. The role of teachers

Teachers are not required to teach the way they were taught. They must embrace the new approaches with the aim of developing competences in the learners. This requires them to shift from teacher-centered to learner-centered methods. The following are important points to consider while implementing the competence-based curriculum:

- From the syllabus units, the teacher identifies different competences to be developed by the learners which are fostered by engaging learners through inquiry methods, group discussions, research, investigative activities and group and individual work activities.
- The teacher focuses on observation of evidence on what learners can do and then identifies any difficulties encountered by them so that appropriate strategies can be developed for those with special needs (slow learners, fast learners, learners with disabilities, talented and gifted learners).
- The teacher should take into account different cross-cutting issues and integrate them in the learning activities where applicable.
- The teacher should encourage individual, peer and group evaluation of the work done in the classroom. She/he must also use appropriate competence-based assessment approaches and methods.
- The teacher is a facilitator and a guide in the learning process. He/she must provide supervised opportunities for learners to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication and cooperation
- The teacher is an advisor and provides guidance and counselling for learners. He/she supports and comforts learners by valuing their contributions in the class activities.
- The teacher acts as educator ensures discipline, follow up learners' behaviour, and communicate with parents about the learners' performance at school.

5.6.2. The role of learners

The learners are central of the learning process. They are not empty vessels to fill, but people with ideas, capacity and skills to build on for effective learning. Therefore, the following are some of expectations for learners in a competence-based approach:

- Learners communicate and share relevant information with other learners through presentations, discussions, group work and other learner-centered activities (role play, case studies, project work, research and investigation).
- Learners are active participants and take some responsibilities for their own learning.
- Learners develop knowledge and skills in active ways.
- Learners carry out research and investigation, consulting print and online documents and resourceful people and present their findings.
- During the assigned tasks, learners ensure the effective contribution of each group member, through clear explanation and arguments, critical thinking, responsibility and confidence in public speaking.

Application activity 5.6

Create a learning activity/situation through which learners can develop competences on their own and describe the role of the teacher in that situation.

END UNIT ASSESSMENT

In TMP you went through the syllabus of pre-primary and primary school. Again read them and identify elements that justify that they are competence-based.

UNIT 6: SETTING LEARNING OBJECTIVES

Key Unit competence: Formulate SMART instructional objectives for lessons in different subjects.

Introductory Activity

In our daily life we need to set goals of what we want to achieve, we need to plan how to proceed to achieve our goals, when to achieve them, what the materials needed to achieve them and who will help to achieve them. For example, when you get up early in the morning you should have in your mind what you expect to accomplish for the whole day. This requires you to plan accordingly to achieve it.

Another example is that currently Rwandans are becoming familiar with working based on the performance contract known as " Imihigo". They set ahead what they want to achieve by the end of the year. so they need to plan and set SMART performance contract.

Based on your experience to work on target and the knowledge and skills you acquired in business plan in Entrepreneurship S3 as well what you acquired in Entrepreneurship Y1 (setting SMART goal in unit 3):

1. Discuss the importance of setting ahead goals you want to achieve.
2. What are the elements you consider while planning for what you want to achieve?

6.1. Importance of learning objectives

Activity 6.1

1. In real life situation, why do we need to have objectives?
2. Think about your own objectives in life, explain how they are set and evaluated.
3. In groups discuss why it is necessary for teachers to set learning objectives for all lessons.

Definition of learning objective

Learning objectives are statements that define the expected goal of a curriculum, course, lesson or activity in terms of demonstrable skills or knowledge that will be acquired by a student as a result of instruction. Learning objectives are also testable or verifiable statements that describe what you intend your students to learn.

Importance of learning objectives

Teachers should set learning objectives as the foundation when planning for a lesson because if someone doesn't know where he/she is going, he/she is unlikely to get there. The same is true with teaching. If a teacher doesn't know what s/he wants learners to achieve by the end of the lesson/term/year, then s/he can't design instruction that will get them there.

Learning objectives are very important in teaching and learning in the following ways:

- They provide the teacher with guidelines for developing instructional materials and teaching methods **(lesson planning).**
- They give direction to the learners and assist them to make better efforts to attain their goals (**motivation**).
- They state specifically what a student should be able to do.
- They tell students what is important: without learning objectives, it is difficult for students to know what they are supposed to be learning.
- They enable the teacher to design assessment *for* learning (**formative assessment**).
- They are also use in assessment *of* learning (**summative assessment**) in case the curriculum is objective-based.
- They ensure good assessment tools: the teachers should go through the learning objectives and make sure they assess what is prescribed in the learning objectives.
- Learning objectives encourage self-evaluation for teacher: Teachers do self-evaluation by reflecting on the degree at which the learning objectives have been achieved.

Application activity 6.1

1. In your own words what do you understand by learning objectives?
2. As student teachers discuss the importance of setting learning objectives as the starting point when planning for a lesson.

6.2. Types of learning objectives

There are three different kinds of learning objectives: general, specific, instructional or operational objectives.

6.2.1. General objectives

Activity 6.2.1

Read, analyse the following learning objectives and answer to the questions

Learning objectives:

a. To adequately teach all Maths and sciences related lessons in primary.

b. To cater for learners of different ages and needs for children's individual differences in a lesson.

c. To develop clear, logical and coherent thoughts.

Questions:

1. How much time is needed to achieve these objectives? Explain
2. Focusing on underlined verbs, are these objectives clear about the expected behaviour/ action to be achieved? Who may be the subject for these verbs?

General objectives

General objectives are overall objectives which indicate what to be achieved through out the curriculum or a course (long term goals). They show the right direction, but they do not explain how or when you have arrived there. They may be teacher- centred rather than student-centred.

Characteristics of general objectives

- Use of verbs that expresses a complex, vague and an abstract action which cannot be seen directly.
- Content lacking precision**,** without limits or vast.
- These objectives focus on course or teacher rather than the students' point of view

Example of general objectives

- To acquire basic mathematics concepts required to solve everyday life problems;
- Model good values and professional ethics in the teaching profession

Application activity 6.2.1

Think of a topic to teacher at any level, you design general learning objectives and specify their characteristics.

6.2.2. Specific objectives

Activity 6.2.2

You are given the following general objective for student teachers in SME option "adequately teach all Math and sciences or languages or social studies related lessons in primary". Make a breakdown of the objective by listing the required prior knowledge and skills to achieve that objective

Specific objectives

Specific objectives are intermediate learning objectives which, as they are achieved, contribute gradually to the attainment of a general objective (NZABALIRWA.W , 2004).

They have the following characteristics:

- A verb which expresses simple, precise, visible action or observable behaviour
- Precise, limited or unlimited content on which action is exerted.
- The objective is learner-centered:

Examples of specific objectives

A student teacher will be able to:

- Set relevant tasks for formative assessment

- Use assessment results to improve learner's performances
- Select appropriate active techniques to teach a mathematic lesson in lower primary strategies

Application activity 6.2.2

Set 3 specific objectives from one general objective you have set previously.

6.2.3 Operational/instructional objectives

Activity 6.2.3

Read, analyse the following objectives and identify similarities and differences with general or specific learning objectives with focus to: the time needed to achieve the objective, the specificity level, the limitation of the scope.

Objective 1: Using lesson plan models, upper primary syllabus and textbooks, Student teachers in Science and Math Education Option will be able to make a lesson plan for an experimental-based primary science lessons following the steps to teach such lessons and the lesson plan format in 120 minutes.

Objective 2: Given a box of 20 flash cards with names of known animals and 6 flash cards with category of animal locomotion ways, P4 learners will be able to match correctly animals and their locomotion way in 10 minutes.

Characteristics of quality operational / learning objectives

An operational learning objective also called instructional objective is a short-term learning objective obtained from the breakdown of general objective into smaller learning objectives. It is set by a teacher for a specific lesson, to be taught to a specific class within a well-defined context.

The operational learning objective is well defined by the following five characteristics:

- It is expressed in terms of **student/ learner**: it determines **who** you're talking about
- Teachers have to avoid concentrating on what he/she teaches, but on changes he/she wishes to bring about in his students.

- It must be formulated in terms of **behaviour/action/competence**: expressed by an **action verb**, it shows the desired behavior from the learners.
- It has to precise the **content** to be taught or to be learnt
- It describes the **conditions or circumstances** under which the expected behaviour must be manifested. These are working conditions and means to be used by the learners **during assessment** time when they are asked to accomplish the task (with or without a specific material, timing, with or without support,..)
- It defines the **criterion for assessing the performance**: this is **the standard of performance**. Criteria for acceptable performance can be qualitative when they describe various qualities that should make performance satisfactory; or quantitative where they are translated into score (marks/).

Robert MAGER tried to sum up the above characteristics of operational learning objective using **ABCD model** of writing objectives**.** In **ABCD** model a good objective answers the following questions:

- **Audience:** who will be performing the behaviour? It must be addressed to the learner.
- **Behaviour:** What behaviour should the learner be able to show? It must specify what learners will do.
- **Condition:** Under what conditions do you want the learner to be able to do it? It must specify what they will use: equipment or tools that may (or may not) be utilized in completion of the behaviour,
- **Degree:** States the standard for acceptable performance (time, accuracy, proportion, quality, etc)

An adaptation of Robert MAGER models is ABCCD (Audience-**B**ehavior-Content (what learners will do)- **C**onditions-**D**egree) to include the content.

In general, an operational objective must be **"SMART"** (Bartle, 2007)

- **S:** Specific: clearly and precisely expressing what students are expected to do after the lesson.
- **M:** Measurable**:** expressed in behavioural and verifiable terms
- **A:** Achievable/agreed/acceptable**:** expressed in a predictable term
- **R:** Realistic: expressing what is possible within the given time and means available.
- **T:** Time bound**:** specifying when the achievement or target can be realized.

Example:

When setting an operational objective it is better to respect the order in which the components are listed in the example below:

- Given a sheet of paper, a pencil, a pair of compasses and a protractor (**condition/situation**), the learner should be able to (**learn**) construct (**action**) a right- angle triangle (**content**/subject matter) accurately (**standard of performance**) in 10 minutes.
- Using charts illustrating the method of purification, water from river, required materials for each method and small containers P5 learners will be able to correctly practice the methods of purification in 20 minutes.
- "Having their rulers and pencils, learners will be able to draw a straight line correctly" in 5 minutes.

Application activity 6.2.3

Set an operational objective from each of the three specific objectives you have set previously and show that it is operational by highlighting its 5 components.

6.3. Learning domains and their levels of taxonomies

6.3.1 Levels of cognitive domain (Bloom)

Activity 6.3.1

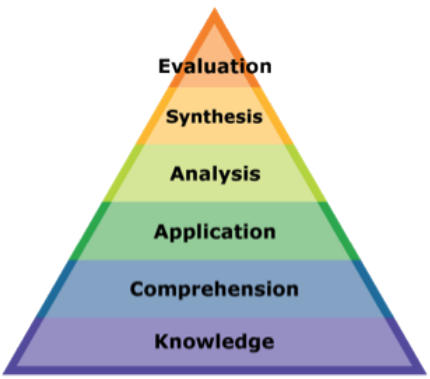
Arrange the following tasks from the lowest to the highest order of thinking.

1. Name the capital city of Rwanda.
2. Create a poem about your school.
3. Summarize the text into two paragraphs.

The cognitive domain refers to knowledge and mental skills: an individual idea, thoughts, knowledge interpretation and understanding about himself and his environments.

While there are many different ways of understanding how learning occurs, and there have been critiques of Bloom over the years, Bloom's Taxonomy of Cognitive domain is still widely used and adapted by educators at all levels to create measurable learning objectives for students.

According to Bloom, cognitive development can be organized into different levels, and "**lower-order"** (or less complex) thinking skills form the foundation for "**higher-order**" (or more complex) thinking skills. The relationships between these different levels of skills and knowledge often are represented in this diagram below.



Source: http://cehdclass.gmu.edu/ndabbagh/Resources/IDKB/bloomstax.htm

Adaptation of Bloom's Taxonomy

In the decades since Bloom first introduced his taxonomies, his work has been the source of both inspiration and criticism. In 2000, **Anderson** and **Krathwohl** offered a revision of the original taxonomy.

They made the following changes:

- By removing the word, **knowledge**: since all of the cognitive processes listed are **versions** of knowledge (increasingly sophisticated or expert versions of knowledge we might even say), the revised version seems more accurate.
- By converting the levels to verbs, which underscores that these levels involve **actions**, cognitive skills to be demonstrated, rather than states of being.
- Culminating in **creating**, moving **evaluating** down a level. This strikes many disciplinary experts as appropriate. After all, until one can evaluate gaps in existing research, for example, it is difficult to create new knowledge for the field.

The pyramid of the revised Bloom's taxonomy by Anderson is here below:

Source: https://www.utica.edu/academic/Assessment/new/Bloom tx revised combined.pdf
https://www.thoughtco.com/blooms-taxonomy-application-category-8445

This new taxonomy reflects a more active form of thinking and more accurate. The new version of **revised Bloom's Taxonomy**, with examples and verbs is shown.

Category	Examples, keywords/verbs, and strategies for learning (activities)
Remembering: Recall or retrieve previous learned information.	**Examples**: Recite a policy. Quote prices from memory to a customer. Recite the safety rules. **Verbs**: define, describe, identify, know, label, list, match, name, outline, recall, recognize, reproduce, select, state. **Strategies**: book marking, flash cards, rote learning based on repetition, reading.
Understanding: Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	**Examples**: Rewrite the principles of test writing. Explain in one's own words the steps for performing a complex task. Translate an equation into a computer spread sheet. **Verbs**: comprehend, convert, defend, distinguish, estimate, explain, extend, generalize, give an example, infer, interpret, paraphrase, predict, rewrite, summarize, translate **Strategies**: create an analogy, participating in cooperative learning, taking notes, storytelling, Internet search
Applying: ability to use learned material in new a concrete situations.	**Examples**: Use a manual to calculate an employee's vacation time. Apply laws of statistics to evaluate the reliability of a written test. **Verbs**: apply, change, compute, construct, demonstrate, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, solve, use **Strategies**: collaborative learning, create a process, blog, practice
Analyzing: Separates material or concepts into component parts so that its organizational structure may be understood.	**Examples**: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. **Verbs**: analyze, break down, compare, contrast, diagram, deconstruct, differentiate, discriminate, distinguish, identify, illustrate, infer, outline, relate, select, separate.

	Strategies: Fishbowls, debating, questioning what happened, run a test
Evaluating: Make judgments about the value of ideas or materials.	**Examples**: Select the most effective solution. Hire the most qualified candidate. Explain and justify a new budget. **Verbs**: appraise, compare, conclude, contrast, criticize, critique, defend, describe, discriminate, evaluate, explain, interpret, justify, relate, summarize, support **Strategies**: survey, blogging
Creating: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	**Examples**: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome. **Verbs**: categorize, combine, compile, compose, create, devise, design, explain, generate, modify, organize, plans, rearrange, reconstruct, relate, reorganize, revise, rewrite, summarize, tell, write. **Strategies**: Create a new model, write an essay, network with others

source: http://www.nwlink.com/~donclark/hrd/Bloom/original_cognitive_version.html

Application activity 6.3.1

As a student teacher on your own choice, design tasks that require students to go through all six levels of revised Bloom taxonomy.

6.3.2 Levels of affective domain (Krathwhol)

Activity 6.3.2

MUGABO, has spent 3 days without coming to school, on Friday when he comes back, his teacher asked him the reasons for his absence and replied that his uncle has passed away last Sunday. When they listened it all the classmates of Mugabo felt sorry about him.

1. Why Mugabo's classmates felt sorry to him?
2. If you were one of Mugabo's classmates, how would you react to his sorrow?

Affective domain

It includes the manner in which we deal with things emotionally, such as feelings, attitudes, values, appreciation, enthusiasms, motivations and attitudes. It has five levels as described in the table below:

Category	Example and Key Words (verbs)
Receiving Phenomena: Awareness, willingness to hear, selected attention.	**Examples**: Listen to others with respect. Listen for and remember the name of newly introduced people. **Verbs**: acknowledge, ask, attentive, courteous, dutiful, follow, give, listen, understand
Responds to Phenomena: Active participation on the part of the learners. Attend and react to a particular phenomenon. Learning outcomes may emphasize compliance in responding, willingness to respond, or satisfaction in responding (motivation).	**Examples**: Participate in class discussions. Gives a presentation. Questions new ideals, concepts, models, etc. in order to fully understand them. Know the safety rules and practice them. **Verbs**: answer, assist, aid, comply, conform, discuss, greet, help, label, perform, present, tell

Valuing: The worth or value a person attaches to a particular object, phenomenon, or behavior. This ranges from simple acceptance to the more complex state of commitment. Valuing is based on the internalization of a set of specified values, while clues to these values are expressed in the learner's overt behavior and are often identifiable.	**Examples**: Demonstrates belief in the democratic process. Is sensitive towards individual and cultural differences (value diversity). Shows the ability to solve problems. Proposes a plan to social improvement and follows through with commitment. Informs management on matters that one feels strongly about. **Verbs**: appreciate, cherish, treasure, demonstrate, initiate, invite, join, justify, propose, respect, share
Organization: Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system. The emphasis is on comparing, relating, and synthesizing values.	**Examples**: Recognizes the need for balance between freedom and responsible behavior. Explains the role of systematic planning in solving problems. Accepts professional ethical standards. Creates a life plan in harmony with abilities, interests, and beliefs. Prioritizes time effectively to meet the needs of the organization, family, and self. **Verbs**: compare, relate, synthesize
Internalizes Values (characterization): Has a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most important characteristic of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).	**Examples**: Shows self-reliance when working independently. Cooperates in group activities (displays teamwork). Uses an objective approach in problem solving. Displays a professional commitment to ethical practice on a daily basis. Revises judgments and changes behavior in light of new evidence. Values people for what they are, not how they look. **Verbs**: act, discriminate, display, influence, modify, perform, qualify, question, revise, serve, solve, verify.

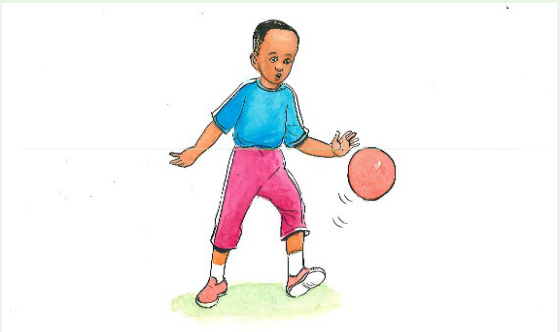
From: http://www.nwlink.com/~donclark/hrd/Bloom/affective_domain.html

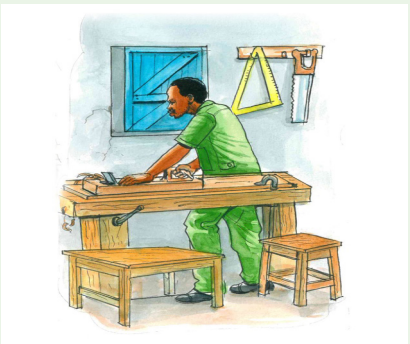
Application activity 6.3.2

1. Describe the five levels of affective domain
2. Formulate an instructional objective that aims to develop the levels of affective domain

6.3.3 Levels of psychomotor domain (Dave)

Activity 6.3.3





Observe the above pictures and answers the questions:

1. What are they doing?
2. What types of abilities are being involved to perform the task?
3. Give examples of school or everyday activities or tasks that develop these types of abilities.

Psychomotor domain:

The psychomotor domain refers to the use of physical motor skills, coordination and physical movement. The psychomotor domain has been revised over the years by Dave (1970), Harrow (1972), and Simpson (1972). Dave is the probably the most commonly referenced and used psychomotor domain interpretation. However, each has its uses and advantages.

The following is Dave's model (1975)

Category	Example and Key Words (verbs)
Imitation: Observing and patterning behaviour after someone else. Performance may be of low quality.	**Examples**: Copying a work of art. Performing a skill while observing a demonstrator. **Key Words**: copy, follow, mimic, repeat, replicate, reproduce, trace
Manipulation: Being able to perform certain actions by memory or following instructions.	**Examples**: Being able to perform a skill on one's own after taking lessons or reading about it. Follows instructions to build a model. Key Words: act, build, execute, perform

Precision: Refining, becoming more exact. Performing a skill within a high degree of precision	**Examples**: Working and reworking something, so it will be "just right." Perform a skill or task without assistance. Demonstrate a task to a beginner. **Key Words**: calibrate, demonstrate, master, perfectionism
Articulation: Coordinating and adapting a series of actions to achieve harmony and internal consistency.	**Examples:** Combining a series of skills to produce a video that involves music, drama, colour, sound, etc. Combining a series of skills or activities to meet a novel requirement. Key Words: adapt, constructs, combine, creates, customize, modifies, formulate
Naturalization: Mastering a high level performance until it becomes second-nature or natural, without needing to think much about it.	**Examples:** Maneuvers a car into a tight parallel parking spot. Operates a computer quickly and accurately. Displays competence while playing the piano. Michael Jordan playing basketball or Nancy Lopez hitting a golf ball. **Key Words**: create, design, develop, invent, manage, naturally

Learning domains and learning objectives

One of the characteristics of a specific or instructional objective is the "behavior" which refers to the knowledge or skills that the learner should demonstrate in any of the domains of learning: cognitive, psychomotor or affective. Thus, depending on the domain of learning there are three types of learning objectives:

- **Cognitive learning objectives**: having to do with knowledge and mental skills

  Example: The students will be able to solve four out of five linear equations, without the aid of outside materials, in one hour.

- **Psychomotor learning objectives:** having to do with physical motor skills

  Example: The students will demonstrate their ability to serve a volley ball with accuracy by completing eight out of ten overhand serves within the standard court lines.

– **Affective learning objectives**: having to do with feelings and attitudes. Example: The students will demonstrate their acceptance of the rule "quiet while others speak" by not talking during any of the two minute speeches.

Conclusion:

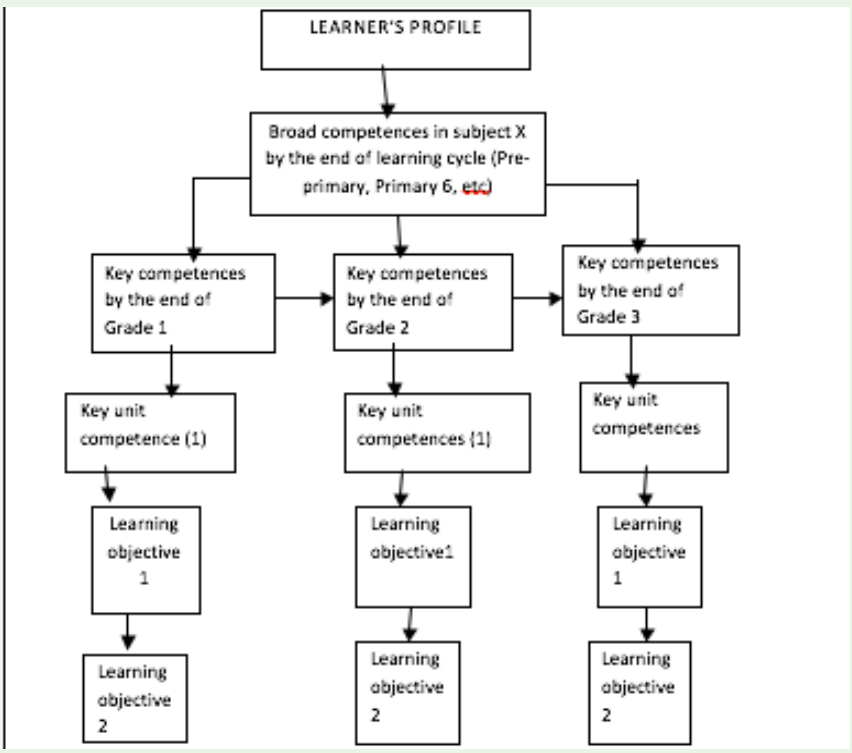
Learning domains are broad categories. Each one can be broken down into different levels of skills and knowledge, some simpler and some more complex as shown in the previous details above. Therefore, the teachers should set objectives that target to develop students' abilities in all domains, as they are interrelated.

Application activity 6.3.3

Using the Primary Physical Education syllabus or any other subject, formulate instructional psychomotor objective.

6.4. Learning objectives and competences in CBC

Activity 6.4



Question

Read the chart above and identify the relationship:

1. Between different competences in Rwandan competence-based syllabi.
2. Between competences and learning objectives in Rwandan competence-based syllabi.

The Competence Based curriculum also called Curriculum for Sustainable Development aims to develop the knowledge, skills, attitudes and values necessary for Rwandans to meet the challenges of the 21st century. Competences in different subject syllabi are at different levels and were designed based on the leaver's profile. These competences are at different levels as shown by the chart presented above.

Learner's profile

This is a description of learner's competences (in terms of knowledge, skills, attitudes and values) by the end of a learning cycle such as pre-primary, primary, lower secondary, and upper secondary.

Broad Competences

These competences are built throughout the learning cycle period. Assessment of achievement of these competences is done through National Exams at the conclusion of Primary 6, Secondary 3, and Secondary 6.

Key competences at the end of each grade level

These competences are built during one grade level within a learning cycle. The end-year assessment is designed based on these competences to ensure learners have achieved the necessary competences and qualify for advancement or need further remediation.

Key unit competences

Key unit competences are stated throughout each subject syllabus. Syllabi are divided into units of study to organize learning and encourage teachers to focus on specific content related to learners' daily life and the cross cutting issues. Each unit aims to develop specific competences which are evaluated through end unit assessment using integration situations. Teachers should design an integration situation to evaluate learners' ability to combine the acquired knowledge, skills, attitudes and values required to solve problems in academic, professional, and daily life situations. Learners with poor performance in integration situations should be directed toward remediation activities, as appropriate, before moving to the next unit.

Learning objectives

Learning objectives target specific knowledge, skills, attitudes and values that learners should gain within lessons to progressively build the key unit competences. For each lessons teachers set appropriate instructional/ operational objectives based on learning objectives found in the syllabus. Teachers use appropriate discovery activities and active techniques to help learners acquire generic competences, knowledge, skills, attitudes and values. At the end of the lesson, assessment tasks inform teachers on the achievement level of instruction objectives.

Application activity 6.4

What is the role of learning objectives in CBC?

END UNIT ASSESSMENT

1. Define learning objectives.
2. What will happen if a teacher starts teaching without having learning objectives?
3. Describe the types of learning objectives.
4. Distinguish different learning domains.
5. Create a well formulated and SMART operational objective and indicate its main parts.
6. From the list of objectives provided below, make 3 groups: General objectives, specific objectives, operational/instructional objectives. Present your answer using the table below:

Group 1: General objectives	Group 2: Specific objectives	Group 3: Operational objectives

List of objectives

a. To develop clear, logical and coherent thought.

b. Given a sheet of paper, pencil, a pair of compasses and a protractor the learner should be able to construct a right-angle triangle accurately in 10 minutes.

c. To communicate orally in English

d. To differentiate formal, information, and formal education

e. Given a ruler, a paper, a pencil and protractor, learners should be able to draw a square with 90 degrees of angles accurately

f. To master the basic concepts of math and use them correctly to solve problems encountered in everyday life

g. To explain the main parts of a lesson plan

h. To solve first degree reducible equations and inequalities

i. To identify features of relief.

j. By using computer, learners will be able to make a clear and attractive power point presentation with animations.

k. To help learners to understand and recognize the importance of mathematics in everyday life.

l. To use correctly 'although' in the sentence

UNIT 7: MAKING AND USING EDUCATIONAL MATERIALS

Key unit competence: Demonstrate creativity and commitment when making and using teaching and learning resources.

Introductory Activity

When you enter various pre-primary and primary schools countrywide, you can see different objects in classrooms, some are displayed on the walls and others are kept in boxes, cupboards, envelops...

Suppose you are a teacher in a given primary school, what do you think are the reasons of having those objects in the classroom not only for teachers, but also for the learners?

7.1. Definition and types of Teaching and Learning Resources

Activity 7.1

Move around the school compound and collect the important materials/ objects that can be used in teaching and learning activities.

7.1.1. Definition

Before planning and delivering a lesson, resources and materials should be identified at school or in the surrounding environment according to the lesson.

Teaching and learning materials: This term refers to the broad range a variety of educational materials that teachers and learners use to achieve specific learning objectives and competences. Examples: student's book, teacher guides, syllabus, lattes, maps, flash card, microscope, lab equipment, chemicals, blackboard, wall charts, ECD Kit,…).

Teaching and learning resources: This term is broader than teaching and learning materials because it includes not only materials but also human resources. Example: for a lesson on HIV/AIDS, the teacher can invite a medical doctor.

7.1.2. Types of learning and teaching materials (LTMs)

Teaching and learning resources can be classified in different categories depending on the criterion considered. In this textbook they have been classified according to their ways of accessibility, their nature, their cost and senses involved.

a. Types of LTMs according to the way of accessibility

- **Gathered/collected teaching and learning materials:** These are materials that can be collected from environment such as sticks, stones, sand, water…
- **Visited/observed in their natural or working environment:** due to their nature or depending on lesson objectives, a field study is conducted to allow students to observe things or people in their authentic environment/contexts.
- **Manufactured or man-made materials:** These are materials that are made by human being. They can be manufactured in industries/ factories: Boxes, plastic materials, papers, cupboard, mat, books, pens, rulers. This category includes the teacher-made materials.

b. Types of teaching and learning materials according to their nature/ originality

- **Concrete /real teaching and learning materials**

  In this category fall actual or real objects found in environment. To be used in learning and teaching process they can be collected or visited/ observed in their natural environment depending on their nature or the lesson objectives. Examples: trees in the forest, water in river, people in different working environment, different plants, animals, tools such as clothing, food packaging, plastic bottles, domestic items, toilet items, etc.

  Concrete materials are the most important learning and teaching materials because they allow the maximum concretization as learners are in front of reality and use multiple senses.

- **Semi-concrete teaching and learning materials:**

  These include representations of the real/concrete objects. These are used in the absence of concrete teaching learning materials. Examples: as film, pictures, charts, maps, photographs, drawings

c. Types of teaching and learning materials according to their cost

- **None cost materials**

  These are materials which are obtained without spending money. These are for example: soil, stones, sticks, bottle tops, ropes, plants, feathers, mats, sorghum steams, flowers, sand, water, seeds, used up clothes, banana fibres, grass, trees…

- **Low cost materials**

  These are cheap materials such as rice sacks, plastic bottles, papers, pens, fruits, vegetables, animal waste, domestic objects, sugarcane, tea, nails, glue, pair of scissors, eggs, food stuff, salt, torch, lamp, candles, envelops, textbooks, resource person, picture books, flashcards, posters, maps, charts, calendar, cut-outs, picture cuttings, magazines, calendars, etc.…Most of teacher-made materials are in this category.

- **High cost materials**

  These are expensive materials like computers, projectors, digital, television, software, laboratory equipment, radios, smart board, smart phones, mobile phones, CD-ROMs, flash discs, digital camera, Audio files, videos, animations, internet/websites, PowerPoint presentations, Microsoft Office documents, professionals (doctors, lawyers, engineers).

d. Teaching and learning materials according to the sense involved

- **Visual materials**

  These types of TLMs involve the sense of vision. They stimulate the visual impulses. Examples: illustrations, photos, textbooks, story books, pictures books, wall charts.

- **Audio materials**

  These LTMs stimulate the hearing sense of learner. Example: telephonic conversation, audio discs/tapes, radio broadcast.

- **Audio-visuals materials**

  These types of LTMs are the projected aids, which use both auditory and visual senses to enhance learning. Examples: Computer, Television, Video discs/cassettes, etc.

Application activity 7.1

1. Observe and explore teaching and learning resources available in TRC and classify them according to different types.
2. Propose at least two examples of materials that can help learners develop the following skills (give 2 examples for each skill):
   a. Observation
   b. Manipulation
   c. Listening

7.2. Importance of teaching and learning materials/ resources

Activity 7.2

When teaching subtraction of numbers with one digit. Gatera a P1 teacher uses sticks to illustrate and concretize the lesson.

Do you think that it is necessary to teach this simple lesson using materials such as sticks?

Teaching and learning materials are important for the following reasons:

- Motivation: Students can learn better when they are motivated properly through diverse teaching and learning resources. They also contribute to create a conducive learning environment. They stimulate and sustain interest in learning.
- Concretization or Clarification: Through Teaching and Learning Resources, the teacher clarifies the lesson content more easily. They provide concrete examples for conceptual thinking. They make easy to teach some concepts that cannot be easily understood like scientific concepts. Learners are able to visualize and concretize their experiences.
- Experiential learning: Teaching Learning Resources provide direct experience to the learners thus, enhance their skills and attitudes.
- Retention/memorization: Proper use of Teaching and Learning Resources help to retain more concepts permanently which makes learning more effective.

- Classroom participation/interaction: Teaching and Learning Resources make the classroom lively and active. They encourage active participation by learners.
- Teaching and learning resources promote the development generic competences: critical thinking, cooperation, creativity, innovation and problem solving.
- They make explanations easier during the teaching and learning process, hence, making it easier for learners to understand various concepts.
- Teaching and learning materials enhance multi-sensorial learning for learners. They help to overcome the limitations of the classroom and make what may be inaccessible in classroom available.
- They provide first-hand experience with reality of the physical and social environment.

Application activity 7.2

Based on this Chinese proverb translated in English" I hear… I forget, I see…I remember, I do… I understand". Justify the use of teaching and learning materials or resources in Teaching and learning process.

7.3. Qualities of teaching and learning resources

Activity 7.3

Suppose you are a teacher in a given pre-primary or primary school and you want to make teaching and learning materials for your lesson. How do you wish you materials would be?

From the available resources, a teacher has to select suitable materials for the particular learning activity. The following criteria proposed by Mwangi (2010) will help the teacher to select suitable teaching and learning resources:

- **Availability:** Materials that are locally available are highly recommended as are opposed to those which are bought. This is due to their simplicity in repair or replacement as the need may arise. Locally available resources give meaning to learning as learners are familiar with them.
- **Readability/visibility**: The teacher should select/develop that all learners are able to see or read (Braille or big print), which are big enough for visibility.

- **Relevance:** Materials for the children should be relevant and age appropriate. They should also be related to the lesson objective. This is because learning experiences given to children must work towards the realization of the stated objectives**.** Irrelevant materials to the content may lead to the failure of lesson (objective not achieved)
- **Affordability/cost effectiveness**: The cost of learning materials should be minimal as possible. Local materials should be emphasized, as they are cheap and easily accessible, and children will tend to identify more with them.
- **Accessibility**: Resources/materials that easily and always available/ accessible in the local community.
- **User friendliness**: Materials should be within the ability of the learners to use. They should not complicate f the learners. They should be suitable for the learner's level of development and easy to manipulate, Materials that learners are able to interact and play with. Materials that learners with special educational needs can access.
- **Durability**: This refers to the period of time that a given teaching and learning material/resource can be used before wearing out or requiring replacement. Durable materials cut down the cost of procurement, replacement and maintenance. It creates the opportunity to develop more to ensure they are always enough for all children.
- **Multi-purpose/functionalism**: Is the use of single materials in different (across) learning activities/subjects and classes to develop a variety of skills. This promotes cost savings.
- **Lesson to be taught and activities**: The resources should apply to the lesson and activities.
- **Multi-sensory:** A good teaching and learning materials should develop more than one sense.
- **Storages**: Materials require good storage facilities. If they are not well stored they may not last long and may easily get lost. The quantity of learning materials selected/developed for storage determines the space desired.
- **Safety**: Outdoor and indoor materials should be well taken care of to avoid accidents or injuries. Materials should not provoke the dangers to children, materials should be well cared for so that children cannot break them.
- **Age appropriateness**: Different age groups have different needs and interests for which the teacher should aim at developing when selecting materials.

Teachers and caregivers should put into consideration the specific learning skills and opportunities that should be developed and the objectives to be achieved. To do this successfully, teacher should develop age appropriate materials and consider the children's developmental age and abilities.

- **Variety**: Teachers should come up with more materials that can develop the same skills. Provision of a variety of materials is the best way to keep learners working as they require exploring, discovering and manipulating more. A variety of materials helps learners to develop concentration and improves their attention.

Application activity 7.3

Visit the TRC. Select any five teaching and learning materials available in your TRC and assess the quality of the selected materials against the learnt criteria. Explain if the material meet the requirements or not.

7.4. Where and how to get teaching and learning resources?

Activity 7.4

Cyuzuzo a P3 teacher, when asked how she makes choice of teaching and learning resources, she replied she first select those which are available at home, the next choice focuses on those available in the environment, whereas the last choice concerns those made in factory.

How do you judge the approach of teacher Cyuzuzo?

Development of teaching and learning materials for use in the instruction should be a collective responsibility of the teachers, learners and the community at large. Teaching and learning materials can be obtained through the following ways:

Government: the government through responsible institutions (REB) spends money to produce, purchase teaching learning resources that are then distributed in public and government-aided schools. These are for examples: textbooks, maps, dictionaries, laboratory equipment, chemicals, Science Kits, laptops, chalk, etc. Some materials are purchased by the schools.

Improvisation/teacher-made: teachers can use locally available (process of utilizing already existing) materials to teach or use them to make/develop the teaching aids. These include the use of seeds, flowers, plants, woods, papers, strings, nails...which can be used to make colours or directly use empty containers to carry out an experiment.

For Kahiga (2015), improvisation serves the following roles:

- It helps in promoting the concept of creativity/innovation among learners and teachers.
- It enables many teachers to use available resources without having to rely on the few commercial ones.
- It helps to ensure that the reality of implementing the concept of maximum use of equipment and facilities is achieved.
- Due to high cost of teaching materials and inability of some schools in acquiring them, improvisation can be used to make the provision of these resources a reality.
- It assists in overcoming issues related to lack and inadequacy of resources.

Collection of LTMs: available materials can be collected from school compound or the home environment by learners and teachers.

Parental involvement: parents can be invited for material making days. Such days are organised by the Head Teacher and facilitated by teachers for material provision. The teacher gives professional advice on how to develop the appropriate materials which meet all the required characteristics. Teachers and learners can also make the teaching learning materials in their respective classes.

Inviting resource person: this is more knowledgeable person in making a particular material. The school may invite him/her to show teachers how to make that particular material.

Donations: local and international organizations, parents and other volunteers can offer some materials to the school of their environment.

Borrowing the materials: one school can borrow teaching and learning available another school. Schools or teachers can share teaching and learning resources/materials.

Note that the teaching and learning resources/materials may be distributed from:

Application activity 7.4

John is primary teacher in one of primary schools. His school does not have money to buy enough resources; consequently there are some units in the syllabus that John does not teach due to the shortage of resources in the school. He decided to teach those units once he gets resources from the school.

1. Do you agree with John's decision?
2. What do you think are the skills does John miss?
3. Advise John about the strategies of getting resources

7.5. Making teaching and learning materials

Activity 7.5

Move around the school compound and collect materials based on their types and subjects in your option.

Depending on abilities (creativity, imagination and innovation) and the will of the teacher to make teaching and learning materials for his/her class, teacher with the students can make varied teaching materials needed in teaching and learning process.

The school compound and home environments are rich with the objects that can be used for this purpose. It has been proved that learners enjoy seeing classroom walls covered by the materials they made by themselves.

A good teacher involves his/her learners in materials making activity. These materials in turn enable teacher to teach effectively. Material production can be done not only at school, but also at home as homework or a project. Some examples of the materials that learners can make for themselves from objects gathered from environment are the following: models, pictures, charts, car, television from cartons, balls using banana fibres...

Here below are examples of the steps of making a chart from rice sack

- Draft your chart on paper: Before a learner makes/draws a chart on proper paper or rice sack, he/she should draft it on the paper so as to avoid being mistaken at the beginning.
- Find a clean rice sack or manila: when a learner needs to make a chart, they should be provided with clean sack or manilla paper in which the chart he/she wants will fit. Rice sacks and manila papers are found at the market. They need to be clean write and have writing on them.
- Cut the rice sack or manila to the size you need. This requires the learner to have a pair of scissors, laze blade, knife…
- Burn the edges of the sack with a candle as they are made of plastic. This to avoid the extremities of the rice sack to be damaged.
- Draw your picture on to the sack or manila with pen, permanent marker or pencil. Seriously, the learner puts the picture he/she wants on the sack or manila paper.
- Add color to your picture, using permanent markers and crayons if you have them. After drawing his/her picture, the can use/add varied colors in order to make it attractive.
- Cover a mistake with paper, scotch or Blanco: Any mistakes made when drawing should be covered.
- Display your rice sack in the classroom, this will create an attractive learning environment for the students and help them to remember things from their lessons.
- Take care of your rice sack and store it in a good place. Try to organize a way of storing your teaching resources so that they are not damaged, you can access them easily, and you can share them with other teachers, you can use them again and again for many years.

Application activity 7.5

Make enough Teaching and learning materials using collected and low cost materials using the pre-primary or primary syllabus.

7.6. Management of teaching and learning resources

Activity 7.6

Chantal is a teacher in one of primary schools in Gisagara district. She is a creative and innovative teacher in terms of material production. She involves her learners in developing teaching and learning materials of her class and beyond. However, all the materials teacher and learners make are immediately kept in the cupboards. You cannot see Chantal in classroom using even one the materials already made. When the Head Teacher entered the class for lesson observation, the walls were empty.

What are the strengths and weaknesses of teacher Chantal? Provide pieces of advice to teacher Chantal for improvement.

For effective management of the LTMs acquired through different ways, it is important they are used, well displayed, stored and maintained.

7.6.1. How to display the TLMs?

A good display of the LTMs in classroom is part of the learning environment. The way materials are displayed can positively or negatively affect students' learning. Materials are displayed on the walls, tables, mats, etc. They should therefore be displayed following some guidelines and using relevant techniques.

- **Some techniques for displaying LTMs**
  - **Wall displays**: Teaching and learning materials are hung on walls. They are properly fixed on the walls using the nails. This avoids the classroom to be empty.
  - **Hanging**: This involves attaching the tops of material to a wire or thread hangs from the classroom (materials are suspended in the classroom).
  - **Soft board**: These are fixed to the walls of the classes. The teachers can use glue and thumb pins to attach charts of family members, colours, shapes, number cuttings, children's works, photographs and flash cards.

- **Shelves**: They are open places to keep materials for display and also storing. This technique can be used to display three dimensional materials like models, dolls, toys, blocks, bottle tops. Some of these materials can also be placed in cupboards.
- **Learning centres**: They also called centres of interests or learning corners. They can be established in corners of the school or the classroom depending on the purpose. Display of concrete materials is done better in learning corners. The teachers should help in setting up these centres so that the activities are learner-centred rather than teacher-centred.

- **Some tips for displaying**
  - Avoid to cover every possible space: leave some wall space to avoid an overstimulating classroom.
  - Put two dimensional pieces (pictures) at learners' eye level: hanging things above their heads can sometimes be distracting and annoying
  - Choose the right space: consider the nature, the frequency in use, the amount of space needed, the learners 'age.
  - Keep displays current: *After displays have been up for a couple of months, pupils generally stop looking at them. Be vigilant and leave them out when they are no longer relevant.*

7.6.2. Storing and maintenance of teaching and learning materials

- **Maintenance of LTMs**
  - Teaching and learning materials should be checked for the signs of weakness and damage and repaired immediately or removed from user place.
  - Materials should be cleaned regularly to remove dust and dirt so as to keep them in good conditions.
  - Learners should be taught how to use materials correctly and involved in their maintenance. This will prevent deterioration and loss of materials.
  - The teacher should strive to ensure that teaching and learning materials last for long since frequent replacement of learning and teaching materials is expensive.

- **Some tips for storing LTMs**
  - The store should be accessible to the learners to enable them pick up materials whenever they want to use them

- After teaching and learning process, material should be stored properly. Teach students how to tidy up after using materials and assist them when storing them.
- Store small materials in folders, large envelops or boxes.
- Store charts and similar-sized materials in cup boards, socks and cartons after arranging them.
- Use simple reference models such as labelling envelops, boxes, shelve parts and other containers.
- Store LTMs in a secure room. Use shelves and cupboard.
- Keep the material in the right place: some equipment need separate rooms for security, safety and pedagogical purposes.

Application activity 7.6

1. What do you think are the advantages of storing and maintaining teaching and learning materials properly?
2. Discuss the techniques of displaying the teaching and learning materials?
3. Display the LTMs produced and provide required explanations as your classmates pass through.

END UNIT ASSESSMENT

1. Referring to the qualities of good teaching and learning materials, individually make three teaching and learning materials of your choice.
2. Do you find teaching and learning materials useful? Give arguments to support your views.
3. Discuss the maintenance of teaching and learning materials.
4. You have been invited to train the community on the ways of developing teaching and learning resources. What are the key qualities of those resources to focus on?
5. Due to shortage of teaching and learning materials in most of schools, teachers are called for improvisation. Discuss this statement with some reasons.

UNIT 8: LESSON PLANNING

Key Unit competence: Create a quality lesson plan with clear objectives, engaging techniques and with a variety of materials.

Introductory Activity

Read the scenario below and answer the questions about it:

Teacher HABINEZA was found teaching without a lesson plan . He told the Headmaster that he has the lesson map in his mind so that he doesn't need it on a paper.

1. What advice can you give to teacher Habineza?
2. In pairs think about the document that teacher Habineza should prepare for every lesson.

8.1. Definition and importance of lesson planning.

Activity 8.1

During the education campaign to enhance quality education in some primary and secondary schools in Rwanda, it has found that they were two categories of teachers. The first category is made of teachers who always enter the classrooms prepared to teach and well prepared with all pedagogical documents required. They take enough time to plan all things for their learners. They focus their attention on teaching and learning activities, lesson summary, teaching and learning materials, teaching methods and techniques and provide immediate and constructive feed-back to their learners. Their leaners are very active in the classroom and that participation leads to the higher academic performance.

The second category of teachers are those who consider lesson planning, teaching and learning materials, and learners' activities as wasting of time. For them, a note book with all the content and exercises are enough as they have been using this method successfully for long time.

1. Do you agree with the first category of teacher? Why?
2. Do you agree with the second category of teacher?

Lesson Plan:

It is a daily preparation made by the teacher. It is again a plan of action to guide the teacher. Details will vary depending on the preference of the teacher, subject being covered, and the needs of the students.

Teaching without a lesson plan is like travelling while you don't know the destiny neither have GPS or a compass while crossing the ocean (Thungu, 2011). This means that for effective teaching and learning to take place and achieve its objectives, a lesson plan is necessary.

On one hand, a lesson plan :

- Enables the teacher to master the content as he/she prepares his/her lesson.
- Enables teacher to prepare the teaching/learning aids in advance.
- Enables the teacher to present his/her work in an organised way (systematically).
- Helps the teacher to evaluate his/her lesson work.
- Helps in the selection of a suitable teaching approaches, methods and techniques
- Helps to build the teacher's confidence.
- Helps in catering for individual differences of the learners.
- Helps in budgeting for the time to be spent on the lesson presentation.
- Helps in giving accountability of what happens in the classroom.

On the other hand, a good lesson is important for learners in the following ways:

- It involves the learner to participate in teaching and learning process actively.
- It uses multiple teaching approaches, methods, techniques and strategies thus facilitate learner's understanding.
- It promotes higher order thinking skills; reasoning, problem solving of students.
- It presents clear expectations/objectives i.e. behaviours you wait for from students after teaching them.
- It answers the question ''why do I need to know this?''
- It maintains a clear focus on the objectives.
- It stimulates students' interests and motivates them.

- It requires and rewards participation i.e. it should encourage student's participation by rewarding them (any learners' effort is appreciated and encouraged).
- It allows the students the opportunity to think critically.
- It checks frequently for understanding of all students-making a follow up to see if students have understood.
- It establishes a non-threatening environment-''it is ok to make a mistake' 'everyone should feel free (no fear) to try and give his/her views, because we learn from mistake, mistake is a part of learning.
- It provides for guided practice: It guides students in practice like group discussion
- It provides for independent practice: It helps students to feel free when they are practicing.
- It encourages active participation of every individual learner.
- It sets high expectations for all learners. i.e.: It sets what you want your students to reach in term of outcomes.
- It provides for all students directed closure. It should provide mutual collaboration, mutual help, and a kind of relationship among them.

Application activity 8.1

1. Advise some experienced teachers who do not plan their lessons arguing that they mastered contents.
2. Compare and contrast the effect of teachers who plan and those who do not plan on learners' performance and competences.

8.2. Parts of a lesson

Activity 8.2

When delivering a Mathematical lesson in P1 "addition of numbers less than 10". Teacher Anne started by having a revision on these numbers, learners and the teacher made different operations of addition and last they end up with different exercises.

Is this order that the teacher used correct? Why and what are the main steps/parts she followed.

Lesson preparation

A well prepared lesson plan almost guarantees a successful lesson. When preparing a lesson plan a teacher should consider the following:

- The topic from which the content of the lesson is to be delivered.
- The time allocated for teaching the topic.
- The ability (individual differences) of learners.
- Previous competences (knowledge, skills and attitudes values) of learners.
- The best method approaches and techniques of teaching that can be used to achieve the lesson objectives.
- The objectives which indicate what the learners are supposed to achieve by the end of the lesson.
- The teaching and learning resources/materials available.
- The most suitable assessment procedures that would determine whether the objectives have been achieved or not.
- The teaching and learning activities that would best achieve the objectives.

Parts of a lesson

Generally the lesson is divided into three main parts whereby each one may is divided into smaller steps to make sure that learners are involved in the learning process. Below are explained the main parts and their small steps.

1. Introduction

This is the beginning or the introduction phase. Introduction is a part where the teacher makes connection between the current and previous lesson through appropriate technique. The teacher opens short discussions to encourage learners to think about the previous learning experience and connect it with the current instructional objective. The teacher reviews the prior knowledge, skills and attitudes which have a link with the new concepts to create good foundation and logical sequencings.

When it is a new lesson without much relationship with previous ones, the teacher introduces the lesson using suitable techniques such as an interesting story, dramatic demonstration, a song, a brief field trip, a game, visual stimulation (pictures, videos, charts, etc. The introduction should be brief, imaginative, motivating and link to the earlier work.

2. Lesson development

This is the essential part of the lesson. The development of a lesson will go through small steps that vary depending on subjects, lessons, and learner's level/age. Generally, an active lesson that introduces a new concept will go through the following steps: discovery activities, presentation of learners 'findings, exploitation, generalization/synthesis/summary and exercises, explained below:

a. Discovery activity

- The teacher discusses convincingly with students to take responsibility of their learning
- He/she distributes the task/activity and gives instructions related to the task. The teacher let the students work collaboratively on the task.
- He/she then monitors how the students are progressing towards the knowledge to be learned and boost those who are still behind (but without communicating to them the knowledge). Note: During this period the teacher refrains to intervene directly on the knowledge.

b. Presentation and exploitation of learners' productions

- The teacher invites representatives of groups to presents the students' productions/findings.
- After three/four or an acceptable number of presentations, the teacher decides to engage the class into exploitation of the students' productions.
- The teacher asks the students to evaluate the productions: which ones are correct, incomplete or false.
- Then the teacher judges the logic of the students' products, makes corrections as needed, completes those which are incomplete and confirms those which are correct.

c. Summary/Conclusion and application activities

- The teacher summarizes the learned knowledge and gives examples to illustrate the learned content.
- He/she then links the activities to the learning objectives, and guides learners to make notes.
- Students carry out exercises of applying the learned content in real life contexts.

- Teacher guides learners to make the connection of what they learnt to real life situations. At this level, the role of teacher is to monitor the fixation of process and product/object being learned.

3. Assessment

In this step the teacher asks some questions to assess achievement of instructional objective. During assessment activity, learners work individually on the task/activity. The teacher avoids intervening directly. In fact, results from this assessment inform the teacher on next steps for the whole class and individuals.

An indication should be given of the linkage between this lesson and the next, if appropriate. Homework may be one of the techniques to be used. Assignment or follow-up work should be given which reinforces learning and/or provides opportunities for further practice. Assignment may be written or require learners to investigate/observe/read. If given, assignment should be followed up in a subsequent lesson.

Application activity 8.2

1. As a prospective teacher what are the indicators of a motivated class?
2. Propose the ways of introducing and concluding a lesson.
3. With your understanding on meaning and the benefits of a lesson plan, what do you think are the parts you may go through when planning?

8.3. Key required documents for making a lesson plan

Activity 8.3

As prospective teacher, what do you think are the requirements for effective lesson planning?

For effective lesson planning, the following are key required documents:

Syllabus: This is a document which outlines everything that will be covered in a particular course and the sequence of topics. When planning, teacher should consult the syllabus to know which lesson to teach and from which unit.

Syllabus enables the teacher to choose and prepare learning and teaching materials in advance, guides the teacher on the choice of the most suitable learning activities, and suggests the best ways of evaluating learners' achievements in specific topics among others.

Scheme of work: It is an outline of what should be taught in a given period of time such as a week, a month, a term or a year. It is done every year before the start of New Year. Scheme of work guides teacher when planning lessons, shows the flow of the lessons, helps the teacher to select suitable teaching strategies and instructional materials, guides the teacher in setting lesson objectives, enables the teacher to allocate time for teaching each lesson among others.

School time table: A school timetable coordinates learners, teachers, rooms and time slots in a school. Timetable is a way of allocating sufficient time to each subject in the curriculum. It helps in coordinating teachers' efforts toward achieving school goals without collision, friction and duplication. It facilitates the supervision of the teachers' work and enables the teacher to perform teaching activities on time (Thungu ,2011).

Textbooks: A textbook is a book of instruction. Its primary aim is not to impart information about a specific subject but to enable one to develop proper understanding of the subject. Textbook helps the teacher to get information/ content about the lesson to be taught.

Application activity 8.3

A good textbook can replace a syllabus while making a lesson plan. Agree/ Disagree. Explain

8.4 Lesson plan format

Activity 8.4

Read the provided lesson plan and identify detailed elements of a lesson plan

The introduction of CBC in schools calls for comprehensive change and new thinking with regard to instructional approaches in teaching, planning, learning and assessment processes.

To achieve this noble mission pre-service teachers are trained to plan lessons from year one. Here below is the lesson plan format followed by explanations of its key elements.

Format of a Competence – based Lesson Plan

School Name:..... **Teacher's name**:
.....

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size
	..... /...../ 20.....	.....	....	....	... of	...	....

Type of Special Educational Needs to be catered for in this lesson and number of learners in each category	
Unit title	
Key Unit Competence:	
Title of the lesson	
Instructional Objective	
Plan for this Class (location: in / outside)	
Learning Materials (for all learners)	
References	

Steps and Timing for each step	**Description of teaching and learning activity**		**Generic competences and cross cutting issues to be addressed + a short explanation**
	Teacher activities	**Learner activities**	
Introduction ...min			

Development of the lesson …min			
Assessment … min			
Teacher self-evaluation			

Explanation of the lesson plan format

Whereas there are many formats of a lesson plan depending on education system of every country, the Competence-Based Curriculum lesson plan in Rwanda contains the following components/parts:

a. Identification related information

This part includes school name, teacher's name, term, date, subject, class to be taught, unit number, lesson number, duration (amount of time allocated for the lesson) and class size or number of learners.

b. Types of Special Educational Needs (SEN) to be catered for in the lesson and number of learners in each category: the teacher mentions the type of SEN that he/she has identified in class, and the number of Learners with SEN in the class. In addition, He/she notes how those learners with SEN will be integrated or accommodated in learning activity so that they are also able to participate and learn.

c. Unit title: The name or title of the unit to be taught

d. Key unit competence: the competence to be achieved at the end of the unit

e. Title of the lesson: one unit may have several lessons; the title of the lesson to be taught during a given period is mentioned.

f. Instructional objective: to show what learners will achieve at the end of the lesson. It is set by the teacher based on learning objective from syllabus or the scheme of work and adapted to one lesson to be delivered. Instructional objective needs to be inclusive to reflect the needs of the whole class. It focuses on 5 elements such as condition, who, action/behaviour, content, standard/criteria for acceptable performance.

g. **Plan for the lesson (location of the lesson):** The teacher mentions whether the lesson will take place indoors (inside) or outdoors (outside).

h. **Learning materials**: The teacher shows the teaching and learning materials that will help him/her and learners to achieve objectives.

i. **Reference**s: Teacher indicates the sources of the information/ content.

j. **Column of steps and timing**: there are three main steps; introduction, development of the lesson and conclusion. Timing is allocated to the three steps.

k. **The column of teaching and learning activities**

This column starts by a space reserved for a summary of the learning and teaching process including main techniques and resources required.

In the column of teacher's activities, the teacher describes the activity using action verb in infinitive form. The questions and instructions provided by the teacher are also written in this column.

In column of learner's activities, the teacher describes the learners expected activities, findings and answers. However, for some activities or answers which cannot fit in that column, the teacher will indicate them in appendix. The teachers will precise if the activities will be carried individually, in small groups, or whole class.

l. C**olumn of the generic competences and cross cutting** issues to be addressed: the teacher writes down generic competences to be developed through learners' activities and a short explanation on how competences will be developed and cross-cutting issues adressed. The cross cutting issues to be addressed depend on the lesson content and activities.

m. **Teacher self-evaluation**

At the end of the lesson, the teacher evaluates its effectiveness. This is an opportunity for the teacher to reflect on the whole teaching and learning process. He/she honestly evaluates the level on which learners have achieved the learning objectives, the effectiveness of teaching methods, materials, etc.

END UNIT ASSESSMENT

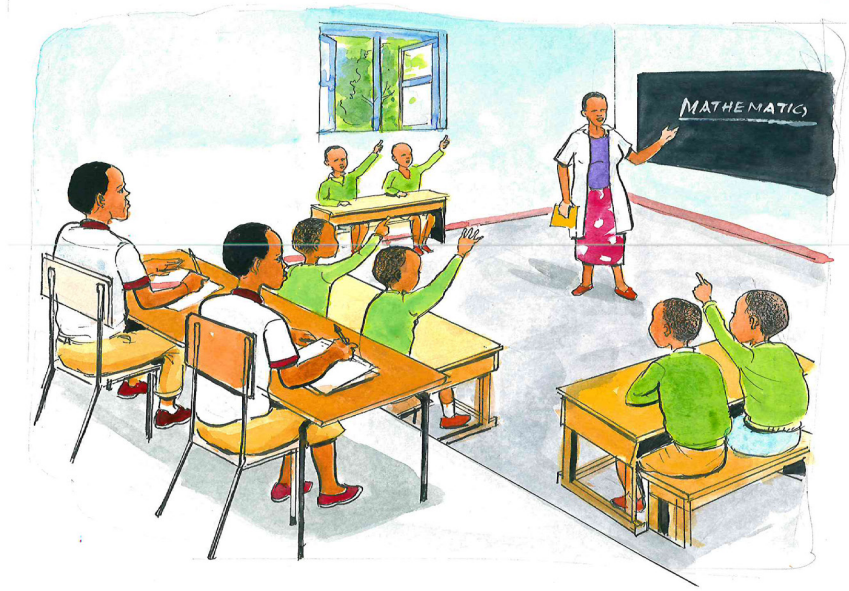
1. Explain the reasons why a lesson plan is considered as a cornerstone or backbone of any teaching and learning process.
2. Choose one topic from the subjects in your option and make a detailed lesson plan that fulfils all the requirements.

UNIT 9: LESSON OBSERVATION

Key unit competence: Assess a lesson taught by a fellow teacher, referring to specific criteria

Introductory Activity

1. Observe a model lesson from an experienced teacher at demonstration schools and write something about what you observed during lesson delivery.
2. Look at the picture below and answer related questions.



a. Which activities are taking place?

b. What would interest you most if you were among these student teachers?

c. Do you think it is necessary for the student teachers in Year one classes at TTCs to go at primary school for observation? Why?

9.1. Lesson observation form

Activity 9.1

Most of the students tend to prefer some teachers than others, they are also able to say that some lessons are more understood than others. They are able to identify that teacher has mastered the content or not, and they are able to identify that the lesson is motivating and interesting or not. Describe the elements they consider to make judgement.

9.1.1.What is Lesson/classroom observation?

Lesson/classroom observation describes a process by which the observer sits in another teacher's class to observe, records facts/evidences about the teaching and learning process and then meets with the teacher to discuss the observations.

In Pre-service, lesson observation can be conducted by student teachers when observing a model lesson delivered by a senior teacher in the model school. It can also be done by teachers from model schools and tutors from TTCs when observing student teachers during teaching practice and school attachment. Student teachers can also observe their peers.

Lesson/classroom observation is also important for in-service teachers. In this case, it is done by teachers in line with Continuous Professional Development. This can help expose teachers to new teaching methods. It can also be conducted by different supervisors/inspectors to monitor the implementation of curriculum and education policies at school level.

All these observers (Student teachers, teachers, tutors, Head Teachers, Dean of studies, Inspectors, Sector and District Education officials, etc.) need a lesson/classroom observation form to record key elements of the teaching and learning process and related environment.

9.1.2. Lesson observation forms

a. Lesson evaluation form for student teachers when teaching in Primary

Model School name : ..... **Class**: ..... **Subject**:..... **Number of learners**: ....**out of**… **Period**: From …….to……	**Student teacher's name**: ..... **Number of learners with SEN**: …… **Unit title**: ..... **Lesson title**:..... **Date**: ……

Explanation on grades:

***Grade**	4	3	2	1
Meaning	Outstanding	Good	Developing	Inadequate

Pedagogical aspects to be evaluated	**Grade***	**Average grade***	**Comments**
1. Preparation and Planning a. Pedagogical documents: All required pedagogical documents are available, clearly, regularly completed, coherent between them and well presented (final work, good handwriting, covered).	4	..../4	
b. There is a lesson plan with: – clear instructional/operational objectives, – engaging and relevant learning activities including warm up – teaching and learning resources including ICT tools and materials to address specific needs, – appropriate assessment techniques (Quiz, oral questioning and marking of exercises, manipulation of practical experiments,…)	4		
c. The student teacher plans for the needs of learners with Special Educational Needs (SEN)	4		

d. The lesson planning is in line with time allocated to that particular lesson.	4		
2. Competences developed and cross cutting issues addressed a. There is clear evidence that the student teacher has a good understanding of the subject content and meets CBC requirements.	4	..../4	
b. The student teacher adapts the content to learners' level of understanding successfully to facilitate them to achieve the instructional objectives.	4		
c. There is clear evidence that the student teacher addresses appropriate cross cutting issues and develops generic competences	4		
3. Learners' engagement and progress a. All learners are actively engaged in the tasks provided throughout the lesson	4	..../4	
b. The needs of learners with SEN are catered for so that they are fully involved in the learning activities.	4		
c. Learners make significant progress towards the instructional objectives in terms of competences and subject knowledge.	4		
d. There is logical content progression in accordance with lesson steps and the time set.	4		

4. Teaching- learning methods enable all learners to learn effectively. a. Teaching strategies facilitate learners to acquire knowledge, develop skills, attitudes and values.	4	..../4	
b. The methods used by the student teacher lead to outstanding learning.	4		
c. Teaching methods used facilitate all learners to achieve challenging instructional objectives.	4		
5. Use of teaching and learning resources a. The teaching and learning resources are accessible to ALL learners and well used by both the student teachers and learners	4	..../4	
b. The teaching and learning resources are effectively used and help learners to achieve the instructional objective.	4		
6. Student teacher's professional conduct and ethics a. The student teacher wears in a decent manner and has appropriate make up, non-disturbing haircut.	4	..../4	
b. The student teacher uses proper language	4		
7. Class management and learning environment a. The student teacher creates a positive and conducive learning environment.	4	..../4	
b. Interaction and collaborative learning in all activities are encouraged.	4		

c. The student teacher calls learners by their names referring to sitting plan and praises them frequently.	4		
8. Assessment of learners' progress a. The student teacher systematically and effectively assesses the learning throughout the lesson.	4	…./4	
b. The student teacher intervenes and adapts the lesson accordingly and is able to judge how far the instructional objectives have been achieved.	4		
c. The student teacher provides constructive feedback to learners so that they know how to improve.	4		
d. Learners are encouraged to reflect on their own understanding and ability to apply their knowledge and to support each other.	4		
e. There is evidence that the student teacher uses assessment results for further learning improvement.	4		
f. Assessment activities are fully inclusive to cater for learners with SEN.	4		
g. Records of assessments are kept in the learner's portfolio and the student teacher is aware of the learning needs of each learner. (during school attachment)	4		

9. The use of the medium of instruction and communication. a. The student teacher uses the official medium of instruction and develops the language skills of learners at an appropriate level.	4	…./4	
b. Communication with all learners is effective and language difficulties do not hinder learning	4		
c. Learners are encouraged to contribute to the lesson and communicate with each other in the correct medium of instruction	4		
Overall Performance** (Total for all the 9 aspects of the lesson)		… **out of 36**	**…..out of 100**

Tick as appropriate

**Overall Performance	100%-90.0%	89.9%-70.0%	69.9 %-50.0%	49.9%-0.0%
Meaning	**Outstanding**	**Good**	**Developing**	**Inadequate**

Conclusion and feedback:

Strong points

……
……

Areas for improvement:

……
……

Student Teacher's comments:

……
……

Assessor's names & signature **Student Teacher's name & signature**

b. Lesson evaluation form for student teachers when teaching in pre-primary

Model School name :..... **Class**:..... **Learning area**: ..... **Number of learners**: .....**out of**… **Unit title**:..... **Period**: From ……to ……./	**Student teacher's name**: ..... **Number of learners with SEN**:..... **Weekly theme (if applicable):.....** **Lesson title/Activity**:..... **Date**: ……..

Explanation on grades:

***Grade**	4	3	2	1
Meaning	Outstanding	Good	Developing	Inadequate

Pedagogical aspects to be evaluated	**Grade***	**Average grade***	**Comments**
1. Preparation and Planning a. Pedagogical documents: all required pedagogical documents are available, clearly, regularly completed, coherent between them and well presented (final work, good handwriting, covered).	**4**	……/4	
b. There is a lesson plan with: – clear instructional/operational objectives, – engaging learning activities including warm up, – play-based teaching and learning techniques/strategies – appropriate teaching and learning materials (including ICT tools) adapted to the weekly theme and that address specific needs, – child friendly assessment techniques.	**4**		
c. The lesson plan is based on the weekly theme where applicable; apply the play- based and contextualized learning.	**4**		

d. The student teacher plans for the needs of learners with Special Educational Needs (SEN)	4		
e. The lesson planning is in line with time allocated to that particular lesson/activity.	4		
2. Competences developed and cross cutting issues addressed a. There is clear evidence that the student teacher has a good understanding of the subject content and meets CBC requirements.	4	……/4	
b.The student teacher adapts the content to learners' level of understanding successfully to facilitate them to achieve the instructional objectives.	4		
c. There is clear evidence that the student teacher addresses appropriate cross cutting issues and develops generic competences.	4		
3. Learners' engagement and progress. a. All learners are actively engaged in the tasks provided throughout the lesson/activity.	4	……/4	
b. The needs of learners with SEN are catered for so that they are fully involved in the learning activities.	4		
c. Learners make significant progress towards the instructional objectives in terms of competences and subject knowledge.	4		

d. There is logical content progression in accordance with lesson steps and the time set.	4		
4. Use of Teaching- learning methods enables all learners to learn/study effectively. a. The student teacher understands how young children learn and provides learning opportunities that supports holistic development.	4	……/4	
b.Teaching methods used facilitate all learners to achieve instructional objectives.	4		
5. Use of teaching and learning resources a.The teaching and learning resources are accessible to ALL learners and well used by both the student teachers and learners	4	……/4	
b. The teaching and learning resources are effectively used and help learners to achieve the instructional objective.	4		
6. Student teacher's professional conduct and ethics a. The student teacher wears in a decent manner and has appropriate make up, non-disturbing haircut.	4	……/4	
b. The student teacher uses proper language	4		
7. Class management and learning environment. a. The student teacher creates a positive and conducive a learning environment that celebrates children's achievements and allows opportunities for exploration and free play.	4	……/4	

b. The student teacher uses warm up for easy transition between activities	4		
c. The student teacher is friendly and approachable; he/she has good relationships and uses various strategies to positively manage the behavior of the children during indoor and outdoor activities.	4		
d. Interaction and collaborative learning in all activities are encouraged to develop social skills	4		
e. The student teacher caters for learners' individual learning.	4		
8. Assessment of learners' progress a.The student teacher uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, emotional, language and physical development of the child.	4	……/4	
b.The student teacher intervenes and adapts the lesson accordingly and is able to judge how far the instructional objectives have been achieved.	4		
c. The student teacher provides constructive feedback to learners so that they know how to improve.	4		
d. There is evidence that the student teacher uses assessment results for future plans.	4		
f. Assessment activities are fully inclusive to cater for learners with SEN.	4		
g. Records of assessments are kept in the learner's portfolio and the student teacher is aware of the learning needs of each learner. (during school attachment)	4		

9. The use of the medium of instruction and communication a. The student teacher uses effective verbal and non-verbal communication techniques as well as foster active inquiry, collaboration, and supportive interaction in the classroom.	4	……/4	
b. The student teacher uses the official medium of instruction and develops the language skills of learners at an appropriate level.	4		
c. Communication with all learners is effective and language difficulties do not hinder learning	4		
Overall Performance** (Total for all the 9 aspects of the lesson)		**…….. out of 36**	**……out of 100**

Overall Performance** (Total for all the 9 aspects of the lesson)	**…….. out of 36**	**……out of 100**

Tick as appropriate

****Overall Performance**	**100%-90.0%**	**89.9%-70.0%**	**69.9 %-50.0%**	**49.9%-0.0%**
Meaning	**Outstanding**	**Good**	**Developing**	**Inadequate**

Conclusion and feedback:

Strong points

……

……

Areas for improvement:

……

……

Student Teacher's comments:

……

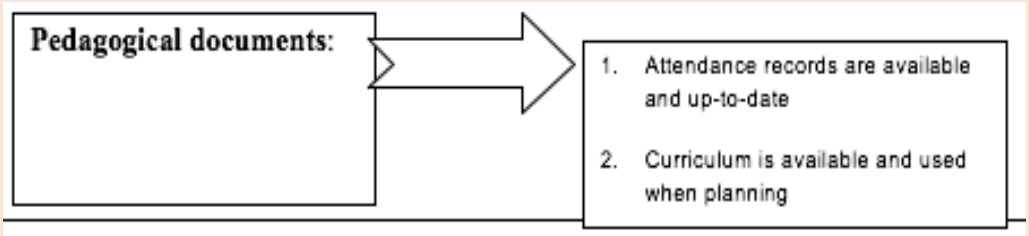
Assessor's names & signature	Student Teacher's name & signature
.....	.....
.....	.....

Application activity 9.1

Follow the example below to make different graphics that match the element with the following descriptions:

- Written plans reflect a thematic approach
- Ask relevant questions and contribute ideas to the lesson
- Correct mistakes after getting feedback from the teacher
- Can see materials easily
- Handle books and pretend to read
- Attendance records are available and up-to-date
- Are not fearful but do show knowledge of proper behaviour
- Help to keep the classroom and themselves clean
- Gives clear instructions, guidance and information
- Models activities and tasks before giving students a chance to try alone
- Varies instructional activities to address different learning styles and needs.
- Models activities and games before giving children a chance to try alone
- Varies instructional activities to address different learning styles and needs
- Attendance records are available and up-to-date
- Curriculum is available and used when planning

Example



9.2. Constructive feedback

Activity 9.2

KARIMA John is a teacher at one primary school in Rwanda, he is rude teacher when he is teaching he does not want students who ask him questions if one tries to raise hand and asks question, the teacher tells him/her to keep quiet and even when he asks questions to the students to be answered orally. He does not give constructive feedback to their answer, he only replies “ok” to both right and wrong answers so that students cannot be aware of what to improve. Now what do you think is wrong with this teacher? If you were that teacher what would you do differently?

The feedback

The feedback can be defined as any comment or reflection (written or oral) provided by others (i.e. teachers, peers) on learners’ work so as to give them opportunities to improve.

Purposes of feedback

The main purposes of feedback are to:

- Clarify what good performance is (goals, criteria, expected standards).
- Facilitate the development of self-assessment (reflection) in learning.
- Deliver high quality information to learners about their learning.
- Encourage teacher and peer dialogue around learning.
- Encourage positive motivational beliefs and self-esteem.
- Provide opportunities to close the gap between current and desired performance.
- Provide information to teachers that can be used to help shape teaching

How to give and receive feedback effective

Giving constructive feedback in the form of verbal or written comments is a vital aspect of ongoing classroom assessment. Feedback can be provided in a range of situations: from an instant, informal reply to a more formally planned review. While giving oral feedback, the teacher should:

- Welcome both the positive negative contribution of the learner. Always give specific feedback on what a learner has done well. Clarify the right answer of the learner, and build his/her corrections upon the wrong answer.

- Seek learners' views and value their contribution. This will help them to get better at assessing their own work, which is vital to them to become independent learners, etc.
- Provid immediate feedback right after the leaners' perfomance.
- Invite the learners to comment on what the teacher does as well (feedback is reciprocal).
- Focus on things that each learner can change, and avoid overloading them with too much feedback at once.
- Be sensitive if the teacher has to give feedback to one person in a group. The learner might feel undermined if others hear.
- Look for ways forward together. Share ideas and explore solutions, rather than always putting forward teachers's suggestions or input.
- Create a situation on how learners agree on the given feedback. This could include agreeing new targets or planning learning opportunities.
- Allow learners time to focus on feedback for improvement.
- Provide constructive criticism with explanations of how to improve.

Application activity 9.2

1. Suppose you have done micro-teaching in your class in twenty minutes. After that tutor and your colleagues commented on your lesson. What do you think are the benefits of those comments?
2. What would be your attitudes towards negative comments?
3. Suppose you are a teacher, what are the strategies that you will be using to provide a constructive feedback to the learners who fail to answer your questions effectively?

9.3. Reflective practice

Activity 9.3

Louise always thinks about her lesson before going to classroom and tries her best to make her learners understand it. She makes research on her subject and after the lesson; she evaluates herself to find what she will correct next time.

How do you think, thinking about lesson helps teacher Louise to improve the delivery of her lesson effectively?

9.3.1. Definition

Reflection

Reflection is a process of learning from experience in which self-inquiry is regarded as key component of learner's development (Richards, 1994). Reflection takes place when teacher reconstructs, re-enacts and/or recaptures the events, emotions and the accomplishment of his/her teaching (Schulman, 1987).

Reflective practice

Reflective practice is the capacity to reflect on action so as to engage in the process of continuous learning. In education, **reflective practice** refers to the process of the educator studying his or her own teaching methods and determining what works best for the students.

Reflective teaching

Reflective teaching is an activity that engages a teacher in critical self-evaluation of the manner he/she has conducted the teaching of a particular lesson. It should be done at the end of every lesson. The student/teacher is supposed to comment on his/her own performance in the lesson. It involves giving honest answer to the following questions:

- How did I teach?
- What was successful and how can I make it better?
- What was not very successful?
- How can I improve on it?

The answers to these questions should be written down (**written reflection).**

Reflective learning

Reflective learning refers to an active process involving thinking through issues asking yourself questions and seeking out relevant information to aid your understanding. Reflection works best when you think about what you are doing before.

9.3.2. Types of reflective teaching

Reflection for action (before): It is proactive in nature; it involves thinking a head about an action before doing it. This simply means thinking about the lesson before teaching it.

Reflection- in- action (present): Is when teachers are in the classroom teaching in their everyday routine knowledge. Given that teachers carry out such actions every day, they have to employ a kind of knowing- in –action.

Reflection-on-action (past): It is the systematic and deliberate thinking back over one's action. It also involves thinking back on what teachers have done to discover how knowing in action might have contributed to unexpected action.

9.3.3. Steps for Reflection

There are four Steps for Reflection :Look, Think, Learn, Plan, described below:.

Step 1: Look back at a situation or experience

Look back at something that happened or some thought you find yourself focusing on and describe it briefly.

Step 2: Think in depth about your experience or thought

Think in depth about why your experience happened or why your thought is so important to you. What hunches, ideas, guesses, interpretations come to mind as you analyze your experience? (Probably the most important piece.)

Step 3: Describe what you learned about yourself or your role: Write what you've learned about yourself, your role, or the situation.

Step 4: Plan what you will do next: Describe what you are going to do next/ your action plan, next steps. This may be resolving to do something differently the next time; it may be adopting a new attitude or changed thinking; it may be needing to puzzle further.

9.3.4. Importance of reflection in education.

The reflection is more important in various ways for both the teacher and learners for the following ways:

For the teacher:When problems arise during a teaching episode, a teacher spontaneously analyzes the situation and responds accordingly. Reflective thinking that involves continuous assessment, creating a balance between new information and the critical examination of prior teaching experiences relevant to new information. After teaching and learning process the teacher can assess him/herself about the strengths and weaknesses as well as ways forward, etc.

For the learner

A learner may have self- reflection on what was supposed to be done after an assessment. Also, they may use their learning log/diary/journal for the purpose of improving their learning. Reflection activities should involve individual learners and address interactions with peers.

For the school management

Educators weigh competing viewpoints and research findings regarding a whole range of pedagogical concerns/decision. Example: curriculum, instructional strategies, rules and organization of classroom, etc. Educators consider the social, moral and political dimensions of schooling and judge those dimensions in light of ethical criteria such as social justice and equality of opportunity. School manager and its administration can sit down and think of what can be done to enhance the students' performance.

Application activity 9.3

1. With your classmate discuss how you use reflection in academic life?
2. What type of reflection do you use and for what purpose do you use it?
3. Discuss the importance of reflective teaching?

9.4. Importance of lesson observation/ classroom observation

Activity 9.4

Based on the experience you have from sub-unit 9.1 and 9.2 brainstorm the importance of model lesson observation to you.

9.4.1. Importance of classroom/lesson observation for student teachers

Student teachers will need to observe model lessons in model/demonstration schools as part of opportunities to gain professional skills. In fact, this will enable student teachers:

- To observe how to engage all learners by effectively using teaching and learning methods/techniques and resources (including chalkboard and ICTs tools.

- To observe effective strategies for classroom management depending on class size and level (pre-primary, lower primary and upper primary)
- To be informed on how to give constructive feedback while teaching
- To observe how to accommodate learners with Special Educational Needs.

9.4.2. Importance of classroom/lesson observation for in-service teachers

Lesson observation conducted by teachers and supervisors from different levels allow:

- To observe teachers in real life teaching situations;
- Teachers to get feedback from fellow teachers and supervisors;
- The teacher observed to improve next lessons based on feedback;
- To identify own strengths and weaknesses in teaching;
- To assess availability of teaching and learning resources and their effective use;
- It contributes to the Personal Professional Development (CPD);
- Supervisors to plan for future CPD related activities;
- To monitor student's progress.

Application activity 9.4

It is time to go at demonstration school to observe model lessons. Discuss your benefits from the observation you will make.

9.5. Key elements to consider during classroom/lesson observation

Activity 9.5

Most of the students tend to prefer some teachers than others, they are also able to say that some lessons are more understood than others. They are able to identify that teacher has mastered the content or not, and they are able to identify that the lesson is motivating and interesting or not. Why these students make the above judgements?

The student teachers, tutors, teachers from model/demonstration schools who will be conducting an observation in primary will have to fill the observation form for primary while those who will be conducting an observation in pre-primary will have to fill the observation form for pre-primary.

Either pre-primary or primary observers will fill in the forms based on the following key elements:

- Pedagogical documents
- Development of competences and integration of crosscutting issues
- Learner's engagement and progress
- Use of teaching Methods and techniques
- Use of teaching and learning resources
- Teacher's professional conduct and ethics
- Class management and learning environment
- Assessment of learners 'progress
- Use of Medium of instruction and communication skills

Application activity 9.5

Suppose you are a teacher at a given school, what are the elements that you will take into consideration most in your classroom so that when an observer comes will appreciate you?

END UNIT ASSESSMENT

1. Explain elements on which the effectiveness of a lesson is based and measured.
2. Identify the steps of reflection that you will go through after observing s model lesson

UNIT 10: INTRODUCTION TO PSYCHOLOGY

Key Unit competence: Justify the necessity of studying psychology and its related concepts to the profession of teaching.

Introductory Activity

Read the following case study and answer the questions.

In a classroom of primary, teacher Jeanette realised that her students are with different behaviours, personality, mental processes, intelligence, educational background and they are at different developmental stages. But, she has knowledge and skills of educational psychology learnt from TTC to manage her classroom.

What are the other knowledge and skills that the teacher need to deal with all these individual differences in the classroom?

10.1. Key concepts of psychology

Activity 10.1

Referring to 2 children you have observed more than once in nursery schools or at home playing alone or with others describe the behaviours he/she manifested most.

a. Describe 2 actions the two children are involved in.

b. Are the two children behaving in the same way? Explain

Psychology

Psychology was broken away from Philosophy and Physiology and emerged as a separated discipline just over 100 years ago. It is a term that was discussed and understood differently by different psychologists. However, they finally came up with a common definition which is known as modern definition of psychology (Wolffs, 1748).

Traditional definitions of psychology

The definitions of psychology evolved over time as follow:

- **Psychology as the study of mind:** the word psychology has its genesis in Greek, where "**psycho"** comes from Greek "**psyche**" means **soul, spirit,** and **mind**. The second part of the word "**logy"** comes from the Greek word "**logos** which means **doctrine, theory, science, study**...,. Psychology was therefore defined as: science or study of the mind. This focus was particularly true of philosophers such as Plato, Aristotle, Descartes and Locke who raised provocative questions about human thoughts, feelings and behaviors.
- **Psychology as the study of conscious experience:** Psychology has its formal beginning in **Leipzig University** (in Germany) where **WILHELM WUNDT** (1832-1920) established the first laboratory of psychology in 1879.Wundt is considered as the founder of psychology, limited the subject to the study of conscious experience. He defined psychology as "study/ science of consciousness". The definition was also rejected because it didn't talk about the subconscious and unconscious activities of the mind.
- **Psychology as the study of observable behaviour:** It was **John Watson** (1878-1958), an American psychologist, who is the father of behaviourism, the approach that limits its study to observable responses, to specific stimuli- response by using conditioning reflexes and other techniques for the study of learning processes. According to him consciousness cannot be scientifically tested or measured.

Modern definition of psychology.

With research advances there was a shift in the meaning of psychology from traditional perspective to modern perspective. Such paradigm shift led a number of psychologists to have a common understanding of what psychology might mean.

Today, most psychologists would agree that they have now find ways to study mental processes using scientific methods. Mental processes prefer the imagination, perception, feelings, sensations, etc.

Generally, psychology is defined as "*systematic scientific study of behaviour and mental processes in relation to their environment*". From the modern definition of psychology, we have 3 key terms: behaviour, mental processes and science.

Psychology is considered as science because psychologists' main concern is to understand people's behaviour through carefully controlled observations. It is a positive science, because it uses only those methods

that are strictly scientific and which give us knowledge that can be verified everywhere. It is therefore based on generalizations drawn on the basis of factual data analysed and compared.

Behaviour: It is also the response of the system or organism to various stimuli or inputs whether internal or external, conscious or subconscious, overt or covert, and voluntary or involuntary**.**

Mental process is synonymous with cognitive operation and cognitive process which refer to the performance of some composite cognitive activity or an operation that affects mental contents.

Application activity 10.1

1. Give the modern definition of psychology
2. Write short notes on the following terms: Behaviour, mental process.
3. Explain why psychology is a science?

10.2 Some branches of modern psychology

Activity 10.2

Using Internet search about branches of psychology.

There are many branches of modern psychology but this textbook is limited to the following:

- **Educational and school psychology:** It concerns with application of scientific method to the study of the behavior of people in instructional settings. This branch studies all aspects of the educational process from techniques of instruction of normal learning to learning disabilities. It enables teachers to know what method of teaching can produce effective learning since children differ in their capacities to learn. Some are gifted and talented while others may be mentally disadvantaged.
- **Developmental psychology:** Is also known as child development or human development. It is the study of developmental processes involved in human physical, social, emotional and intellectual changes from conception through adolescence including numerous biological

and cultural factors that influence these processes.

Precisely, it is the study of progressive changes in behavior and abilities of an individual from conception to death.

- **Guidance and counselling psychology:** deals with helping people with mind non-medical problems of social and emotional adjustment such as in schooling, marriage, working in social group, choosing and sustaining school career, handling personal problems, etc.
- **Social psychology:** This is the field of psychology that studies the nature and cause of people thoughts, feelings and behaviours in social situation. In other words, social psychology studies the behaviours of the individual as a member of a crowd, group or society.
- **Community psychology:** attempts to examine how the social environment institutions and physical structures can better serve individual human needs.
- **Clinical psychology:** It is a branch of psychology devoted to the study, diagnosis, and treatment of people with mental illnesses and other psychological disorders.
- **Medical psychology**: It refers to the application of psychological principles to the practice of medicine, and is clearly comprehensive rather than primary drug oriented, for both physical and mental disorders.

Application activity 10.2

1. Which branches of psychology that teachers need to adequately play their roles as educator? Explain.
2. Which branch are you mostly interested in? Why?

10.3. Importance of psychology in education

Activity 10.3

Based on knowledge on branches of psychology and through observation of the picture below, interpret it and identify the importance of psychology in education and in everyday life in general

Source: www.quora.com

Psychology is very important in education for the following reasons:

- **To know the student:** psychology enables the teacher to know his/her learner and identify his/her potentialities, capabilities, strength and weaknesses, and thereafter differentiate instruction according to diverse learners' needs.
- **Psychology:** Is needed for selecting and organizing the subject matter or learning experiences**.** When a teacher knows his students, then it becomes easy for him to select and organize learning experiences and also selects or develops learning materials.
- **The knowledge of psychology:** Enables to identify tools and techniques of teaching and learning: Such tools are essential for making his class more attractive, so that he can involve students in the teaching and learning process. To arrange learning situations or environments: Psychology helps the teacher to create or arrange appropriate learning situations for students**.** For example, the knowledge of group dynamics or group behavior gives the necessary art for teaching or learning in the group.
- **Providing guidance services:** The knowledge of psychology helps teachers in providing guidance services to the students. He can better diagnose his students' abilities, interests, and aptitudes of his learners and guide them accordingly.
- **Solving classroom problems:** There are innumerable problem like backwardness, truancy, bullying, cheating in the classroom situations which are to be faced by a teacher. psychology helps the teacher in this field also.

- **Knowing about him-self:** Knowledge of psychology helps the teacher to know about him/herself. His/her own behaviour pattern, personality characteristics, likes and dislikes motivation, anxiety, conflicts, adjustment etc.
- **Understanding how the body and mind work together**: Psychology allows teachers to understand more about how the body and mind work together. This knowledge can help with decision-making and avoiding stressful situations. It can help with time management, setting and achieving goals, and living effectively.
- **The building of relationships:** Psychology makes it easier to live with others at school by understanding them more and working with their behaviour.
- **Improving communication:** A greater understanding of how humans think and behave will help teachers and students communicate better. They will be more effective in understanding what a person really means by gestures and actions.
- **Building self-confidence:** By understanding more about yourself and your personality, you can gain more self-confidence. You will learn more about your weaknesses and can build on them.
- **Enriching careers:** with psychology teachers will be able to understand their co-workers more and building a better friendship so that they will help each other to enrich their careers.

Application activity 10.3

1. Why do you think it is necessary to study psychology in TTC?
2. As a student teacher discuss how you will use psychology in your career of teaching.

END UNIT ASSESSMENT

1. Identify the branches of psychology which are judged necessary in education careers so that teachers can use them to ensure proper teaching and effective learning.
2. Explain why psychology is important for student teachers and how it can be used for solving classroom management and organizational issues.
3. Think of a particular situation in which you have to deal with strange behaviours of learners and learning problems thereafter propose solutions to address those problem by using psychological knowledge you have acquired.

UNIT 11: INTRODUCTION TO HUMAN DEVELOPMENT

Key Unit competence: Justify why teachers should consider developmental stages of human being in relation with holistic development.

Introductory Activity

Life starts from the time of conception and ends at death. Based on your knowledge of Rwandan culture, observation and experience outline chronologically the periods of human development and their respective characteristics according to the Rwandan culture.

11.1. Key concepts of developmental psychology

Activity 11.1

Based on knowledge related to branches of psychology, which of the following terms are linked to human development? Teaching and learning processes, progressive changes, maturation, evaluation, growth, developmental processes.

- **Growth:** It is the quantitative increase in size, height and weight and expansion of vocabulary to the point of maturity. It involves the multiplication and growth of body cells.
- **Maturation:** Biological growth process that enables orderly changes in behavior, relatively uninfluenced by experience. It refers to sequential characteristics of biological growth and development.
- **Note**: Maturation is growth which takes place regularly in an individual without special condition of stimulation. On the other hand, **growth** refers to increase in size and mass. Many changes during development are due to the **growth** and **maturation.**
- **Development:** This implies overall quantitative as well as qualitative changes. It basically involves changes in thought and behaviour of a person as a result of biological and environmental influences.

For example, development of thinking proceeds from recognition of concrete objects in infancy to the forming of higher concepts and abstract thought in adolescence. Development is also the process of growing, maturing, and changing.

- **Developmental domains**: growth areas, each with specific skills and abilities that develop over time
- **Brain architecture**: The physical connections of neurons and synapses or "wiring" of the brain.
- **Sensitive period of development**: According to Montessori, sensitive period refers to a period of time when a child's interests are focused on developing a particular skill or knowledge area. During sensitive period, a child easily absorbs information in a specific way. The most important sensitive periods occur between birth and age six.
- **Critical period:** A specific time span during which stable, long-lasting pathways for a particular skill are made in the brain.
- **Intuitive thinking:** Is basically the kind of thinking that helps you understand reality in the moment, without logic or analysis.
- **Developmental psychology:** This is also called child psychology or human growth and development. It is a branch of psychology that studies the developmental processes involved in human physical, emotional, social and intellectual changes from conception through adolescence including numerous factors that influence these processes. It is also the study of progressive changes in behavior and abilities of an individual from conception to death

It is very important for a future teacher to study developmental psychology for a number of reasons. Many psychologists and educationists have appreciated the value of developmental psychology to education; some of the most important contributions are the following:

- It helps in understanding how children change as they grow up and the forces that contribute to this change.
- It helps in training early childhood educators.
- It helps in training pre-school teachers who are to take care of pre-kindergarten children.
- It helps in understanding the roots of social difficulties encountered by many of today's adolescents.
- It helps teachers, prospective teachers and parents to be in a position to understand the individual differences in learning and how to adapt their teaching according to the learner's mental requirements by using different teaching methods.

- Teachers and parents get to know the needs and motives of children at different levels so that they can motivate the children accordingly.
- It enables teachers, psychologists and parents to understand emotional reactions of individual child.
- It helps psychologists, teachers, and development psychologists to understand the nature of classroom learning and the learning process of children in general.

Application activity 11.1

1. How does maturation differ from growth?
2. Explain 4 reasons why developmental psychology is important to a teacher.
3. Write one characteristic which applies to each of the following terms:
   - Maturation
   - Growth

11.2. Developmental domains/dimensions

Activity 11.2

When MUNANARI was 3 years old he was unable to hold the pencil properly but was able to kick the ball with his foot. Two years later when he was 5 years old, he could hold the pencil and write in his notebook.

a. What aspect of development helped Munanari to hold the pencil and write in his notebook?

b. How do we call the motor development that Munanari did not attain when he was three?

Human development can be classified into a number of different aspects or domains:

- **Physical development/growth:** It deals with the changes in the body.
- **Social development:** This refers to changes in which an individual interacts with others in society.
- **Intellectual /cognitive development:** This refers to higher mental processes such as thinking, remembering, perception, reasoning…

- **Social development:** This refers to the development of children's behavior and their interaction with others. It can include moral and spiritual development too.
- **Moral development:** This refers to changes of an individual in relation to what society expects of him or her.
- **Language development:** Expressing thoughts in the form of words and sentences
- **Motor development:** This deals with two kinds of development namely Gross motor and Fine motor development.
  - **Gross motor**: using large muscle groups in legs, arms, and chest (walking, running, throwing, kicking).
  - **Fine motor development** – using small muscles in the hands and feet in coordination with the eyes (reaching, grasping).

Note on interrelationship between developmental domains

Developmental domains are separated for study purposes but in reality they are interrelated. In fact, as shown by the following examples, what affects one domain impacts other domains:

The motor development has an impact on cognitive development: motor skills allow the exploration of the near and further environment which develop problem solving, creativity, critical thinking. Vice versa, the cognitive development has a great impact on physical development: a child with intellectual challenges will have motor problems.

Application activity 11.2

1. Associate the following activities with the aspects of human development dimensions:
   a. A primary four student was send at the market by her mother to sell the manioc and he managed to bargain the price effectively.
   b. Ruth can interact harmoniously with her classmates during the group work
   c. Richard is good humorist and always perform better in debate
2. Using examples, distinguish fine motor and gross motor development

11.3. Developmental stages

Activity 11.3

Observe the picture above showing people of different ages and identify who is:

a. An old
b. A child
c. An adolescent
d. A baby
e. A toddler

Answer using number having the youngest as number one.

Children go through distinct stages or periods of development as they move from infants to young adults. During each of these stages, multiple changes in the development of the brain take place. What occurs and approximately when these developments take place are biologically determined. However, environmental circumstances and exchanges with key individuals within that environment have significant influence on how each child benefits from each developmental event. Ages and stages is a term used to broadly outline key periods in the human development timeline. During each stage growth and development occur in the primary developmental domains including physical, intellectual, language and social – emotional.

An individual goes through the following periods in his/her development:

a. **Prenatal period**: This is a period prior to birth. i.e. conception to birth. It is a period of tremendous growth usually from a single cell to an organism. This occurs approximately between 8-9 months thought some exceptional cases may occur (Odera, Nizeyimana, and Kareba, 2004).

b. **Infancy period** (0-2 years): Within this period, the individual is called a baby. It is a time of extreme dependence on adults. This is a period when many psychological activities such as language, symbolic thought, sensorimotor coordination and social learning start manifesting themselves.

c. **Early childhood** (2-6 years): An individual within it is toddler, then a child. This is a period from birth to eight years old, is a time of remarkable growth with development at its peak. During this stage, children are highly influenced by the environment and the people that surround them. They learn to become more self-reliant and care for themselves. They develop school readiness skills (such as identifying letters, symbols and colours) and spend most of their time playing with their peers (Odera, Nizeyimana, and Kareba li, 2004).

d. **Middle and Late childhood** (6-12 years): The individual is called a child. This is a period when children try to master fundamental skills for writing, reading, arithmetic and increase self-control.

e. **Adolescence** (12-20 years): the individual is an adolescent. This period starts with rapid bodily changes associated with gain in height, weight and development of sexual characteristics.

f. **Adulthood:** (20→): Adulthood, the period in the human lifespan in which full physical and intellectual maturity have been attained.

This period includes:

- **Young adulthood (20-40 years**): The individual is a young adult.
- **Middle adulthood (40- 60years):** The individual is the adult
- **Old age/late adulthood** (60/ 65→): The individual is old

Application activity 11.3

1. In which stage of development do the following individuals fall?
2. Give the developmental stages in humans.

11.4. Principles of development

Activity 11.4

A primary one teacher was teaching mathematics (addition). He wrote exercises on chalkboard and students failed to make correct addition. He took his students out and by using stones students managed to solve the same addition of number correctly.

1. Why do you think students solved the same questions that they failed when they were in classroom?

There is a set of principles that characterize the pattern and process of growth and development, but we can have individual differences. The following are principles of human growth and development:

a. **Development proceeds from the head down-wards**. This is called the "**cephalo-caudal principle**". Down-ward distribution of physical growth, starting in the head and proceeding, by stage, down body to the feet. According to this principle, the child gains control of the head first, then the arms and then the legs.

b. **Development proceeds from the centre of the body out- wards**. This principle of "**proximo-distal development**". This means that the spinal cord develops before outer parts of the body. Out-ward distribution of physical growth, starting in the centre of the body and proceeding out to the extremities. The child's arms develop before the hand; the hands and feet develop before the fingers and toes, etc.

c. **Growth and development are a continuous process**. As a child develops, he/she adds to the skills already acquired and the new skills become the basis for further achievement and mastery of skills. Also, one stage of development lays the foundation for the next stage of development.

d. **Development depends on maturation and learning**. Maturation refers to the sequential characteristic of biological growth and development. The biological changes occur in sequential order and give children the new abilities. On the other hand, a stimulating environment and varied experiences allow a child to develop to his/ her potential.

e. **Growth is continuous and gradual**: Growth always brings about certain change in the organism. But these changes do not take place suddenly. It is a continuous process. All the parts of body continue to grow gradually until they reach their maximum through infancy early childhood, late childhood.

f. **Growth proceeds more rapidly during early years**: The rate of growth is not uniform. The child grows more rapidly during early years and slowly during the later years. Growth during early years is so rapid that it is easily noticeable and growth becomes slow at the later stages.

g. **Development proceeds from general to specific**: The child first shows general responses as a whole. Then gradually he gives specific response to specific stimuli. The child moves his whole hand to indicate certain thing instead of one finger. In the emotional aspect, he responds through only general response like crying & smile to denote, hunger, pain & Joy and the baby produces general babbling sounds, before he can speak words.

h. **Development is a product of heredity and environment**: Heredity and environment have considerable impact on the growth and development of the child. The child is born with some genetically endowments and develops by interacting with his environment. Neither heredity nor environment is the sole factor responsible for the development of a child.

i. **Most of the traits are correlated:** The physical and the mental development of the child are mostly correlated to each other. A child who has a good physical health is also above average in intelligence. A child whose intelligence is above average is also so in health size, sociability, attitudes and aptitudes. But this may not be always true.

j. **Growth is not uniform**: Different parts of body grow at different rates. All parts of body can never grow at the same rate. At birth, head is one fourth of the body in length. Later other parts of body grow very fast till it reaches maturation

k. **Development is predictable**: In many cases it is possible to predict the type of probable development a child will follow, because the rate of development follows a Pattern.

Application activity 11.4

1. Using examples explain any 3 principles of human development.
2. Explain the implications of principles of development in teaching and learning process.

11.5. Brain development

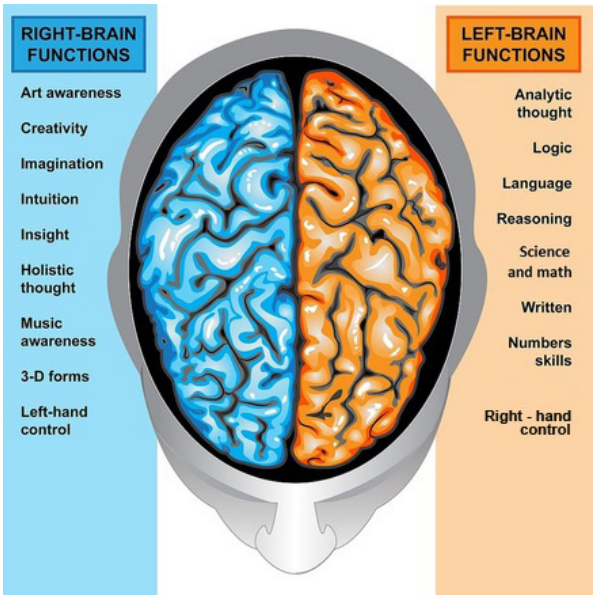
11.5.1. Brain Basics

Activity 11.5.1

We get information through our senses but where the information goes for further interpretation?

Every thought and action is controlled by the brain, the body's most complex organ.The brain is an amazing three-pound organ that controls all functions of the body, interprets information from the outside world, and embodies the essence of the mind and soul. Intelligence, creativity, emotion, and memory are a few of the many things governed by the brain. The brain receives information through our five senses: sight, smell, touch, taste, and hearing - often many at one time. It assembles the messages in a way that has meaning for us, and can store that information in our memory. The brain controls our thoughts, memory and speech, movement of the arms and legs, and the function of many organs within our body.

a. Functions of the left and right hemisphere of the brain



https://brainmadesimple.com

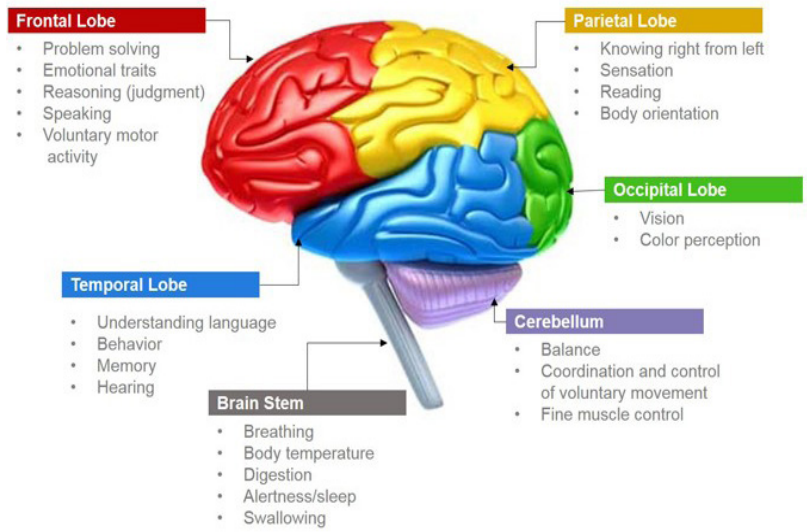
One of the main part of the brain **"cerebrum"** is composed of the right and left hemispheres. Even if these two sides are equal in size, they are not the same and do not have the same functions.

The Left hemisphere controls: Analytic thought, logic, spoken and written language, reasoning, Science and Mathematics, Numbers, letters, Abstract, right hand control. It is responsible of control of the right side of the body. The left hemisphere is dominant in hand use and language in about 92% of people. They are called righties or right-handed people.

The right hemisphere controls: Artistic and musical awareness, creativity, intuition, imagination, spatial relationship, left hand control, concrete, construction. Left-handed people or lefties have their right brain dominant.

Lefties face challenges of being different and minority (about 10% of the population) in a world where nearly everything is designed for right-handed. From their early age they are exposed to everyday situations that require them to make small adaptions to for example open doors, use tools, or scissors. This trains them to use both hands in some activities. However, parents, caregivers and teachers should not force left-handed children to hold a pencil or a pen using their opposite hand (right hand). Teachers should accommodate left-handed students so that they can have the same opportunities as the rest of their peers who are right-handed.

b. Function of different lobes of the brain



Source: http://images6.fanpop.com/image/photos.jpg

- **Frontal lobe**
  - Personality, behavior, emotions
  - Judgment, planning, problem solving
  - Speech: speaking and writing (Broca's area)
  - Body movement (motor strip)
  - Intelligence, concentration, self awareness
- **Parietal lobe**
  - Interprets language, words
  - Sense of touch, pain, temperature (sensory strip)
  - Interprets signals from vision, hearing, motor, sensory and memory
  - Spatial and visual perception
- **Occipital lobe**
  - Interprets vision (color, light, movement)
  - Temporal lobe
  - Understanding language (Wernicke's area)
  - Memory
  - Hearing
  - Sequencing and organization

Application activity 11.5.1

1. Write true or false for the following statements

a. The right hemisphere of the brain is responsible for language and speech and is called the “dominant” hemisphere

2. Explain the role of 2 hemispheres

11.5.2. Factors of brain development

Activity 11.5.2

Observe the following pictures and write a key message from each, in relation with child’s brain development.

Source: https://umuryango.rw

a. What is the impact of early experiences on the brain?

Brain development is a process that begins shortly after conception and continues into our mid-twenties. Because brains are built in stages, with more complex structures built on simpler structures, it's crucial to get the early years right. Think of building a house: before framing the walls, a foundation has to be poured. Before wiring the house, walls and floors need to be built. Our brains are built in sequence too, and early childhood is about laying a solid foundation to serve as a base for later development. Once architecture is built, foundation repairs are costly, so supporting early childhood is a worthwhile investment.

Kids can't build strong brains by themselves—they need positive, nurturing interactions with trusted caregivers to support their development. These positive interactions are the bricks that build sturdy brain architecture, leading to improved learning and behavior as well as better physical and mental health throughout life.

b. Key messages to parents, caregivers and Pre-school teachers about their role in child's brain development

- **Nutrition during pregnancy and after birth**

Pregnant mother should eat well and avoid unnecessary drugs so as to boost the child's brain development.

After birth a child also needs to take good nutrients because, nutrition plays great role in child's brain development.

Breast feed the baby during 1000 days: during the first 1,000 days, the brain grows more quickly than at any other time in a person›s life and a child needs the right nutrients at the right time to feed her brain's rapid development. There are three crucial stages in the first 1,000 days: pregnancy, infancy and toddlerhood.

In the first 1000 days, breastfeeding reduces your child›s chances of being obese. Breastfeeding is a core part of "getting it right" in terms of nutrition in the first 1,000 Days. ... There are many benefits for Mums too, including a reduced risk of breast and ovarian cancer and lower rates of obesity later on in life.

- **Early stimulation**

Parents and caregivers should stimulate cognitive development of a child by talking to them, telling them stories, showing them attractive things.

Play games that involve hands. Using your hands shows young children how we physically interact with our world.

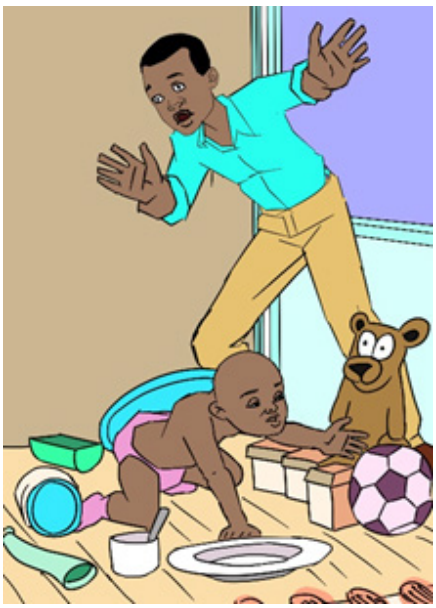
Reading books. Choose books with large and colourful pictures and read with the child .

- **Positive care**

Soothe, nurture, cuddle, and reassure her so that you build positive brain circuitry in the limbic area of the brain, which is involved in emotions. Your calm holding and cuddling, and your day-to-day engagement with your baby, signal emotional security to the brain.

- **Set up a safe environment for your crawling baby or toddler.**

Your mobile child will begin to understand spatial parameters and vocabulary such as under, over, big, little, near, and far, plus the relationship between objects of different shapes and sizes (those that are big versus little, for instance). He will start to establish mental maps of his environment and a comfortable relationship with the world in which he lives.

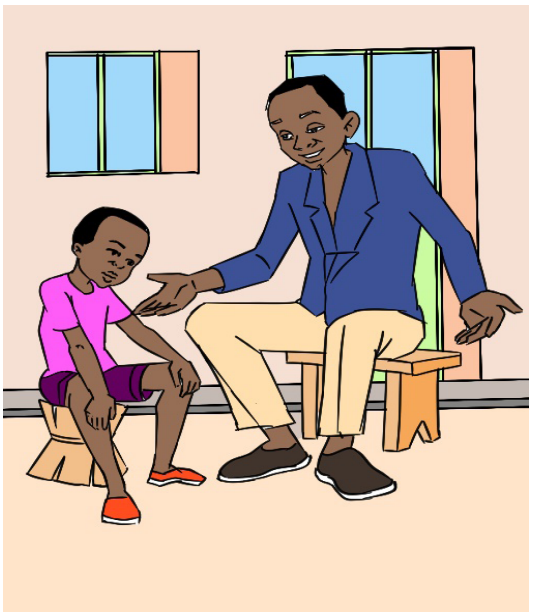


- **Provide clear responses to your baby's actions.**

A young, developing brain learns to make sense of the world if you respond to your child's behavior in predictable, reassuring, and appropriate ways. Be as consistent as possible.

- **Use positive discipline**

Create clear consequences without frightening or causing shame to your child. If your toddler acts inappropriately, such as by hitting another child, get down to her eye level, use a low, serious tone of voice, and clearly restate the rule. Keep rules simple, consistent, and reasonable for your child's age.



Application activity 11.5.2

1. Explain the factors that influence brain development.
2. How does mothers' 1000 days breastfeeding help their babies for brain development? When does it start and end?

END UNIT ASSESSMENT

Ingabire has a child aged 2 years, she wants to be advised about how she can contribute to the brain development of her daughter. If she comes to you for advice explain him how he can contribute.

UNIT 12: THEORIES OF HUMAN DEVELOPMENT

Key Unit competence: Apply principles and theories of human development in education both in school and real-life contexts.

Introductory Activity

1. Answer with YES or NO to the following statement and explain:
   a. Any 5years old child can perform the following mathematical operation: 5+6= .
   b. The majority of 2-6 years old children enjoy playing pretend games.
2. What are the traditional beliefs and practices in Rwanda about the following:
   i. Pregnant mother
   ii. Stages of human development

Introduction

Child development theories explain why and how children grow and develop (Mwagi, 2012). It is from that perspectives that theories were tested to indicate developmental stages through which a human being goes through and specific learning abilities and actions he might perform at a specific stages or age. Although those theories have some common grounds, they have different perspectives of behavior and development of a child as well. Theories which were developed and tested in the light of human development are those of Jean Piaget: “Theory of cognitive development”, Sigmund Freud: “theory of psychosexual development”, Erik Erikson: “Theory of psychosocial development”, and David Wood: “language development theory”.

12.1.Cognitive development theory (Jean Piaget 1896-1990)

Activity 12.1

Answer critically to the following question:

Haven't you ever seen young children imitating how to prepare food? How would you explain that phenomenon?

Jean Piaget was born in 1896 in Neuchatel and died in 1980 in Geneva, Switzerland. He suggested that cognitive development begins with a child's inborn ability to explore the environment. He contended that cognitive development occurs in four major stages which are age-related.

At each stage, the child's mind develops throughout different perspectives. He maintained that learning is based on simple sensory and motor activities to logical and abstract thought. According to Piaget, cognitive development occurs through the process of organization, adaptation and equilibration explained below:

- The first "O**rganization",** refers to the tendancy of increasing complex cognitive schemas or structures.
- The second "**Adaptation"** refers to how children handle new information in the light of what they already know. It involves the process of assimilation and accommodatation.
- The third "**Assimilation"**, has to do with grasping information and incorporating it into the existing cognitive structure.

The following examples help to understand the above concepts: The infants who are breast fed only develop a schema of the mother's milk which is sweet and liquid. If sweet water is introduced, the infant fits sweet water into the existing schema of the breast milk. Next, **accommodation** involves adjusting one's cognitive structures to fit the new information. For example, a child who has seen a dog may see a goat and think it is a dog, but after realizing that a goat is not a dog, he/she forms the schema of a goat.

At last according to Piaget, **cognitive equilibrium** which is the last stage has to do with a state of mental balance. It occurs when a person continuously attempts to reconcile new experiences with the existing ones. Children with these experiences are in the state of disequilibrium. They organize mental patterns that integrate the new experiences restoring a more comfortable state of equilibrium. This means that while teaching a person, the teacher should rely upon the lived experience of the learners to enable them easy understanding.

Piaget proposed the stages of cognitive development as summarised below:

Stages	Child's abilities
Sensory motor (birth-2 years)	– Manipulates objects through use of senses.
Pre-operational (2-7 years)	– Language appears imaginative player. He or she is egocentric.
Concrete operational (7-11 years)	– Performs simple operations with physical objects. – Reasons deductively. – Uses simple objects to arrive at conclusions.
Formal operational (11 years and-above)	– Reasons abstractly – Solves problems through deductive reasoning. – Employs logical thought.

a. Sensory motor stage (Birth-2 years)

This period is characterized by the child's reflex activity when he is involved in systematic natural reflex activities to assist him in learning the environment. In Piaget's view, this stage begins at birth and continues until about age 2. After extensive observations of infants and toddlers, especially his own three children, Piaget described the sensorimotor stage as a series of six sub-stages.

- **Sub-stage 1: Reflexes (Birth to 1 Month)**

In the first month of life, infants' behaviours reflect innate **reflexes**. These are automatic responses to particular stimuli. Because infants cannot endure on their own, new-born has specific built-in or prewired abilities for survival and adaptive purposes. The following are common infant motor reflexes:

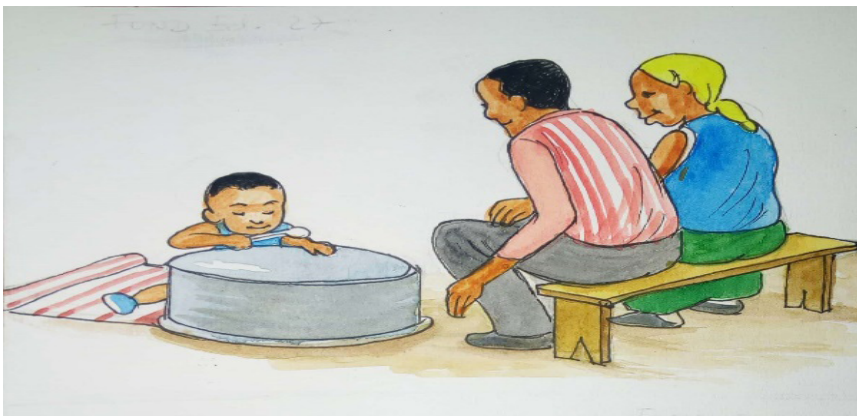
Reflex	Stimulus/Action
Blinking	In response to a puff of air or a bright light, the infant closes and opens rapidly its eyes.
Babinski	In response to stroking the side of its foot, the infant twists its foot inward and fans out its toes.
Grasping	In response to an object pressed against its palm, the infant attempts to grasp the object.
Moro	In response to a shock or loud noise, the infant arches its back and throws its arms outward.
Rooting	In response to stroking its cheek, the infant turns its head toward the touch and attempts to suck.
Stepping	In response to holding the infant so that its feet barely touch a surface, the infant "walks."
Sucking	In response to inserting a finger or nipple into its mouth, the infant begins rhythmically sucking.
Babinski	In response to stroking its forehead, the infant turns its head and opens its mouth.
Plantar	In response to touching the ball of the foot, the infant curls its toes under.

- **Sub stage 2: Primary Circular Reactions (1–4 Months)**

In the first few months of life, infants' behaviors are focused almost exclusively on their own bodies (in Piaget's terminology, the behaviors are *primary*) and are repeated over and over again (i.e., they are *circular*). Infants also begin to refine their reflexes and combine them into more complex actions. For example, an infant might now open and close her hand and then put it in her mouth.

- **Sub stage 3: Secondary Circular Reactions (4–8 Months)**

Sometime around 4 months, infants become more aware of and more responsive to the outside world (their behaviours become *secondary*), and they begin to notice that their behaviours can have interesting effects on the objects around them. For instance, a child of this sub-stage will continue to play with a spoon on a plate since it produces an enjoyable noise. These actions permit the infant to imitate spontaneously the behaviours, but they imitate only those actions they themselves have practiced many times.



- **Sub stage 4: Coordination of Secondary Circular Reactions (8–12 Months)**

After repeatedly observing that certain actions lead to certain consequences, infants gradually acquire knowledge of cause-effect relationships. Accordingly, they begin to engage in **goal- directed behaviour**: They behave in ways that they *know* will bring about desired results.

They also begin to combine behaviours in new ways to accomplish their goals.

- **Sub stage 5. Tertiary circular reactions (12-18 months)**

The circular reactions become experimental and creative. The infant repeats an action with variation aiming to provoke new outcomes. Tertiary circular reactions consist of attempting actively all the possible means of an action in order to discover the consequences of actions like what will happen if I do it this way? Psychologists call this stage discovering new means through active experimentation". The child explores the properties of objects by acting on objects in novel ways. Having for example, observed the relationship between a mate and a toy, the child will pull the mate so that he /she can take the toy. For the object permanence, the child has got the ability to search for a hidden object in different locations. Children are able to imitate unfamiliar behaviours.

- **Sub stage 6. Mental representation (18 months to 2 years)**

The last phase of the sensory-motor stage it is about "***Inventing new means through mental combinations*".** It involves the ability to make a mental representation that is the internal images of absent objects and past events. With the capacity to represent, children understand that objects can move or be moved when they are absent. Representation also brings capacity for deferred imitation that is the ability to remember and copy the behaviour of absent behaviour. They also begin to combine behaviours in new ways to accomplish their goals. Yet another acquisition at this sub-stage is "*Object permanence*"., The realization that physical objects continue to exist even when they are removed from view. For example, when a caregiver hides an attractive toy beneath a pillow, the infant knows that the toy still exists, also knows where it exists, and will attempt to retrieve it.

b. Pre-operational stage (2-6/7 years)

- **Sub-stage1: Pre-conceptual (2 – 4 yars)**

At this stage child can use one thing to represent another. Children use symbols and language to express themselves. The ability to use language to let a word stand for one object or person indicates a dramatic change in the child's intellectual functioning. Pre-operational children share with adult the ability to represent reality to themselves by means of signs and symbols. These thought processes are internal compared to the older children and adults. According to **Piaget**, the "*Semiotic function*" is a representational ability that emerges when the child is about 18 months old. It is a unified capacity that enables the child to represent an object or an event that is not present (a signified) by means of another object that is present (a signifier). Thus for example, a baby doll (signifier) will represent a child (signified).

- **Sub-stage 2: Intuitive Thought (4-7 years)**

Children tend to grow very curious and ask many questions; they begin the use of primitive reasoning. There is an emergence in the interest of reasoning and wanting to know why things are the way they are. Piaget called it the Intuitive sub-stage because children realise they have a vast amount of knowledge but don't know how they know it. In Preoperational thought, centration *is the act of focusing all attention on a single characteristic compared to the others*.

Some key characteristics of thinking of children during the pre-operational stage

The examples below about egocentrism, animism, artificialism, reversibility and conservation, show that at this stage children experience some limitations in their way of thinking.

- **Egocentrism**

Children are egocentric in thinking. At this stage, children see the world from their own view points. Egocentrism in children appears in two ways.

The first occurs when a child thinks that the non-living things can react, act, or move as human being. By thinking in this way, she/he refers to himself due to the fact that he has no barriers to go wherever he/she wants and he/she believes non-living things or animals can do so as well. Example, my "Hen come, let us go to have lunch". The hen does not have intelligence neither speak human language to understand him. Additionally, the hen cannot neither sit on chair nor eat on the plate.

The second egocentrism thinking refers self-centeredness regarding the surroundings things belongingness. In that sense, this egocentrism emerges when a child starts referring to him/her whenever he/she says something. The personal pronoun " I" predominates all his verbal interactions with others. That predominance of " I" leads to self-centeredness whereby a child can think that everything belongs to him or her.

For example, a child can cry or feel bad when he/she is with siblings and discuss to whom their Mamy belongs. That child will truely think that the mother belongs to him/or her alone. My Mamy, My Mamy. When siblings dispute with him or her, she/he cries.

- **Animism**

Animism refers to the illusion that a child may have about objects as if they have life like qualities - i.e thoughts, beliefs, emotions, feelings, intentions etc. Example - a child may think that sun is chasing the clouds. When he hits or fall on something, he/she feels hurt, when the mother or the guardian slaps the object on the ground, a child may think that the object will feel hurt too.

- **Artificialism**

Children may think that leaves fall of the trees because they want to make the ground warm or flowers grow to make us happy. They may want to know why the sky is blue and who painted it blue.

- **Reversibility**

Children at this stage have a problem of reversibility. When they go forward they are not able to go backward in their thinking; for example, if you had asked Denny last year what would happen if you put orange juice into an ice tray and put it in the freezer, he would have had to think hard. He knew that putting water into an ice tray results in ice, so he could figure out that putting juice into the ice tray would produce orange juice-flavored ice.

But if you asked Denny's little sister Nadia, who's only three, she wouldn't have any idea what would happen if you put orange juice into the ice tray. She'd just shrug her shoulders. This is because Nadia can't mentally manipulate the world in order to figure out what would happen with a substance other than water.

- **Conservation**

According to the psychologist Jean Piaget: conservation refers to a logical thinking ability that allows a person to determine that a certain quantity will remain the same despite adjustment of the container, shape, or apparent size,

The following are examples of tasks that Piaget used to test the conservation skills of children who are in Pre-operational stage. These examples show how pre-school children fail to demonstrate conservation skills.

<table>
<tr><th>Conservation tasks</th><th>Original presentation</th><th>Transformation</th></tr>
<tr><td>Guidance to the parent or caregiver/ pre-school teacher who gives the tasks</td><td>Prepare all the materials you need.

Make sure that you have the same/identical things before transformation.

Introduce the experiment: show all the materials and make sure that the child is quite and there is no language barrier

Ask the question to test the conservation skills

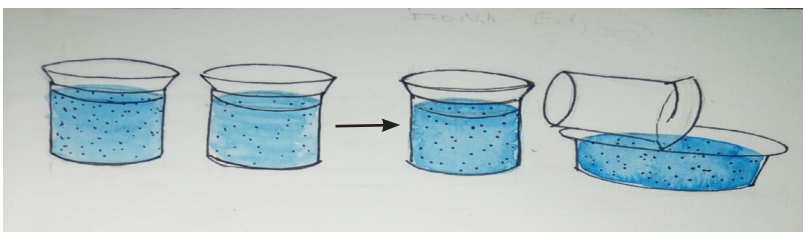
If the child says that it is not the same. It is too early to go to the next step.

If the answer is Yes: ask why and pay attention to the explanation he/she provides. Go to the next step.</td><td>For the child who said that it is the same in the first step, ensure that he/she witnesses the transformation process.

Invite him/her to carefuly observe the transformation.

Ask the question to test the conservation skills

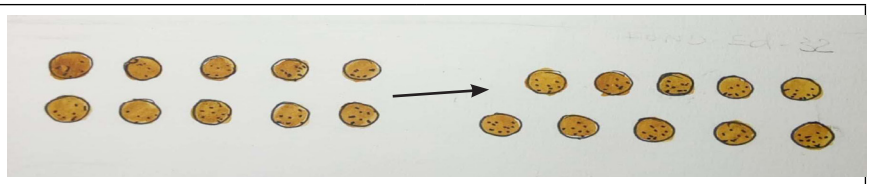
For the majority of 4-5 years old children the answer is NO. Please pay attention to the explanation he/she provides. This is an evidence that the conservation skills is not yet there.

If the answer is Yes: pay attention to the explanation he/she provides and go on with a similar task using different materials and setting up</td></tr>
<tr><td rowspan="2">Liquid</td><td colspan="2">  </td></tr>
<tr><td>Two identical glasses (A and B) are filled to the same level.

Question: Is there the same amount of water in each glass?

Answer: the child agrees that they have the same amount of water/juice to drink.</td><td>The content of one glass(B) are poured into a different shaped glass(C) so that the level of water in the two glasses is of uniqual height.

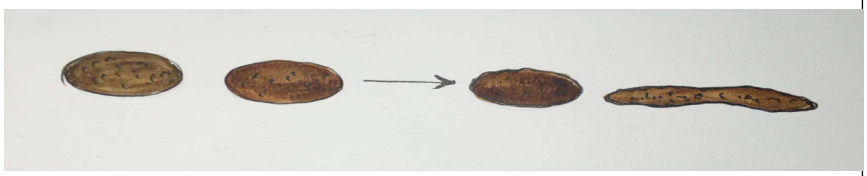
Question after transformation Ask: Now does the two glasses contain the same quantity of water or one glass contains more than the other?</td></tr>
</table>

<table>
<tr><td>Numbers</td><td colspan="2">  </td></tr>
<tr><td></td><td>The child observe the two row of the beads or stones.

Question: Is there the same number of beads?

Answer: Yes (Some children will explain that through simple observation, the length of rows is equal; others will count and conclude that the number of beads is the same in both rows.</td><td>Make sure that one row of beads is increased in length but the number remaining the same.

Question: Now is there the same number of beads or does one row have more?

Answer: Young children(4-5 years) who said before transformation that the 2 raws have the same number of beads(though observation) say that the second row has more beads (they consider the length of the row and not the number). No conservation skills yet!</td></tr>
<tr><td>Mass</td><td colspan="2">  </td></tr>
<tr><td></td><td>Two identical balls of modelling clay are presented.

A B
Question: Is there the same amount of clay in each ball?

The child agrees that they

have equal amount of clay</td><td>One ball is rolled into the shape of a sausage.

Question: Now, does each ball have the same amount of clay or does one ball have more?

Answer: The majority of children (4-5 years) say NO. Explainations can vary depending on child's judgement but there is no conservation yet!</td></tr>
</table>

Source: Adapted from Piagetian Conservation tasks retrieved from: https://www.pinterest.com

c. Concrete operational stage

The third Piagetian stage **is concrete operational** stage that occurs between the ages of 7 and 11 years and is characterised by the appropriate use of logic. Important processes during this stage are:

- **Transitivity:** the ability to recognise logical relationships among elements in a serial order - eg: if A is taller than B and B is taller than C, then A must be taller than C
- **Seriation:** the ability to sort objects in an order according to size, shape or any other characteristic.
- **Classification**: the ability to name and identify sets of objects according to appearance, size or other characteristic, including the idea that one set of objects can include another
- **Reversibility:** the child understands that numbers or objects can be changed, then returned to their original state. For this reason, a child will be able to rapidly determine that if 5+7 = 12, 12–7 will equal 5, the original quantity.
- **Conservation:** understanding that quantity, length or number of items is unrelated to the arrangement or appearance of the object or items.
- **Elimination of Egocentrism**: the ability to view things from another's perspective (even if they think incorrectly).

Note: In this stage, children can perform operations, and logical reasoning replaces intuitive thought as long as reasoning can be applied to specific or concrete examples. Children in this stage can only solve problems that apply to actual (concrete) objects or events, and not abstract concepts or hypothetical tasks.

d. Formal operational stage

The formal operational period is the fourth and final of the periods of cognitive development in Piaget's theory. This stage commences at around 12 years of age (puberty) and continues into adulthood. It is characterized by acquisition of the ability to think abstractly, reason logically and draw conclusions from the information available as well as apply all these processes to hypothetical situations. Now, individuals are able to think in an abstract way and solve problems symbolically without using objects in front of them.

Application activity 12.1

Take a student book of nursery 2, P3 and S1 in any subject or learning area. Write from them one activity and link it with the cognitive theory of Jean Piaget.

12.2. Psychosexual development (Sigmund Freud 1856-1939)

Activity 12.2

Almost all babies suck their thumbs and things in their mouth.

After reading the statement above answer to the following question:

1. Do you aggree with the statement ?
2. Explain based on your observation of babies

Freud's idea of personality development indicates that all human behaviours are caused by psychological factors that operate unconsciously. Moreover, Freud was of the view that people go through ***5 stages of psychosexual development*** and that people have one part of their body that gives more pleasure at each stage of development than the rest of the body.

In his theory there are some concepts that are mostly used and it is important to define them first:

- **Erogenous zones:** A part of the body that gives a strong pleasure at each stage of development.
- **Libido:** Sexual energy
- **Fixation**: It refers to the failure to mature beyond a particular stage of psychosexual development. This is due to when an excessive amount of energy or derivation of energy is tied to a particular stage.

Freud believes that the child passes through a series of psychosexual stages during the first five years of life with each stage originating in the sexual instincts of personality. For him, as children develop, they go through periods when pleasurable sensations are centered on particular areas of the body; ***erogenous zone of the body***. When an excessive amount of energy or derivation of energy is tied to particular stage, then ***fixation*** is likely to occur. These stages are known as psychosexual stages of development.

Five Freudian psychosexual stages are:

a. Oral stage (0-1 year of age)

It occurs during the first 18 months of life, in which the infant's pleasure centers around the mouth. Chewing, sucking and biting are chief sources of pleasure. These actions reduce the tension in the infant.

b. Anal stage (1-3 years of age)

It occurs between 11/2 and 3 years of age, in which the child's greatest pleasure involves the anus or the eliminative functions associated with it. In Freud's view, the exercise of anal muscles reduces tensions.

c. Phallic stage (3-6 years of age)

It occurs between the ages of 3 and 6. Its name comes from the Latin word phallus which means 'penis'. During the phallic stage, pleasure focuses on the genitals as both boys and girls discover that self-manipulation is enjoyable.

The phallic stage has a special importance in personality development because it is during this period that the Oedipus complex appears. This name comes from Greek mythology, in which Oedipus, the son of the King of Thebes, unwittingly killed his father and married his mother.

During this stage, the focus of sexual gratification shifts to **genital stimulation.** The infant's erogenous zone is **genitals**. At the same time, the so-called family romance emerges a child feels attracted to the parent of opposite r sex and also experiences jealousy of the same-sexed parent who is perceived as a rival. Freud coined ***Electra complex*** and ***Oedipus complex*** to describe this conflict in girls and boys respectively.

The Oedipus complex involves three people: A child, a mother and father. It is called so, after the tragic Oedipus Rex (King Oedipus), who, in Sophocles' play unknowingly killed his father and married his mother. This takes place when a boy seeks sexual pleasure by associating with his mother, but hates his father and sees him as a rival. The same as the girl; she seeks sexual pleasure by associating with her father, but hates the mother and sees her as a rival. He believes that most children find this situation stressful, so they resolve it. This identification will take place because the child realises that his/her same sex parent can punish him/her because of the incestuous wishes, or boys fear that their fathers will punish them by cutting off their penis. Fred called this fear ***the castration complex.***

d. Latency stage (6-12 years of age)

It occurs between approximately 6 years of age and puberty. During this period, the child represses all interest in sexuality and develops social and intellectual skills. This activity channels much of child's energy into emotionally safe areas and helps the child forget the highly stressful conflicts of the phallic stage.

e. Genital stage (12 years and beyond)

It is a time of sexual reawakening; the source of sexual pleasure now becomes someone outside of the family. Freud believed that unresolved conflicts with parents re-emerge during adolescence. When these conflicts have been resolved, adolescents are able to develop a mature love relationship and to engage in appropriate sexual behaviour, which may lead to marriage and childbirth.

Application activity 12.2

1. What behaviours do you observe at your school that lead to genital stage of adolescent?
2. What advise could you give to head teacher or principal to help students' effective learning.

12.3. Social development theories

A. Erick Erikson's psychosocial development 1902-1994

Activity 12.1.3

1. Ganza is two years old. Once he finds his mum washing shoes for him or doing laundry activities at home, Ganza always fights for doing so by himself.
2. What do you think are drives which make Ganza to do so?

Erik Erikson (1902-1994) opposes Freud's view of psychosexual stages of development by presenting a developmental view of people's lives in eight psychosocial stages of human development. In Erikson's theory; eight stages of development unfold as people go through the life span. Each stage consists of developmental task that confronts individuals with a crisis. The more successfully an individual resolves each crisis, the more psychologically healthy the individual will be. Each stage has both positive and negative sides.

a. Trust versus mistrust (0-1year of age)

This is Erikson's first psychological stage occurs in the first year of life. An infant becomes completely *dependent on adults* for the attainment of his basic needs. The development of trust requires a feeling of physical comfort, happiness, warm, nurturing, care giving positive outcome and guidance

from adults. On the other hand, mistrust develops when infants are treated too negatively or are ignored. The first and foremost task of an infant is to *develop the basic sense of trust in him /her and in environment.*

b. Autonomy versus shame and doubt (1-3 years of age)

It occurs in late infancy and the toddler years. After gaining trust in their caregivers, infants begin to discover that their behavior is *their own*. They assert their *independence* and realize their will (a child tends to develop a sense of autonomy and realizes that his/her behaviors are personal). If infants are restrained too much or punished too harshly, they develop a sense of shame and doubt.

c. Initiative versus guilt (3-6years of age)

It corresponds to early childhood, about 3 to 5 years of age. As young children experience a widening social world, they are more challenged than they were infants. To cope with these challenges, they need to engage in active, purposeful behavior. In this stage, adults expect children to become more responsible and require them to assume some responsibilities for taking care of their bodies and belongings. They express their autonomy in behavior. While developing a sense of responsibility children increase their initiative. Children develop uncomfortable guilt feelings if they are irresponsible or are made to feel too anxious.

d. Industry versus inferiority (6-12 years of age)

It corresponds approximately with the elementary school years, from 6 years of age up to puberty or early adolescence. Children's initiative brings them into contact with a wealth of *experiences*. A child of this age is full of energy and has effort to produce new things. As they move into the elementary school years. They direct their energy toward mastering knowledge and intellectual skills. At no time are children more enthusiastic about learning than at the end of early childhood when their imagination is expansive. The danger in the elementary school years is developing a sense of *inferiority, unproductiveness* and *incompetence* when they realize that they are still children and that they cannot produce.

e. Identity versus identity confusion (12-19/21 years of age)

It corresponds to the adolescent years. Adolescents try to find out who they are, what they are all about, and where they are going in life. This is the stage in which individuals build castles in the air, trusting their imagination by gaining what they cannot attain in real life. They are confronted with new roles and adult statuses (such as vocational and romantic).

Adolescents need to be allowed to explore different paths to attain a healthy identity. If they do not adequately explore different roles and don't carve out a positive future path, they can remain confused about their identity.

f. Intimacy versus isolation (21-34 years of age)

It corresponds to the early adult years (The twenties and thirties). The developmental task is to form positive relationships with others. Erikson describes intimacy as finding oneself, but losing oneself in other person. The hazard of this stage is that one will fail to form an intimate relationship with a romantic partner or friend and become socially isolated. For such individuals, loneliness can become a dark cloud over their lives.

g. Generativity versus stagnation (34-64 years of age)

It corresponds to the middle adulthood years, the forties and fifties. Generativity means transmitting something positive to the next generation. This can involve such roles as parenting and teaching, through which adults assist the next generation in developing useful values and skills. Erikson described stagnation as the feeling of having done nothing to help the next generation.

h. Integrity versus despair (64 and above)

Is Erikson's eight and final psychological stage. Older adults review their lives, reflecting what they have done. If the retrospective evaluations are positive, they develop a sense of integrity. That is, they view their life as positively integrated and worth living. In contrast, older adults become despairing if their background glances are mainly negative.

B. Attachment theory John BOWLBY 1907-1990

Social development refers to individual relationship and others. Social interactions start in the context of care that parents particularly the mother provides for the child since his or her birth. From these relationships, attachment is created. *Attachment is defined as the strong, affectional ties we feel for special people in our lives that leads us to feel pleasure and joy when interact with them*. Babies are born with behaviours like crying, babbling and laughing to gain adult attention & on the other side; adults are biologically programmed to respond to their signals. Attachment promotes contact and intimacy.

According to Bowlby, the following are the 4 phases of attachment:

- Pre-attachment Phase (Birth – 6 Weeks)
- "Attachment in Making" Phase (6 Weeks – 6 to 8 Months)

- "Clear Cut" Attachment Phase (6-8 Months to 18 Months-2 Years)
- Formation of Reciprocal Relationship (18 Months – 2 Years and on)

a. The pre attachment phase (Birth-6 Weeks of age)

During this period, babies smile at anybody and can be comforted by anybody. Thehe innate signals attract the caregiver (grasping, gazing, crying, smiling while looking into the adult's eyes). When the baby responds in a positive manner, the caregivers remain close by. The infants get encouraged by the adults to remain close as it comforts them. Babies recognize the mother's fragrance, voice and face. They are not yet attached to the mother and don't mind being left with unfamiliar adults as they have no fear of strangers.

b. Attachement in making" phase (6 Weeks – 6 to 8 Months)

Babies smile and react to their caregivers more often than other persons. Infants responds differently to familiar caregivers than to strangers. The baby would smile more to the mother and babble to her and will become quiet more quickly, whenever picked by the mother. The infant learns that his/her actions affect the behavior of those around. They tend to develop a "Sense of Trust" where they expect the response of caregiver, when signalled. They do not protest when they get separated from the caregiver.

c. "Clear cut" attachment phase (6-8 Months to 18 Months -2 Years)

Babies protest when caregivers leave them alone. Most babies develop attachment to other family members and family friends. The attachment to familiar caregiver becomes evident. Babies show "separation anxiety", and get upset when an adult on whom they rely, leaves them. This anxiety increases by week 6 -15 months, and its occurrence depends on the temperament and the context of the infant and the behavior of the adult. The child would show signs of distress, in case the mother leaves, but with the supportive and sensitive nature of the caretaker, this anxiety could be reduced.

d. Formation of reciprocal relationship (18 Months – 2 Years and on)

From two years, children know that their behavior can influence that of caregivers. That is why they cry in supermarkets so that mothers buy sweets for them or cry for whatever in which they find pleasure to own it. They try also to understand the motives of others, that is, when the mother goes out, she should tell him for instance what to do with his/her toy. With rapid growth in representation and language by 2 years, the toddler is able to understand few factors that influence parent's coming and going, and can predict their return. Thus leading to a decline in separation protests.

The child can negotiate with the caregiver to alter his/her goals via requests and persuasions. Child depends less on the caregiver along with the age.

The following factors influence attachment:

- Mothers' personality and her relationship with her baby. The mother should show a positive attachment.
- Temperament of the baby exerts an influence on the person who cares for it.
- Mother's work should not have a negative effect on the baby.
- Psychological factors such as unhappy marriage, poverty and lack of social support have negative attachment on the personality of the baby. (Kaleeba and 2004)

Application activity 12. 3

Think about the theories of Psychosocial development in teaching and learning and the theory of attacheemnt in parenting and discuss their implication in teaching and learning

12.4. Moral development theories

Activity 12. 4

IHIRWE and KALISA are primary **1** learners. They are obedient to either parent or teachers by conforming to their rules. Once they have committed errors, they are fearful to the attitudes that either parents or teachers will have on them.

1. Why do they have fear to commit errors?
2. Do you think the attitude of these children towards the rules at this age will it be the same when they are 18 years old?

A. Piaget's theory of moral development

According to Piaget (1932-1965), morality consists of a set of rules that are handed down from adults to children. He identified two broad stages of moral understanding; heteronomous and autonomous morality.

Heteronomous morality or the moral realism (5 to 10 years)

The word heteronomous means under the authority of another. As the term suggests, children of this stage view rules as stipulated by significant others (parents, teachers as well as God), as having permanent existence, unchanged and requiring strict obedience.

During and before early school years, children have little understanding of rules that that govern social behaviour. When they play rule-oriented games, for example, they do not mind about wining, losing, or coordinating their actions with those of others.

At the age of 5, they start to show much more concern with and respect for rules. According to Piaget, two factors limit children's moral understanding:

- The power of adult to insist that children comply, which promotes unquestioning respect for rules and those who enforce them.
- Egocentrism, children think that all people view rules in the same way, their moral understanding is characterised by realism. That is, they consider rules to be permanent and features of reality rather than subjective principles that can be modified at will.

Children of the heteronomous age believe in immanent justice that wrong doing inevitably leads to punishment. They think that moral order is only maintained by punishment.

Autonomous morality or morality of cooperation (about 10 years and above)

This is Piaget's second stage of moral development, in which children view rules as flexible, socially agreed-on principles that can be revised to fit the will of the majority. Children at this stage cease to regard unquestioning obedience to adult as a sound basis for moral action. They recognise that sometimes there may be justified reasons to violate or changer a rule. Also, they discard the view that wrongdoing is inevitably punishable. Instead punishment should be rationally related to the offense.

B. Kohlberg's theory of moral development

Like Piaget, Kohlberg contends that morality is developed in a series of stages. His theory considers six of these, categorized within three major levels. The pre-conventional level (0 to 9 years), the conventional level (9 to 15 years), and the post- conventional level (age 16 and over).

a. The pre-conventional level (0 to 9 years)

At this level, children have little conception of socially acceptable behavior. They unquestionably accept the rules of authority figures, and actions are

judged by their consequences. Children at this level will reason in ways designed to bring them pleasure and avoid punishment. Behaviors that culminate in punishment are considered as bad, and those that lead to rewards are seen as good.

Stage 1: The punishment and obedience orientation

At this stage, children begin to follow rules in order to avoid punishment. They conform to rules imposed on them by authoritarian figures. True rules awareness is not yet established; children's moral conduct is based largely on fear associated with rules violation.

Stage 2: The naively egoistic orientation or instrumental purpose orientation

Regarding this stage, children reason that by taking the right action, they usually earn some tangible reward. According to Kohlberg, a sense of reciprocity is in operation here, children do right things to appease others and expect some sort of return favour.

b. The conventional level (9 to 15 years)

At this level, children continue to view conformity to social rules as vital, but not for purposes of self-interest. They believe that adhering to social norms is important for ensuring mutual human relationships and societal order.

Stage 3: The 'good boy-good girl orientation' or the morality of interpersonal cooperation. Children of this stage want to maintain the affection and approval of friends, and significant others. They want to be regarded as good persons, trustworthy, loyal, respectful, and helpful.

Stage 4: The social order-maintaining orientation:

At this stage child take into account societal laws. They will insist that there are rules, which must not be disobeyed. If these rules are broken, then punishment will certainly follow. These youngsters believe laws are vital for ensuring social order. Children's ideas about guilt usually start during this stage.

c. The post conventional or principled level (16 years and over)

At this level, individual do not maintain social order for the sake of doing it, but recognize principles of making choices that involve reasoning and consistency. They see and do things for the general good of a wider community, and are concerned more with wider social justice. There are also two stages in this level.

Stage 5: The social-contract orientation

People at this stage start to become aware of the interest of the wider community, and of the individual. They start to see that the community's needs may sometimes be at a greater importance than individual needs. They consider societal rules as flexible instruments for furthering human purposes. They can objectively judge whether the laws imposed by the society are fair, common, or need to be changed to suit a certain situation. One has an obligation to obey the rule (social contract orientation).

Stage: The universal ethical principle orientation

At this stage, individuals make their judgments on the basis of universal ethical principles regardless of law and societal agreement. These values are abstract no concrete rules like the Ten Commandments. The right action of an individual is defined by self-chosen ethical principles that are rational and universally applicable.

Application activity 12.4

Read your school internal regulations and come up with supportive ideas that highlight their link with Kohlberg's Moral or Jean Piaget moral Development Theory.

12.5. Language development by David Wood

Activity 12.5

1. With reference to language development, look at the statement here below and discuss their accuracy in relation with language acquisition. Before making words, children raise their voices by crying to make differrent.
2. Two years old children cannot understand a proverb, but they will be able to understand it when they are in adulthood. Discuss why?

Stage	Sub-Stage	Description
Pre-linguistic stage	Crying (From Birth)	The first vocalization made by an infant at birth is a cry. Crying, although it is not a language in the same sense as words, is considered a language because it aids the infants' communication. It is the child's only way to tell others that somethings is going wrong with him such as (feel of hunger, pain of some sort etc.
	Cooing (From 3 months)	This is the first type of non- crying vocalization. Cooing consists of a repetition of vowel sounds for instance aaa….. eee…. Ooo….. infants usually coo when they are happy or excited.
	Babbling (From 6 months)	It consists of a repetition of combined consonants and vowel sounds such as "mama mama", babababa" dadadada" etc
Post linguistic stage	First words (12 months)	Babies usually say their first real words at about 12 months of age. Often the child's first word approximates adults sound patterns, as when "boo" is used to refer to book and" milk" is used to refer to milk. Sometimes, however, children use a totally different sound sequence than the one used by adults to refer to an object or an action.
	Holophrase (14-18 months)	With the acquired ability to vary intonation children begin to express themselves using one word. For example, a baby can use the word "Milk" with different intonations to mean different things.

		A baby can say “milk” with a rising intonation to mean, “is that milk?”or “can I have milk?” saying milk with a falling intonation might mean “this is milk”. Or “give me milk”. A single word, like milk in this case, that expresses a more complex meaning or sentence is called a “**holophrase”.**
	Telegraphic Speech/ two word sentence (18-24 months)	Between 18 and 24 months, children usually begin to combine words into primitive sentences. These sentences are not grammatically correct. For example “mama milk”, “mama me milk”, “No bed”, “Jane book” etc.
	Multiple word sentence Above 2 years	The child reaches this stage between the ages of two and a half. Grammatically, morphemes in the form of prefixes or suffices are used when changings or tenses. Furthermore, the child can now form sentences with a subject and predicate. Example: car is big, I want more sugar.
	More complex grammatical structure Above 3 years	The child uses more intricate and complex grammatical structures; elements are added like conjunctions embedded and prepositions. Example: Read it, my book (conjunction) Where is Daddy? (embedding)
	Adult like language structures 5 and 6 years and above	Complex structural distinctions can now be made. Examples: Ask him what day it is. He promised to help her.

Application activity 12.5

Being aware of the route that children pass through when developing their language, provide a scenario describing attainment of a certain level of language at a certain age.

END UNIT ASSESSMENT

1. Establish the behavioural parallelism of child development stages and adolescence and propose effective ways of dealing with their behaviours based on their smilar, or different behaviours and different categories of age.
2. Think a behaviour/situation that you can observe on a person from your family, class or community which justify the developmental theories. And write the identified behaviour under its related theory. For instance: in cognitive theory of development: My young brother aged at 3 years doesn't want to share the toys. He always says that everything new is his. This is egocentrism.
3. Describe the role of Piagetian Theory in today's world of teaching

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UNIT 13: DEVELOPMENTAL MILESTONES

Key Unit competence: Cater for holistic development of learners at different ages

Introductory Activity

After observing images or watching one of the videos that show different stages of human development, take notes on piece of paper individually and thereafter, you present what you have watched in a plenary session. At a given stage of human growth and development, describe things you realized they cannot be achieved before that stage. Get introduced on concept "developmental milestones" using dictionary or internet and try to construct the meaning of the concept.

13.1. Prenatal Period

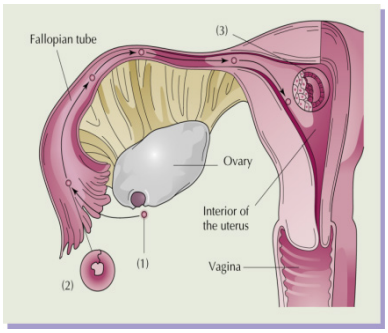
13.1.1 Prenatal Stages

Activity 13.1.1

Watch videos/images on prenatal period and discuss the events that happened before birth and write it down on the piece of paper.

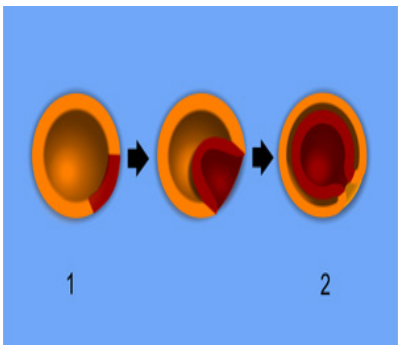
The average length of time for prenatal development to complete is 38 weeks from the date of conception. During this time, a single-celled zygote develops in a series of stages into a full-term baby. The three primary stages of prenatal development are the germinal stage, the embryonic stage, and the foetal stage. This period of pregnancy is divided into 3 trimesters which have different characteristics for expectant mothers and the developing foetus.

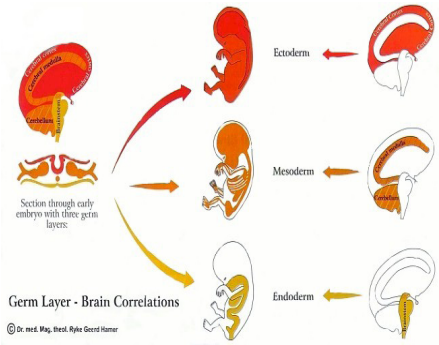
a. Germinal stage



This is the first period of pre-natal development that occurs in the first two weeks after conception. During this period a zygote is created, continued cell division takes place and attachment of the zygote to uterine wall also takes place. **The zygote is a single cell formed by the union of male gamete and that of female through fertilization.** The zygote is made up of 100-150 cells a week after conception. The inner and outer layer of organism is formed at this stage. This period is also called zygotic period because it is in that time zygote is created. The implantation which is the attachment of the zygote to the uterine wall occurs ten days after conception.

b. Embryonic stage occurs





Soon after implantation, the cells continue to rapidly divide and clusters of cells begin to take on different functions. A process leads to the formation of three distinct layers called germ layers: the ectoderm (outer layer), the mesoderm (middle layer), and the endoderm (inner layer). As the embryo develops, each germ layer differentiates into different tissues and structures. For example, the ectoderm eventually forms skin, nails, hair, brain, nervous tissue and cells, nose, sinuses, mouth, anus, tooth enamel, and other tissues. The mesoderm develops into muscles, bones, heart tissue, lungs, reproductive organs, lymphatic tissue, and other tissues. The endoderm forms the lining of lungs, bladder, digestive tract, tongue, tonsils, and other organs.

The process of differentiation takes place over a period of weeks with different structures forming simultaneously. During this period the life supports develop, these are: placenta, the umbilical cord and the amnion. The placenta is the life support system that consists of tissues in which small blood vessels from the mother and the offspring intertwine but are not joined at all. The amnion is a bag-like structure filled with fluid in which the developing embryo floats. Some of the major events that occur during the embryonic stage are as follows:

Week 3: Beginning development of the brain, heart, blood cells, circulatory system, spinal cord, and digestive system.

Week 4: Beginning of the development of bones, facial structures, and limbs (presence of arm and leg buds); continuing development of the heart (which begins to beat), brain, and nervous tissue.

Week 5: Beginning of the development of eyes, nose, kidneys, and lungs; continuing development of the heart (formation of valves), brain, nervous tissue, and digestive tract.

Week 6: Beginning of the development of hands, feet, and digits; continuing development of brain, heart, and circulation system.

Week 7: Beginning of the development of hair follicles, nipples, eyelids, and sex organs (testes or ovaries); first formation of urine in the kidneys and first evidence of brain waves.

Week 8: Facial features become more distinct, internal organs are well developed, the brain can signal for muscles to move, heart development ends, external sex organs begin to form. By the end of the embryonic stage, all essential external and internal structures have been formed.

c. Foetal stage

Prenatal development is most dramatic during the foetal stage. When an embryo becomes a foetus at eight weeks, it is approximately 3 centimetres in length from crown to rump and weighs about 3 grams. By the time the foetus is considered full-term at 38 weeks gestation, he or she may be 50 centimeters or 3.3 kilograms. Although all of the organ systems were formed during embryonic development, they continue to develop and grow during the foetal stage. Examples of some of the major features of foetal development by week are as follows:

Weeks 9–12: The foetus reaches approximately 8 cm in length; the head is approximately half the size of the foetus. External features such as the face, neck, eyelids, limbs, digits, and genitals are well formed. The beginnings of teeth appear, and red blood cells begin to be produced in the liver. The foetus is able to make a fist.

Weeks 13–15: The foetus reaches approximately 15 cm in length. Fine hair called lanugo first develops on the head; structures such as the lungs, sweat glands, muscles, and bones continue to develop**.** The foetus is able to swallow and make sucking motions.

Weeks 16–20: The foetus reaches approximately 20 cm in length. Lanugo begins to cover all skin surfaces, and fat begins to develop under the skin. Features such as finger and toe nails, eyebrows, and eyelashes appear**.** The foetus becomes more active, and the mother can sometimes begin to feel foetal movements at this stage**.**

Weeks 21–24: The foetus reaches approximately 28.5 cm in length and weighs approximately 0.7 kg. Hair grows longer on the head, and the eyebrows and eye lashes finish forming. The lungs continue to develop with the formation of air sac (alveoli), the eyes finish developing. A startle reflex develops at this time.

Weeks 25–28: The foetus reaches approximately 38 cm in length and weighs approximately 1.2 kg. The next few weeks mark a period of rapid brain and nervous system development. The foetus gains greater control over movements such as opening and closing eyelids and certain body functions. The lungs have developed sufficiently that air breathing is possible.

Weeks 29–32: The foetus reaches approximately 38-43 cm in length and weighs approximately 2 kg. Fat deposits become more pronounced under the skin. The lungs remain immature, but breathing movements begin. The foetus's bones are developed, but not yet hardened.

Weeks 33–36: The foetus reaches approximately 41-48 cm in length and weighs 2.6-3.0 kg. Body fat continues to increase, lanugo begins to disappear, and fingernails are fully grown. The foetus has gained a high degree of control over body functions.

Weeks 36–38: The foetus reaches 48–53 cm in length is considered to be full-term by the end of this period. Lanugo has mostly disappeared and is replaced with thicker hair on the head. Fingernails have grown past the tips of the fingers. In a healthy foetus, all organ systems are functioning.

Foetal Learning

Today, doctors realize that babies begin to engage many of their senses and to learn about the world around them during the last trimester of pregnancy and may be even before. A baby can hear the sounds of his mom's body her stomach growling, her heart beating, the occasional hiccup or burp, but he can also hear noises from beyond. Perhaps the most significant one a baby hears in uterus is his mother's voice.

Around the seventh and eighth month, a foetus's heart rate slows down slightly whenever his mother is speaking, indicating that mom's voice has a calming effect. A developing foetus gets all the information needed just by listening in on his mother's conversations with others. He also may be picking up something from any books she reads aloud. Besides being able to tell the difference between English and French, a study shown that babies in the womb may be able to recognize the specific rhythms and patterns of the stories they hear. A baby's eyes, which form in the first trimester, are sealed, shut until about the seventh month. After they open, the foetus is able to see, but there's little or no light to see anything. Some doctors have reported, however, that if you shine a very bright light up inside the uterus, the foetus will turn away from it.

Taste buds develop in a foetus around the seventh or eighth week and, by week 14; there are some evidences which indicate that he can taste bitter, sweet, or sour flavours in the amniotic fluid. As with his other senses, he uses taste to explore the womb around him**.** Ultrasounds have even shown that foetuses lick the placenta and uterine wall. Studies indicate that the flavours and aromas of the foods mom eats during pregnancy, which pass through to her amniotic fluid, may affect her baby's taste preferences long after birth.

An unborn baby not only tastes foods, but can smell them as well. Doctors have noted that, at birth, amniotic fluid sometimes carries the scent of cumin, garlic, fennel, and other spices a mother has eaten while pregnant. Amniotic fluid, which babies swallow and breathe in during their time in utero, not only has the smells of the foods mom eats, but of mom herself. That, in fact, may be how new born recognizes their mothers.

Babies eagerly investigate whatever they can get their hands on and the fun starts before birth. As early as 20 weeks, foetuses react to what's around them. But it isn't until the third trimester that they really begin to grow curious about their intrauterine world. Though there isn't a whole lot in there to play with, foetuses entertain themselves by sucking on their hands and fingers (especially their thumb, which they discover at about 18 weeks). They also 'walk' around by pushing on the uterine walls with their feet, and yank, pull, and swing their umbilical cord they even practice breathing. All this playing around helps them develop important reflexes they'll need once they're born.

Labour and childbirth

Labour refers to the energy and effort used to move the baby out of the mother's body. It is accomplished through a series of contractions in the uterine muscles. These contractions cannot be controlled by the mother.

Therefore, they are referred to as involuntary. Hormones inside of the mother control the onset, length, and strength of these contractions. The average length of labour for a first baby is between 12 and 14 hours. However, each woman's labour will vary and may be as short as three hours or last 24 or more hours.

There are several signs indicating the beginning of labour. These include:

- **Lightening:** this is a change in the position of the baby. The baby drops lower in the pelvis, relieving the abdominal pressure on the mother and making her breathing easier.
- **Contractions of the uterus**: these contractions begin as weak cramps and a backache gradually increasing in intensity and coming at more frequent and regular intervals.
- **Passage of the mucous plug from the cervix**. Sometimes referred to as "the show" or "the bloody show" because it is blood tinged.
- **Rupturing of the bag of water as the mio-chorionic membrane ruptures**. This may be a small trickle or a gush of fluid.

Labour is divided into three stages

a. Dilation stage

In order for the baby to pass from the uterus to the vagina, the cervix must first stretch and expand. This is referred to as dilation. At first, the cervix is approximately inch in diameter. The contractions push the baby's head against the cervix, causing it to widen. At the end of this stage of labour, the cervix is approximately 4 inches in diameter. If the bag of water has not ruptured by this time, the physician will break it.

This stage of labour is further divided into three categories. These categories are:

- Early labour
- The cervix dilates from 0-4 cm in diameter. Contractions may or may not be regular, coming 5-10 minutes apart. Most women are still home at this time.
- **Active labour:** The cervix dilates from 4-8 cm. The uterine contractions will be longer, more regular, and more frequent. The mother should be in the hospital by this time.
- **Transition:** The cervix dilates from 8-10 cm or complete dilation. The Mother's contractions become more frequent and much stronger. They are 1-3 minutes apart. During transition the baby's head moves from the uterus and into the vagina or the birth canal. This is the most difficult period of childbirth and is the time when anaesthetic will most likely be given.

The dilation stage lasts the longest. The length of time varies with each birth; however, the average length for first pregnancies is eight hours. Remember, during this time, most hospitals will use a foetal monitor to record the strength and duration of contractions, as well as the baby's heartbeat.

b. Expulsion stage

This stage begins when the baby's head is in the birth canal and ends when the baby is born. This stage does not last long, usually 5-10 minutes. During this stage, contractions become more frequent and longer.

The contractions occur 1-3 minutes apart and last about 1 to 1 minutes and 30 seconds. During the first stage, the function of the contractions is to dilate the cervix. In the second stage, their function is to push the baby out through the pelvis and the birth canal.

Crowning refers to the time when the baby's head is first seen. At the time of crowning, the physician or midwife will decide whether or not to perform an episiotomy. This is a small incision from the vagina to the anus in the perineum to prevent tearing. At the completion of birth, the incision is stitched closed.

c. Afterbirth stage

The contractions of the uterus continue, causing the placenta to separate from the wall of the uterus and be expelled. The afterbirth, which is expelled, consists of placenta, umbilical cord, amniotic sac, and lochia.

Childbirth, although a natural process, is difficult for both the mother and the baby. Fortunately, nature makes this easier.The unborn baby's skull is soft and flexible so it can become longer and more narrow, allowing it to pass through the pelvis more easily.

During the birth process, complications may arise.The baby experiences great pressure as it is pushed out of the uterus and through the birth canal. At times, the umbilical cord may be constricted, restricting blood flow to the baby. In some instances, the mother's pelvis may not be large enough to allow passage of the baby. Sometimes the placenta is positioned close to or covering the cervix and must be delivered before the baby. In these instances, the doctor may decide to perform a caesarean section to avoid danger to the mother or baby. This is performed by making an incision in the mother's abdomen and uterus. The baby is then removed from the uterus before it enters the birth canal.

However, a vaginal birth, if possible, is best for the infant for several reasons: it helps expel any fluid out of the lungs, and the baby must fight more, which develops strength in the baby.

In most instances, the baby's face is looking downward as the head emerges. This is called a posterior position. Some babies are born in an anterior position. The head then rotates to the side; the shoulders come out one at a time, followed by the abdomen and legs. In some instances, the baby is not positioned correctly and will emerge buttocks, feet, or shoulders first. This is referred to as "breech." This type of birth is more difficult for both the mother and the child and, in many instances the doctor will try and turn the baby or a caesarean section will be performed.

Application activity 13.1.1

1. Make a poster with the timeline of prenatal development and label it correctly.
2. Explain how babies learn before birth.

13.1.2. Risk factors for women and infants during pregnancy

Activity 13.1.2

Catherine is an expectant mother. She is not good at home since she is living in extreme misery. In addition to that Catherine is suffering from malnutrition and an intense fatigue.

Do you think Catherine's life experience will impact on her baby? Explain how and why?

There is a number of factors or influences or hazards that can harm an unborn child and there is essential that prospective parents and teachers as well have to be aware of these influences. Thus prenatal risk factors include:

- **Chronic maternal illness**: Maternal illnesses increase the chance that your baby will born with a birth defect or have a **chronic** health problem. Diabetes, cytomegalovirus, toxoplasmosis and Strep B are just a few of the **illnesses** that can cause an adverse outcome to pregnancy.

- **Certain maternal infections:** Maternal infection is an infection acquired by the mother who then transmits the **infection** to the foetus. This transmission can occur via the placenta before delivery or via the birth canal during labor and delivery when the baby is exposed to maternal blood.
- **Maternal health and illness**: Stress during pregnancy may cause the child to be hyperactive while severe malnourishment may lead to the death of the foetus. Less severe malnutrition may contribute to condition such as cerebral palsy and brain damage. Disease such as rubella, syphilis, gonorrhoea or malaria during pregnancy may cause the unborn child to suffer from condition such as mental deficiency, blindness or deafness.
- **Maternal age**: Young mother are likely to have children with neurological defects. Children of over 40 years old mother face a chromosomal abnormality risk for example Down syndrome.
- **Rhesus factors**: Children inherit the blood group from the parents. A problem arises when one of the parents is Rh + (positive) and the other one is Rh - (negative). Due to blood incompatibility interaction of the maternal and foetal blood produce antibodies in the mother's blood. These antibodies will not affect the first baby, but they will stay in the mother's blood and affect the second baby. Fortunately, Rhesus factor problems are preventable.
- **Mother's emotional state:** When the emotional state of the mother changes, there is a release of chemical product into the blood stream. These chemical reaches the foetus and irritate it. Depending on the emotional state of the mother, the duration and the intensity of the emotion, effect on the foetus may be short or long-term.
- **Radiation** Large doses of radiation such as those used in X-rays photography are known to damage the foetus or induce abortions. The most dramatic illustrations of the effect of atomic bomb on Hiroshima in Japan in 1945 during the Second World War shows that pregnant mothers less than 20 weeks and within half mile of the center of explosion gave birth to physically or mentally abnormal child.
- **Maternal diseases:** Foetal infection can occur from maternal diseases since the foetus receives its nourishment from the mother through the placenta and umbilical cord. Some maternal diseases are:

  Rubella: is a maternal disease that damage prenatal development of children. Children born with rubella may have defects, such as mental retardation, blindness, and deafness and heart problems.

The greatest danger of this disease is in the 3rd or 4th week of pregnancy. Hence it occurs during organogenesis (when organs are being formed)

Syphilis: This is devastative later in prenatal development in 4th or more months after conception. Unlike rubella that damages organogenesis, syphilis damages organs that have been formed.

Genital herpes: This may be contracted during birth; newborns contract the herpes simplex virus II when they are delivered through the birth canal of mothers with genital herpes. Nearly 1/3 of babies delivered through the birth canal die and ¼ become brain damaged. This can be prevented by using caesarean section to keep the virus from infecting the newborn.

HIV/AIDS: Today the number of women with HIV is growing steadily especially in developing countries. There are three ways a mother can who suffers from HIV/AIDS can infect her offspring:

* During gestation across the placenta.
* During delivery through contact with maternal blood or fluids.
* Postpartum through breast-feeding.

- **Miscarriage and abortion :** a miscarriage or spontaneous abortion occurs when pregnancy is brought to an end before the developing organism is mature enough to survive outside the womb. Today's spontaneous abortion is brought about by abnormalities of reproductive tract, viral or bacterial infections and sometimes by severe traumas.
- **Maternal nutrition: t**his can affect normal development especially of the foetal brain as well as physical aspect. The foetus depends on its mother for nutrition, which comes from the mother's blood. A pregnant woman requires appropriate level of proteins, vitamins, minerals, etc. A woman's nutrition influences her ability to reproduce and give birth to a healthy child. Otherwise she may stop menstruating, hence making conception impossible.
- **Environmental hazards**

Radiation, chemical and environment pollutants and toxic waste of modern industrial world are dangerous to the foetus. For instance, radiation can cause gene mutation (abrupt but permanent change in genetic material). Fathers who are often exposed to a high level of radiation have higher level chances of producing children with chromosomal abnormalities. X-ray can also affect development of embryo during pregnancy.

- **Psychological hazards:** Maternal stress can easily be transmitted to the foetus. When an expectant mother is exposed to intense fears, anxieties and depression, physiological change occurs in respiratory and glandular systems.

  For instance, due to fear, adrenaline may be produced with restricts blood flow to the uterus and may deprive the foetus of adequate oxygen. The mother's emotional state during pregnancy can influence the birth process. An emotional mother might develop irregular contradictions and more difficult labour period.

- **Drugs:** Excessive smoking and drinking are dangerous to normal development especially during embryonic and foetal periods. Taking the wrong drugs at the wrong time may make on offspring physically handicapped for life for instance: Thalidomide, when taken during pregnancy might prevent growth of arms and legs. Heavy drinking during pregnancy can lead to deformed limbs, face, heart and mental retardation. Cigarette smoking by pregnant woman can cause foetal and neonatal death as well low birth weights.

Application activity 13.1.2

1. Describe risks or influences that are most likely to occur in our society and suggest ones that we can learn to manage.
2. Growth and development are a continuous process that is one stage of development lays the foundation for the next stage of development. Refer to this principle of human growth and development to explain why we should cater for pregnancy

13.1.3. Key message and recommended practices during pre-natal period

Activity 13.1.3

Advise mothers who experience problems similar to those she encountered in order to help them diliver their babies successfully and ensure the smooth development of their children.

a. Pregnancy birth and thereafter

- Once the pregnancy is confirmed, the mother needs to visit a healthcare worker or clinic and continue to go for regular check-up at the clinic during the pregnancy to allow health care workers to treat and prevent potential health problems (Antenatal care).
- Pregnant mothers need to get information about their pregnancy, what to expect and how to remain healthy while pregnant.
- They need to take some vaccinations and engage in dialogues with their health care worker in order to increase the chances of delivering a health child.
- Pregnant mothers are encouraged to be tested for HIV when they visit their health care worker.
- Mothers who are pregnant and/or breastfeeding must eat healthy food. This helps to sustai the mother and the baby's good healthy.
- Mothers who are pregnant and/or breastfeeding should neither drink alcohol, use drugs nor smoke. The failure to do so, can cause serious harm to the foetus/ unborn child in womb. Mothers who are pregnant and/or breastfeeding must careful talk to their phyisician when the need to take some medicine arise. This is due to the fact that certain medication can be harmful to the unborn child or young baby when breastfed.

b. Maternal mental health v/s child health and development

Good mental health and strong motivations of affections are important for caregivers to be able to empathize with a young child's experiences and to manage their own emotions and reactions to their baby's dependence without hostility. Mental health problems among women who are pregnant or have recently given birth are among the most common pregnancy related morbidity. In resource constrained low and middle-income countries prevalence of common perinatal mental disorders, including depressive, anxiety and adjustment disorders, is much higher than in high-income settings because of additional risk factors such as socio-economic stresses, unplanned pregnancy, being younger or unmarried, lacking intimate partner empathy and support or being subject to violence, or having hostile in-laws. Protective factors include having more education and secure income-generating work, and having a kind, trustworthy partner.

Emotions, concentration, judgment and thinking are affected with mental health problems, and affected women are more likely to have depressed mood, irritability, pessimism and difficulty expressing warmth, affection, and pleasure; instead, they are likely to be pre-occupied with worries and anxiety,

including about infant care. These influence social interactions, including with the baby. Depression among mothers has been linked directly to higher rates of child diarrheal and respiratory diseases, stunting and hospital admissions, lower completion of recommended immunization schedules, and worse socio-emotional development among young children.

Effective interventions to reduce depression and promote maternal mental health have been developed and tested in low and middle income countries where there are very few mental health specialists, and are generally implemented by trained community health workers under professional supervision. Interventions designed to improve maternal mental health have a positive impact on infant health and development, and interventions to promote infant health and development positively impact maternal mood. The effects on infant health and development are stronger when the maternal and infant components are integrated.

c. Effect of Health, hygiene and balanced diet and rest to the pregnant mother

Talk to your doctor about any over-the-countered and prescription of medicines you are required to use. These include dietary or herbal supplements. Some medicines are harmful during pregnancy. At the same time, stopping medicines you need also can be harmful. Your physician may suggest taking prenatal vitamins with iron and folic acid to help protect you against anemia. These vitamins also protect the foetus against serious problems with the brain and spinal cord. Keep blood sugar level up by eating whole, healthy foods and plenty of proteins. Vary your diet as much as possible and do this in small, frequent meals throughout the day. Example: Mother should try to have three meals every day or six smaller meals if she has problems with nausea or heartburn. Choose fruits, vegetables, whole grains, calcium-rich foods, and foods low in saturated fat.

The foetus gets all its food from you, so mother should try to make healthy food choices, wash fruits and vegetables before eating. Don't eat uncooked or undercooked meats or fish. Always handle, clean, cook, eat, and store foods properly. Taking plenty of fluids, especially water to keep one hydrated. Plain water is great. Get early and regular prenatal care physical examinations. Whether this is the first pregnancy or third, health care is extremely important. Avoid very hot baths. The high heat raises the risk of miscarriage and birth defects.

Get plenty of rest and sleep, a nap before dinner and around lunch time, find ways to control stress is much recommended. Read books, watch videos, go to a childbirth lessons, can help a mother to prepare for the birth of a baby. Stay away from chemicals like solvents (like some cleaners or paint

thinners), lead, mercury, and paint (including paint fumes). Not all products have pregnancy warnings on their labels. If unsure, if a product is safe, ask your doctor before using it. Do physical exercises and avoid drugs like cocaine, heroin, marijuana, tobacco and alcohol to void birth defects. Cocaine, heroin, marijuana and other drugs increase risk of miscarriage, premature birth and birth defects. A baby could also be born addicted to the drug you have been abusing, which can cause serious health problems.

Source: Nurturing care for early childhood development: A framework for linking survive and thrive to transform health and human potential, May 2018.

Application activity 13.1.3

1. Suggest the reasons why the above mentioned practices are strongly recommended during pregnancy.
2. Suggest other recommended practices during pregnancy for either mothers or their husbands to help pregnant women.

ASSESSMENT ON PRE-NATAL PERIOD

1. Discuss how effectively the mother should take care of the child since his first 1000 days and outline the implication of this care for learning while the time comes for a child to attend the school.
2. Discuss how genes and chromosomes during prenatal period contribute in shaping our behaviour.

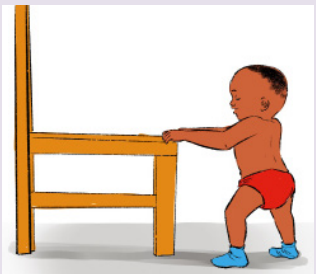
13.2. Developmental Milestones During Infancy (0-2 Years)

Introductory Activity on infancy

1. Reference made to observations you have done of babies and infants up to 2 years, observe the following pictures and order them from the youngest to the oldest. Write the corresponding number.

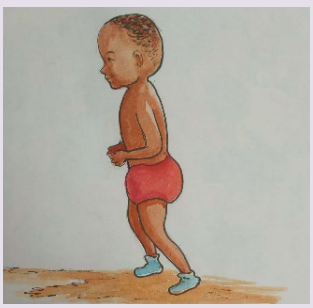
Picture 1

Picture 2



Picture 3

Picture 4



Picture 5

Picture 6

Babies are learning many different things during twenty-four first months, and parents are learning about their babies too. Parents should observe their baby to learn how he/she likes to be talked to, held, and comforted. Additionally, they should be aware that all babies are different.

13.2.1. Some milestones that babies reach during 0-3 months

Activity 13.2.1

Referring to the baby of 0-3 months you have observed and to the knowledge you have about the theories of child development what skills do you think a child can be able to manifest among the following:

- Brings hand to mouth
- Explores with hands and mouth
- Grasps and shakes toys
- Transfers object from hand to hand
- Follows moving objects
- Enjoys playing with people
- Coos and smiles
- Raises head & chest

With respect to four dimensions below, a child aged 0-3 months is expected to have attained some specific skills related to physical, social/cognitive and communication development.

Developmental domain	Skills	What parents, caregivers and pre-schools teachers should do
Physical development	– Raise head & chest when on stomach – Stretch & kicks on back – Open and shuts hands – Bring hand to mouth – Grasp and shakes toys – Move legs and arms off of surface when excited	– Place baby on their tummy to play for a few minutes at a time, a few times a day – Lie down and place baby tummy down on your chest so you're face-to-face – Hold baby's hands and clap them together while you play music and sing – Nestle baby close to you while you gently rock and sway – Change the direction that baby sleeps to encourage head turning and build strength.

Cognitive development	– Follow moving object – Recognize familiar objects and people at a distance – Start using hands and eyes in coordination – Prefer sweet smells – Prefer soft to coarse sensations	– Hang a colourful mobile above baby's crib to provide visual stimulation – Play or sing songs with baby to help enhance baby's listening skills – When changing baby's diaper touch different body parts and say "beep" baby may begin watching your hand and anticipating touch. – Hang a mirror on the wall. Tap the mirror and say baby's name. Over time baby will begin to understand who the baby in the mirror is. – Show baby family photos or flip through a magazine. Point out the smiling faces to baby.
Social and emotional development	– Begin to develop social smile – Enjoy playing with people – More communicative – More expressive with face & body – Imitates some movements & expressions	– Provide plenty of skin-to-skin contact with a parent or caregiver – Smile at baby, touch her hands, feet and forehead. She how she wiggles, reacts to touch and voices – Gently touch and tickle baby to make them giggle – Play with baby in a variety of positions
Communication	– Quiet or smile in response to sound or voice – Turn head towards sound or voice – Show interest in faces – Make eye contact	– Speak in a high-pitched, sing-song voice to help get and keep baby's attention while you talk – Describe your actions as you dress, feed, and bathe your child. Talk about where you're going and what you're doing.

	– Cry differently for different needs (e.g. hungry vs. tired) – Coo and smiles	– Give baby frequent face-to-face time – Shake a rattle up and down while singing to baby – Show pictures of family and friends and point out smiling faces – Hold up a doll or stuffed animal and point out the different body parts

Application activity 13.2.1

1. Describe the main developmental milestones of an infant aged 0-3 months on the following aspects
   a. Physical
   b. Cognitive
   c. Social and emotional
   d. Communication
2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 0-3 months.

13.2.2. Some milestones babies reach during 4-6 months

Activity 13.2.2

Referring to the behaviour of a baby 0-3 months as you studied it and the knowledge you have about the theories of child development select among the following behaviours those that can be manifested by a child aged 4-6 months.

- Transfers object from hand to hand
- Cries when parents leave
- Sits with and without support of hands
- Explores and examines an object using both hands and mouth
- Explores with hands and mouth
- Appears joyful often
- Stands without support
- Listens and responds when spoken to

Developmental domain	Skills	What parents, caregivers and pre-schools teachers should do
Physical development	– Roll both ways (tummy to back and back to tummy) – Sit with and without support of hands – Support whole weight on legs – Reach with one hand – Transfer object from hand to hand – While lying on back, reaches both hands to play with feet – Use raking grasp	– Place baby on their tummy to play in short spurts for up to an hour over the course of the day – Place baby tummy down on a blanket and move the blanket slowly around the room – Allow baby to explore age appropriate toys with their mouth and tongue (be sure that the toys are large enough so that baby does not risk choking) – Encourage baby to practice repeated rolling from back to tummy. Place toys around to encourage pivoting.

Cognitive development	– Use both hands to explore toys – Find partially hidden object – Explore with hands and mouth – Struggle to get objects that are out of reach	– Encourage baby to touch fabric with different textures such as wool, corduroy, and velvet – Lift baby up and down and play in different positions to help develop their sense of movement and balance – Find balls with different textures and colours. Teach baby how to roll, drop, and bounce them.
Social and emotional development	– Enjoy social play – Interested in mirror images method – Respond to expressions of emotions – Appear joyful often	– Play peek-a-boo – Use a variety of facial expressions while you talk
Communication	– Listen and responds when spoken to – Begin to use consonant sounds in babbling, e.g. “da, da, da” – Use babbling to get attention – Make different kinds of sounds to express feelings – Notice toys that make sounds.	– Read with baby. “Reading” can simply means describing pictures without following the written words. – Encourage two-way communication. When baby coos or babbles, be sure to respond and take turns in “conversation”. – Play with rhymes and songs – Encourage baby to play with toys that make sounds.

Application activity 13.2.2

1. Describe the main developmental milestones of an infant aged 4-6 months on the following aspects

   a. Physical

   b. Cognitive

   c. Social and emotional

   d. Communication

2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 4-6 months

13.2.3. Some milestones babies reach during 7-9 months

Activity 13.2.3

Referring to the behavior of a baby aged 4-6 months as you studied it and the knowledge you have about the theories of child development select among the following behaviors those that can be manifested by a child aged 7-9 months.

- Starts to move with alternate leg and arm movement e.g. creeping, crawling
- Focuses on objects near and far
- Moves in and out of various positions to explore environment and get desired toys
- Enjoys imitating people in play
- Looks at familiar objects and people when named
- Combines sounds and gestures
- Looks at correct picture when the image is named

Developmental domain	Skills	What parents, caregivers and pre-schools teachers should do
Physical development	– Sit without support – Sit and reaches for toys without falling – Move from tummy or back into sitting – Start to move with alternate leg and arm movement e.g. creeping, crawling – Pick up head and pushes through elbows during Tummy Time – Turn head to visually track objects while sitting – Show more control while rolling and sitting – Pick up small objects with thumbs and fingers – In simple play, he/she imitates others	– Put a toy or book inside an empty cardboard box. Wrap it with colourful paper or newspaper comics. Clap your hands when baby yanks it open then announce what is inside. – Encourage movement by placing toys around baby where they must move to reach them – Encourage baby pushups during Tummy Time by raising and lowering a rattle over baby's head – Engage baby in activities like reading or playing with a ball while in sitting – When baby is holding a toy in each hand offer a third toy; watch as baby figures out how to grasp the new toy without letting go of the other two – Punch holes in lid of empty food container and fill with water to make a fun bath time toy – Get an empty plastic bucket and have baby throw toys into it – Use different household items , like squeeze toys or newspapers to make different noises for baby

Cognitive development	– Explore and examines an object using both hands and mouth – Turn several pages of a chunky (board) book at once – Experiment with the amount of force needed to pick up different objects – Focuse on objects near and far – Investigate shapes, sizes, and textures of toys and surroundings – Observe environment from a variety of positions – while lying on back or tummy, sitting, crawling, and standing with assistance	– Use your hands to make shadow puppets for baby – Play with a jack in the box or windup toy with baby to show motion – Use animal sounds when playing with or reading to baby; point out an image of an animal then associate the sound that animal makes with the picture – Give baby space to explore environment, while staying close to supervise – Introduce new textures while baby is eating, sleeping, dressing, or playing outdoors, use a variety of sponges, soaps, and lotions during bath time – Encourage baby to play on the floor with toys of various colours, sizes, and shapes – Allow baby to grab and explore items within reach
Social and emotional development	– Shy or anxious with strangers – Cry when parents leave – Enjoy imitating people in play – Prefer certain people and toys – Test parental response – Finger-feeds himself	– Gently touch baby on the feet and tummy to make them giggle – Walk with baby in a carrier or baby backpack – Play with baby in many different positions – Use slow, rocking motions for calming and more vigorous motions for play time

	– Start to look and reach for objects such as food that is nearby – Show strong reaction to new smells and taste	– Provide plenty of skin-to-skin contact with a parent or caregiver – Give baby frequent face time
Communication	– Use increased variety of sounds and syllable combinations in babbling – Look at familiar objects and people when named – Recognize sound of name – Participate in two-way communication – Follow some routine commands when paired with gestures – Show recognition of commonly used words – Use simple gestures, e.g. shaking head for “no” – Imitate sounds	– Draw a picture of baby’s face and then point out the different parts – Play with a pretend phone; talk into phone as you would a regular call, then offer it to baby to do the same – Read short stories with baby – Start using hand movements along with associated words to teach baby to communicate with gestures – Describe your actions throughout the day as you dress, feed, and bathe baby. This gives baby an opportunity to listen to the sounds and rhythms of speech – Respond to baby’s sounds and encourage two-way communication – Play music throughout the day – lively, upbeat music during playtime, and quiet melodic music for naps and bedtime – Read picture books together to help baby connect words and images – Point out objects while you walk and talk with baby.

Application activity 13.2.3

1. Describe the main developmental milestones of an infant aged 7-9 months on the following aspects

   a. Physical

   b. Cognitive

   c. Social and emotional

   d. Communication

2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 7-9 months.

13.2.4. Some milestones babies reach during 10-12 months

Activity 13.2.4

Referring to the behavior of a baby aged 7-9 months as you studied it and the knowledge you have about the theories of child development select among the following behaviors those that can be manifested by a child aged 10-12 months.

- Moves in and out of various positions to explore environment and get desired toys
- Walks independently and seldom falls
- Finds hidden objects easily
- Plays make-believe
- Points to things of interest
- Combines sounds and gestures
- Responds to simple directions, e.g. “Come here”
- Responds to questions

Developmental domain	Skills	What parents, caregivers and pre-schools teachers should do
Physical development	– Pull to stand and cruises along furniture – Stand alone and takes several independent steps – Moves in and out of various positions to explore environment and get desired toys – Maintain balance in sitting when throwing objects – Clap hands – Release objects into a container with a large opening – Use thumb and pointer finger to pick up tiny objects	– Get baby to stack toys such as blocks or rings and describe each toy as your baby picks it up – Lie down on the floor and have baby crawl over you – Practice new gestures with baby like blowing kisses, clapping hands, or giving a high five – Use a toy to encourage baby to crawl when they are in a tummy time position – Roll a soft ball across the floor and encourage baby to crawl after it – Allow baby to play with toys they can push or pull across the floor – Read with baby while they lie on their tummy – Play with stackable blocks – Let baby play with large objects like tunnels, pillows, or cushions while supervised – If baby is already walking, let them try riding toys that they can sit on and scoot across the floor – Provide push toys that allow baby to practice walking with some support – Encourage baby to dance and sway to music – Provide opportunities for baby to experience slow, rocking movements

Cognitive development	– Explore objects in different ways – Find hidden objects easily – Look at correct picture when the image is named – Imitate gestures – Begin to use objects correctly – Enjoy listening to songs – Explore toys with hands, fingers, and mouth – Crawl to or away from objects baby sees in the distance	– Have baby look at their reflection in the mirror and point out each body part – Encourage baby to crawl over, under, and through various objects in your home – Introduce baby to new textures through food, toys, clothes, sponges, etc. – Show how cause-and-effect work i.e. by turning on and off lights – Encourage baby to use all senses to explore (shaking, touching, listening, smelling) – Help baby take the next step in play (i.e. stacking blocks, putting things inside a box)
Social and emotional development	– Crawl towards or away from things to express feelings – Point to things of interest – Tug on parent for attention – Shy or anxious with strangers – Cry when parents leave – Enjoy imitating people in play – Prefer certain people and toys – Test parental response – Finger-feeds himself	– Play peek-a-boo with baby – Provide plenty of skin-to-skin contact with caregivers – Encourage baby to wave hello when meeting new people – Practice waving bye-bye when a guest leaves your home – Direct baby's attention to interesting objects by helping them point their finger – Put baby's actions and feelings to words (i.e. "I can see you are sad because Daddy left.")

Communication	– Meaningfully use “mama” or “dada” – Respond to simple directions, e.g. “Come here” – Produce long strings of gibberish (jargoning) in social communication – Say one or two words – Imitate speech sounds – Babbling has sounds and rhythms of speech – Pay attention to where you are looking and pointing – Respond to “no” – Begin using hand movements to communicate wants and needs, e.g. reaches to be picked up	– Read daily from big, colorful books and let baby turn the pages – Ask baby to point to different body parts when you name them – Ask baby questions and encourage response with words, baby sounds, cooing, or babbling. Record the conversation and play it back for baby to hear – Name textures, shapes, and sizes to help baby attach words to tactile experiences – Describe your actions throughout the day as you dress, feed, and bathe baby – Respond to baby’s sounds to encourage two-way communication – Give baby simple directions to follow like “Go get the ball.

Application activity 13.2.4

1. Describe the main developmental milestones of an infant aged 10-12 months on the following aspects

   a. Physical

   b. Cognitive

   c. Social and emotional

   d. Communication

2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 10-12 months.

13.2.5. Some milestones babies reach during 13-18 months

Activity 13.2.5

Referring to the behavior of a baby aged 10-12 months as you studied it and the knowledge you have about the theories of child development select among the following behaviors those that can be manifested by a child aged 13-18 months.

- Stands on tiptoe
- Sorts by shape and color
- Coordinates movements needed to play and explore
- Enjoys playing with musical toys
- Uses at least 50 words
- Aware of herself as separate from others
- Imitates simple words.

Developmental domain	Milestones	What parents, caregivers and pre-schools teachers should do
Physical development	– Walk independently and seldom falls – Pull toys behind when walking – Begin to run – Stand on tiptoe – Kick a ballSquats to pick up a toy – Stack two objects or blocks	– Encourage baby to kick a ball on the ground. Gradually build up to rolling ball so baby can kick it while in motion. – Put on some silly songs with lyrics that give listeners instructions like “The Hokey Pokey”. Dance with baby while following song directions. – Let baby play with a musical instrument if you have access to one. For a drum, baby can use wooden spoon & cardboard box. – Babies love hearing sounds they make by beating a drum or playing notes on a piano. – Roll a large bouncy ball back and forth between you and your toddler. – Use mini-traffic cones to create a zigzag path to walk through with your toddler. – As your toddler gets older, introduce songs like “Head, Shoulders, Knees and Toes” to help with coordination.
Cognitive development	– Find objects even when hidden 2 or 3 levels deep – Sort by shape and color – Play make-believe	– Blow bubbles for baby. Let baby touch them, watch them soar through sky and pop when they land. – Fill up a bucket with blocks of different sizes, textures and colors.

		– Ensure that none are small enough to be swallowed if baby decides to explore them with their mouth. Allow baby to explore the blocks with all of their senses. – Join in imaginary play. – Give baby different objects (especially mechanical ones) to explore. – Give baby different challenges to solve. – Change toys and games often to keep baby challenged and interested.
Social and emotional development	– Imitate behavior of others – Aware of herself as separate from others – Enthusiastic about company of other children – Hold and drinks from a cup – Help with getting dressed/undressed – Has a regular sleep schedule? – Eat an increasing variety of foods	– Be nearby for encouragement and correction when baby gets frustrated at not being able to do what he/she wants – Give baby chance to interact with other children and begin to teach concept of “sharing” – Show enthusiasm by smiling and clapping at baby’s achievements. – Say “no” firmly and remove baby from the situation when baby does something dangerous or inappropriate. – Let baby join in self-care tasks and household chores. – Allow baby to make choices. – Teach baby to ask for help.

Communication	– **By 15 months, a child:** – May use 5-10 words – Combine sounds and gestures – Imitate simple words and actions – Consistently follow simple directions – Show interest in pictures – Can identify 1-2 body parts when named – Understand 50 words – By 18 months, a child: – Respond to questions – Continue to produce speech-like babbling – Point at familiar objects and people in pictures – Understand “in” and “on” – Respond to yes/no questions with head shake/nod – Repeat words overheard in conversation.	– Go through family photos with baby and encourage them to point out familiar family members. – Use a play telephone to practice different ways to say hello or goodbye, such as bye, bye-bye, goodbye, etc. – Sing nursery rhymes with actions like “Itsy-Bitsy-Spider” and “Patty Cake”. – As you read to your toddler, encourage them to point out familiar objects in the illustrations. – Go on a nature walk in a park or even in your backyard and point out all of the animals and interesting plants you see. – This is a great age for encouraging baby to practice the meanings of “in” and “out”. – Ask baby to put their toys in a bucket and take them out again.

Application activity 13.2.5

1. Describe the main developmental milestones of an infant aged 13-18 months on the following aspects

   a. Physical

   b. Cognitive

   c. Social and emotional

   d. Communication

2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 13-18 months.

13.2.6. Some milestones babies reach during 18-24 months

Activity 13.2.6

Referring to the behavior of a baby aged 13-18 months as you studied it and the knowledge you have about the theories of child development select among the following behaviors those that can be manifested by a child aged 18-24 months.

- Coordinates movements needed to play and explore
- Sorts by shape and color
- Can speak like an adult
- Is generally happy when not hungry or tired
- Can stand on one leg
- Names objects and pictures
- Can go to school and study like adult.

Developmental domain	Skills	What parents, caregivers and teachers should do
Physical development	– Frequently move in and out of various positions (e.g. crawling, climbing, cruising, and walking) to explore and get desirable objects – Coordinate movements needed to play and explore – Usually walks with heel toe pattern and not primarily on toes – Enjoy and seeks out various ways to move and play – Has adequate endurance and strength to play with peers – Can maintain balance to catch ball or when gently bumped by peers – Throw and attempt to catch ball without losing balance – Use hands to help move from one position to another – Use both hands equally to play with and explore toys – Enjoy being swung and gently thrown in air – Scribble – Build tower of 4 or more blocks	– Give child crayons and paper for scribbling – Give beads to place on a string – Play balance games standing on one foot – Jump and run around playing games of chase
Cognitive development	– Find objects even when hidden 2 or 3 levels deep – Sort by shape and color – Play make-believe – Enjoy playing with new toys in varied ways	– Give simple puzzles to complete – Sort objects by size, shape, and color – Join in pretend play

	– Usually play with toys without mouthing them – Enjoy playing with a variety of toys and textures – Enjoy playing with musical toys – Enjoy sitting to look at or listen to a book – Point to objects of interest – Locate objects you are pointing to	
Social and emotional development	– Generally happy when not hungry or tired – Able to calm with experiences such as rocking, touch, and soothing sounds – Has grown accustomed to everyday sounds and is usually not startled by them – Does not require an excessive routine to calm – Cry and notices when hurt – Able to self soothe when upset – Enjoy various textures, such as grass or sand after multiple exposures – Able to transition to new environment or activity – Able to be away from parents when with supportive and familiar people – Able to participate in small groups with other children	– Be nearby for encouragement and correction when child gets frustrated at not being able to do what he/she wants – Give child chance to interact with other children and begin to teach concept of "sharing" – Show enthusiasm by smiling and clapping at child's achievements. – Set limits and explain simple rules. – Involve child in self-care tasks and household chores. – Allow child to make choices.

	– Interested, aware, and able to maintain eye contact with others – Able to play in social situations after a transition time – Explore varied environments such as a new playground – Begin to show defiant behavior	
Communication	– By 21 months: – Use at least 50 words – Consistently imitate new words – Name objects and pictures – Understand simple pronouns (me, you, my) – Identify 3-5 body parts when named – Understand new words quickly – By 24 months: – Begin to use 2 word phrases – Use simple pronoun (me, you, my) – Understand action words – Use gestures and words in pretend play – Follow 2-step related direction e.g. “Pick up your coat and bring it to me” – Enjoy listening to stories.	– Ask child to use words to express him/herself – Talk during daily activities to explain what you are doing – Encourage child to repeat names of things – Rephrase what child says to model correct grammar and extend vocabulary (i.e. “Yes, that is a brown cow and he’s eating grass.”) – Respond to child’s requests and directions

Application activity 13.2.6

1. Describe the main developmental milestones of an infant aged 18-24 months on the following aspects
   a. Physical
   b. Cognitive
   c. Social and emotional
   d. Communication
2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the infant aged 18-24 months.
3. As the development pace of children differ from one another and thus all have go through the same developmental stages, conduct a research and indicate when to confirm that a child has particular problems which hamper his development.

13.2.7. Key message and recommendation practices during infancy period

Activity 13.2.7

The future development of a child depends up on good parenting during the first months of life, particularly in his 1000 days. Again an infant is like little a seed that needs to grow and develop in the perfect and nourishing environment for its fullest potential. If you agree with these statements, make recommendations to parents and caregivers on how they should practice so as to help their children earlier in infancy in order to determine their future development.

Sometimes children catch up, but their physical development may be slower and sometimes their cognitive development is very premature. This brings up the importance of good prenatal care and good nutrition for the pregnant mother to-be. Additional to mothers 'health, there are other key supporting and protective factors such as:

Family environment: Children need a lot of love and attention, supportive caregivers and they need **exposure** to the secure and stimulating environment from early age.

Friendly community: A child should have close relationship with neighbour who is able to provide time to help a child, to talk to him/her and show warm love to them. Children's development is helped by these kind of relationships.

Effect of Nutrition, health and hygiene:

Nurturing care consists of five inter-related and indivisible components: Good health, good nutrition, safety and security, responsive caregiving and opportunities for early learning. In the first years of life, parents, intimate family members and caregivers are close to the young child and thus are the best providers of Nurturing Care. This is why secure family environments are important for young children. Access to clean water and sanitation, good hygiene practices, clean air and a safe environment are all essential to protect children's health and support their development.

Infant: Breastfeeding is good for child's health and development. Breast milk is the perfect food for the baby to get immunities, nutrition and to line the brain cells for a smart start.

Feeding is a great time to touch and hold baby close. Singing and humming soothes baby while feeding. Talking with your child as she eats will encourage her to eat more and be healthy.

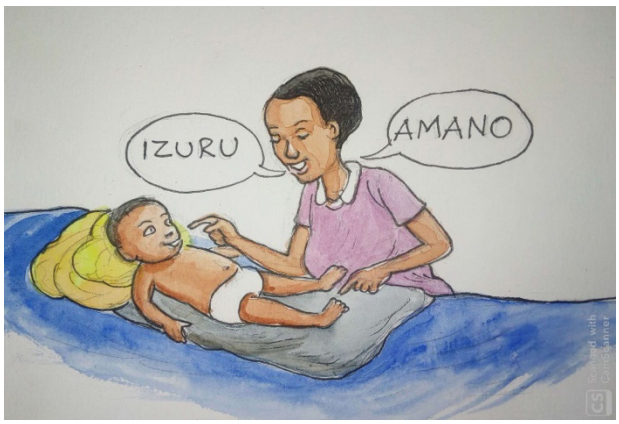
A child needs a mixed, nutritious diet with adequate amounts of vitamins and minerals to grow and develop. If your child does not receive sufficient amounts of vitamins and minerals, provide him with vitamin and mineral supplementation.

Toddlers: Washing food before cooking will help keep away certain diseases. Eating a mixed diet including vegetables, fruit and meat is important. Feeding a child 3 to 5 times a day will be enough to keep growing strongly. Vitamins and minerals are important to prevent malnutrition and later learning problems.

Nurturing and responsive care to the child

Children learn to trust in the first few years of life. When you provide responsive care with a safe place to explore, they learn to trust you when they meet their needs.

Talk to the child every day affect literacy ability



Communication and interaction with parent and caregivers

Even little babies can communicate. They use crying, smiling and cooing. Babies are learning words every day. So tell them the names of things all around, part of body, name of family members... The more words they hear, the smarter they are. Babies can learn from books too. So share picture books or stories with them every day. Talk about the pictures over and over.

Toddlers enjoy the rhythm of language. Tell stories to the child, rhymes and songs while encouraging clapping and hand motions. Toddlers are learning words every day. So tell them the names of things all around, name party of body, how picture books, share stories and sing. Talking with your toddler is the best path to a smarter child. Twos are rapidly learning new words. They may know 300 now and up to 900 words by the end of this year of growth. It is very important to share stories and read picture books.

Nurturing care starts before birth, when mothers and other caregivers can start talking and singing to the fetus. The growing fetus is able to hear by the end of the second trimester of pregnancy and the baby is able to recognize mother's voice after birth. Immediately after birth, skin-to-skin contact, breastfeeding and the presence of a companion to support the mother facilitate early bonding and build the foundations for optimal nutrition and quality interactions and care. Soon after birth, babies respond to faces, gentle touch and holding, as well as the sound of baby talk. Caregivers soon learn to appreciate how babies can be engaged in responsive interactions, which are essential to the optimal development of the baby's rapidly growing brain.

Reading contributes to the children' learning

When reading to an infant, remind them to point to the pictures and just say the word. It can be simple like, "Bird, see the pretty bird?" They should watch for the baby to give clues. If the baby is interested, watch to see the arms and hands moving around. Some infants will even reach for the picture in the book. Encourage babies to reach and touch the pictures or pat at them. When they do, name the picture they are touching. This really helps them to understand words early. However, they do get tired of the book sometimes. This will be easy to see if the baby turns away from the book or stretches to move around. Parents should stop the book when this happens and change activity.

Playing with your child

Infants:

Play is the way that infants learn about their world. Play is children's work! Through play they discover how the world works. Playing with your baby expands learning while building bonds.

By giving the baby objects with a variety of colors, sounds and textures, you are helping the baby learn many new skills and concepts. Baby learns about cause and effect through play. They use their bodies and all senses to check out the world.

Toddlers:

Toddlers like to do things over and over. Their brains get stronger when things are repeated. So sing the same song again, read the same book or tell that story again. Play is how toddlers learn to solve problems so let them explore. Describe the play so that the child learns new words while playing with you. Follow the child's lead. Watch to see what they like and then offer more play.

Two year olds can pretend play now. Provide props like: purses, hats, aprons, and scarves. Join in the play to add on to your child's ideas. Make home-made toys using things around house.

Two year olds are getting very social. So encourage play with other family children like siblings or cousins. Children that can share and cooperate are more successful in school.

Supporting children for emotional development

Babies that have loving relationships are smarter. When they can count on you for safety, they are free to explore and more confident. Babies that are confident are going to learn and brain grows faster.

When infants feel loved, they can listen better. Some challenging behaviors like crying or not eating are normal. When baby has a guiding parent that teaches, their self-esteem will grow and they will be safe.

Toddlers are very emotional and get frustrated when they want things and can't ask yet.

Toddlers can't stop themselves because they can't understand right from wrong; don't have impulse control from front part of brain to stop from doing wrong; and they don't know their own emotions

Toddlers need guidance and protection. They can get on your nerves but they don't do it on purpose. They just simply can't help themselves.

Punishment like yelling, hitting or beating does not work because they get confused and hurt.

Protect them by moving them away from problems and redirect to something better to do.

Application activity 13.2.7

1. Discuss how proper and enough breastfeeding is the most important practice for mothers to ensure holistic development of children in infancy.
2. After studying this sub-unit (infancy) provide a general recommendation to the parents and caregivers on how they should help their children to develop holistically.

ASSESSMENT ON INFANCY

After observing Keza, her mamy realised at certain age she was able to bring her hands to mouth and grasp toys, she could recognize familiar objects and people at distance, she could show her smile when she was happy, she could as well be quiet or smile to sounds and voices. What do you think might be her age?

At certain age, Amina, a child of Keza's age was able to walk independently and seldom fall, sorting objects by shape and color, has a regular sleep schedule, and understand 50 words. Between Amina and Keza, whom do you think was behind in the development? What do you think might be the age of either Amina or Keza who was able to perform the above activities?

13.3. Early Childhood (2-5 Years)

Introductory Activity

Play a game called " I do, I do….Yes I do ….."and after the analysis of the game, appreciate it's contribution to the development domains of a pre-primary child namely socio-emotional, physical, language, cognitive.

13.3.1. The benefit of early learning

Activity 13.3.1

During play time at pre-primary school, observe three young children in baby class, middle class and top class child. Write down the activities and abilities that you see from those different children.

The work of Early childhood educators is about supporting a child in these critical early age, and provide holistic access to learning opportunities.

At this age, children are characterized by the following features:

- At this stage, children are now free to roam around their world.
- It is a time for active exploration of their environment.
- Language development takes major leaps which leads to learning the names of objects of interest, the ability to ask for things and as they discover their independent nature, they develop the ability to say "NO!".

- During this developmental stage, a major challenge is developing what psychologists call emotional regulation.
- Meltdowns (reactions to something. Example, child can have meltdown or temper tantrum because of missing what they like such as food, a toy, …). Both meltdowns and emotional regulation are common during this period, but parents can use the bond developed during infancy to help the child learn to modulate their emotional expression and begin to grasp the difficult concept of delay of gratification.
- While they instinctively seem to be able to say "NO" toddlers also need help in learning how to accept "No" from others.
- Early childhood stage is also a stage of rapid physical and intellectual development preparing these children for starting school which includes interacting cooperatively with peers while at the same time being able to compete physically and intellectually.
- This is the stage when children typically first enter pre-school (3-4 years). Being in a school setting is a great opportunity for a child to interact with others for developing social skills. Being with others will also challenge him/her to compete with others physically and mentally.

Children benefit: Children who participate in programmes such as this, that aim to develop their physical, social, psychological and intellectual capacities early, particularly before the age of 6, see many benefits later in life. They are more likely to attend school and perform better once they are there compared to other children. ECE programmes can also free time for older, female siblings to go to school rather than staying at home to care for younger siblings.

Families benefit: When children are physically and emotionally healthy and have well-developed social and cognitive skills, the whole family benefits. Parents/caregivers have more disposable income to support their families than parents/caregivers who must spend money on medical or remedial expenses.

Schools benefit: when children are better prepared for school, schools can spend less money on remedial learning, and more money enhancing education programmes. Ministries of Education around the world are recognising that an investment in ECD programmes is crucial to improving primary school enrolment, retention and completion rates; this is especially true for girls and disadvantaged children.

13.3.2. Physical development during early Childhood ages

Activity 13.3.2

Watch a video which shows what children of 3 to 4 years are able to do, thereafter you highlight the actions/activities related to physical development.

During the early childhood age, there are specific features of gross and fine motor development for specific periods ranging from 30 months up to 4-5/6 years that are summarised below:

a. **Gross motor development skills**

Ages	What a child can do
By 30 months	– Stand on tiptoes if shown first, – Jump from bottom step, – Begin to ride a tricycle, – Move forward with feet on the floor, – Stand on balance beam with 2 feet and attempt to step forward, – Catch a large ball with arms straight out.
By 36 months	– Stand on 1 foot momentarily, – Walk upstairs alone with alternating feet, – Walk downstairs with 2 feet on same step, – Walk on tiptoe, – Start riding a tricycle, – Use the pedals, – Catch a ball with arms bent, kick a ball forwards.
By 3-4 years	– Run around obstacles – Walk on a line – Balance on one foot for 5 – 10 seconds – Hop on her preferred foot – Ride a tricycle – Walk up and down stairs with alternating feet, without support

	– Jump from 12 inches with feet together – Use a slide independently – Climb well (not including ladders) – Skip, leading with one leg
By 4-5/6 years	– Walk a balance beam forwards & backwards – Perform somersaults – Balance on one foot for 8-10 seconds – Skip, alternating feet – Begin to jump rope – Throw a ball to hit a target – Jump back – Pump and maintain momentum while on a swing (may be started with a forward push) – Hop five times on one foot – Climb the rungs of a playground slide ladder`

b. Gross motor development skills

Ages	What a child can do
By 30 -36months	– Fold paper in half – Draw straight lines and circles – Imitate you drawing a cross – Turn single pages in a book – Snip the edges of paper with scissors (by 30 months) – Hold crayons using the thumb and fingers – Use one hand more often than the other for most activities – Build a tower of up to 9 large blocks – Put together large linking blocks – String ½ inch sized beads – Cut across a piece of paper (by 3 years) – Use a fork to eat – Manage large buttons – Put on some items of clothing with supervision

By 3-4 years	– Build a tower of 9-10 small blocks – Use play dough to make balls, snakes, cookies, etc. – Build things with large linking blocks – Draw a circle by herself – Copy a cross (+) – Imitate you drawing a square – Start to hold a crayon or pencil with a mature grasp (like an adult) – Cut across a piece of paper – Start to cut along a straight line – Manage buttons – Put on most items of clothing by herself, but may still need help with shirts and jackets – Feed himself well with a spoon and fork
By 4-5/6 years	– Start to use one hand consistently for fine motor tasks – Cut along a straight line with scissors – Start to cut along a curved line, like a circle – Draw a cross by herself (+) – Copy a square – Begin to draw diagonal lines, like in a triangle – Start to color inside the lines of a picture – Start to draw pictures that are recognizable – Build things with smaller linking blocks – Put on his own clothing, but may still need help with fasteners like buttons/zippers – Start to spread butter or cut soft foods with a small table knife (with supervision) – Start to learn to print some capital letters

c. Promotion of physical development of preschoolers

Given that a child needs more physical exercise to grow, parents, guardians, caregivers and specifically teachers will need to help children grow physically in order to achieve the aforementioned gross motor development skills.

It is with that respect that they will need to:

- Give child the space and freedom to use large muscles, through activities such as running, climbing and swinging on playground equipment.
- Make sure child gets adequate sleep and nutrition to fuel overall development and activity.
- Take child to a pediatrician in case of any concerns. Even small problems, caught and addressed at this age, can greatly enhance motor skill development and confidence.
- Use equipment to develop large muscles (i.e. hula hoops, bean bags, tricycle, large balls).
- Set up empty water bottles like bowling pins, and let child use a soft ball to "bowl."
- Join child in active play like tag, hide and seek, or set up a simple obstacle course.
- Give child opportunities to practice small motor skills using child safety scissors, blocks, dice, and buttons.

Application activity 13.3.2

Play match game with your classmates: Developmental milestones abilities with different ages (2-5/6) and discuss on factors that can promote or delay these milestones.

13.3.3. Cognitive development during early childhood age

Activity 13.3.3

a. Student teachers visit multi-age centre and observe children in free play: put down on paper what they have observed, how children interact, level of thinking, how they change everything in into reality how they share ideas, …..the role of care givers during children activity/play , the tome children keep concentration on one activity etc

b. Watch a video which shows the activities a child of 3-4 and 5 years is able to do.

a. Cognitive milestones during early childhood

The physical development of a child goes hand in hand with intellectual development. Here below are the intellectual abilities which characterize a child whose age range varies from 2 to 5/6 years.

Ages	What a child can do
By 2-3 years	– Understand simple stories – Respond to simple directions – Name some objects in a book – Group objects by category (e.g. animals, clothing, food) – Play pretend with dolls or stuffed animals – Stack rings on a peg in order of size – Put together simple puzzles (3-4 piece inset puzzles) – Identify herself in a mirror, saying “baby” or her own name – Tell others what he is doing – Learn to count “1-2-3” – Correctly names some colors – Approaches problems from a single point of view – Has a clearer sense of time and sequence
By 3-4 years	– Be able to sort and match things (e.g. recognize and match colors) – Organize things by size – Identify parts of a whole, such as the wheel of the car – Draw a very simple picture and be able to tell you what it is (you might not recognize it) – Use “why?” and “how?” questions – Tell you his full name and age – Play with an activity for a longer stretch of time (5-15 minutes) – Have a basic understanding of time, know the difference between past and present – Enjoy singing, dancing, or acting

By 4-5/6 years	– Play with words, imitating and creating sounds, and make rhymes – Point to and name many colors and shapes – Learn to identify a few letters and numbers – Draw a person with detail – Draw, name, and describe pictures – Count objects up to five – Tell you where he lives (street name and town/city) – Follow the rules to games, but sometimes change them as she goes – Recognize his name when he sees it printed

b. Promotion of cognitive development of preschoolers

Given that a child needs to grow intellectually, parents, guardians, caregivers and specifically teachers will need to help children with the following tasks:

- Give child tasks of sorting by matching shape, type, color or size.
- Play “sizes” games where child puts things in order.
- Have simple puzzles available for child to play with.
- Have child arrange pictures in a sequence, such as photos of a child different ages (e.g., baby, toddler, pre-schooler).
- Play games that require child to match objects that are the same or different.
- Encourage pretend play, and give child props and space in which to enter an imaginary world. If you join in, ask questions, but let child direct the play.
- When child encounters a problem, have her/him help devise a possible solution.

Application activity 13.3.3

Based on the key knowledge gained from above presentation, student teachers in small four groups do a gallery work discussing on given topic relating to the cognitive development: ability and activities that promote this domain tothe child aged 2-6. They discuss on points, decide and move to another paper to add on what another group find out

13.3.4. Early childhood social and emotional development

Activity 13.3.4

Case study:

Explore Case study that shows socio- emotional development, risk and protective factors that may affect or promote Socio-emotional development of a child aged 2-5years. Discuss and find out risk factor that may hinder socio-emotional development and other factors that promote them at early childhood children. Student-Teacher may add some factors from prior experience they have.

a. Social and emotional skills

As the child grows intellectually and physically, he/she needs to grow socially, here below are some features of emotional development that a child of early childhood exhibit throughout different stages.

Ages	What a child can do
By 2-3 years	– Be assertive about what he or she wants, and say no to adult requests – Start to show awareness of her own feelings and others' feelings – Have rapid mood shifts – Show more fear in certain situations (e.g the dark) – Become shy, and may start to whine – Possibly become aggressive and frustrated easily – Not like change – Want independence, but still need security of parents – Need an ordered, predictable routine (ie: when saying good-bye to parents) – Watch other children in play, and join them briefly – Defend his possessions – Begin to play "house" – Begin to separate more easily from parents – Begin to show empathy to other children (respond to their feelings)

By 3-4 years	– Share toys, taking turns with help – Initiate or join in play with other children and make up games – Follow simple rules in games, but will always want to win – Begin dramatic play, acting out whole scenes such as travelling pretending to be animals – Might be bossy and defiant – Show more independence – Experience a broad range of emotions (ie: jealousy, excitement, fear, happiness, anger) – Become less egocentric – Be more even-tempered and cooperative with parents – May show attachment to one friend
By 4-5/6 years	– Show some awareness of moral reasoning, such as "fairness", and good or bad behavior – Develop friendships – Express more awareness of other people's feelings – Enjoy imaginative play with other children, such as dress up or house – Get better at sharing and taking turns with other children – Enjoy playing games, but might change the rules as he goes – Stick with a difficult task for longer period (controlling frustration or anger better) – Show an understanding of right and wrong – Listen while others are speaking – Play games with simple rules

b. Promotion of socio and emotional development of preschoolers

Given that a child needs to grow emotionally, parents, guardians, caregivers and specifically teachers will need to help children with the following tasks:

- Provide structure and daily routines to create a secure environment
- Encourage child's independence by giving chances to practice and master self-care skills.

- Teach child to recite his first and last names, his parents' names, his gender and age, and his home address.
- Give child regular social contact with other children his/her age, both one-on-one and in a group.
- Observe child playing with others, and listen to what he says about his friends.
- Teach child to cooperate with peers, resolve conflicts, and build and maintain friendships.
- Play games that require child to cooperate with others, wait his turn, and learn to be a gracious winner or loser. Example: Play a ball with others children or with adults, ……

Application activity 13.3.4

Watch a video below which show the social and emotional development activities that children of 3, 4 and 5 years are able to exhibit .

Explain characteristic of social/emotional development.

13.3.5 Early childhood and language development

Activity 13.3.5

Play a game that reinforce speaking and listening skills. A game is called " I went to the market and I bought ……(Child will complete with his/her favourite food after repeating what his/her two previous colleague said)

a. Language skills

The children's language development in early childhood is considered based on three distinctive stages—stage of 2-3 years, stage 3-4 years, and the stage of 4-5/6 years. As for the first stage (2-3 years), the language development is viewed from two distinctive periods (30 months and 36 months).

Ages	What a child can do
By 30 months	– Understands simple questions and commands – Identifies many body parts – Carries on “conversation” with self and dolls – Asks “what’s this?”, “what’s that?”, and “where’s my…” – Sentence length of 2-3 words (ie: “more juice” or “want cookie”) – Names pictures on print or picture books and actions – Refers to self by name – Uses 2 word negative phrases such as “no want”, “not go” or “no right” – Forms some plurals by adding “s” (e.g. books) – Asks for a drink or snack – Has about 200 spoken words in their vocabulary
By age of 36 months	– Uses about 450 words – Can give first name when asked – Uses past tense (e.g. “ed” endings) and plurals (e.g. “s” endings) (not always correctly) – Combines names of things with action words ie: baby sleep – Understands simple time concepts such as “last night” and “tomorrow” – Refers to self as “me” or “I” instead of by name – Uses their words to get adult attention ie: “watch me!” – Likes to hear the same story over and over – Uses “no” or “not” in their speech – Talks to other children as well as adults – Answers “where” questions – Uses short sentences to tell what he/she has just done or wants to do ie: “me do it” or “me want to jump” – Matches 3-4 colors – Knows the words “big” and “little” – Holds up fingers to tell age

Between 3-4 years	– Enjoys books, simple songs, nursery rhymes, silly words, and stories – Has a vocabulary of 900 or more words – Most of what they say can be understood – Puts words together to form 3-4 word sentences – Asks and answers “who”, “what”, and “where” questions – Asks LOTS of questions – Likes to talk and have conversations with people – Uses proper grammar most of the time – Uses pronouns “I”, “you” and “me” – Knows their name, gender, street name, and a number of nursery rhymes – Knows some prepositions (position words) such as in, on, and under
	– Often makes mistakes with negatives and use “double negatives” ie: “I don’t not want to go” – Follows a 3-part command – Begins to recognize some letters and words (e.g. recognizes “stop” sign) – Sorts (match) objects by: function (find something you play with, wear, etc); size (big, little); familiar colors. – Names one color – Is developing number concepts can give you 1, more, or all of something – Counts objects, even if they don’t have all the numbers correct. – May repeat sounds, words, or phrases (may sound like stuttering) – Stays with one activity for 8-9 minutes

- Between 4-5/6 years	– Continues to learn lots of new words very quickly – Vocabulary of 4,000-6,000 words – Uses sentences of 4-6 words – Talks a lot and about everything they are doing or thinking – Tells long stories about own personal experiences – Asks “who” and “why” questions – Interested in explanations for their “how” and “why” questions – Understands and uses “tomorrow” and “yesterday” – Uses past, present and future tense, mostly, but not always, correctly – Interested in written words, letters and numbers. – Matches and sorts objects in a large variety of ways – Understands prepositions (e.g. beside, behind, in front) – Stays with an activity for 11-12 minutes

b. Actions to promote language development

- Speak to child in a clear, correct, and simple manner. Avoid using baby talk.
- Make conversation a two-way street. Take time each day to listen to and talk with child.
- Model good listening behavior when child speaks (i.e. pause an activity and make eye contact)
- Encourage child to use language (and not just gestures or actions) to express ideas, observations, and feelings.
- Ask questions that require child to make and express a choice.
- Try to enrich and expand child’s vocabulary.
- Engage child in activities and games that require listening and following directions.
- Read and sing nursery rhymes
- Read and tell stories that have interesting characters and easy-to-follow plots.
- Discuss the stories together.

Application activity 13.3.5

Sorting and classification game: Make a table with developmental milestones of different domaines and ages. Sort them out and classify them according to the ages: between 2-3 years, between 3-4 years and between 4-5 years Asks lots of questions,

- Likes to talk and have conversations with people,
- Uses proper grammar most of the time,
- Uses pronouns “I”, “you” and “me,
- Stand on tiptoes if shown first,
- Enjoy playing games, but might change the rules as he goes,
- Stick with a difficult task for longer period (controlling frustration or anger better),
- Show an understanding of right and wrong,
- Listen while others are speaking,
- Play games with simple rules,
- Jump from bottom step,
- Draw straight lines and circles,
- Imitate you drawing a cross,
- Turn single pages in a book,
- Snip the edges of paper with scissors (by 30 months),
- Hold crayons using the thumb and,
- Begin to ride a tricycle, moving forward with feet on the floor,
- Copy a square,
- Begin to draw diagonal lines, like in a triangle,
- Start to color inside the lines of a picture,
- Start to draw pictures that are recognizable,
- Build things with smaller linking blocks,
- Put on his own clothing, but may still need help with fasteners like buttons/zippers,

- Start to spread butter or cut soft foods with a small table knife (with supervision),
- Continues to learn lots of new words very quickly,
- Vocabulary of 4,000-6,000 words,
- Uses sentences of 4-6 words,
- Talks a lot and about everything they are doing or thinking,
- Tells long stories about own personal experiences,
- Asks “who” and “why” questions,
- Interested in explanations for their “how” and “why” questions,
- Understands and uses “tomorrow” and “yesterday”,
- Uses past, present and future tense,
- Stand on balance beam with two feet and attempt to step forward,
- Catch a large ball with arms straight out,
- Stand on 1 foot momentarily,
- Walk up the stairs alone with alternating feet,
- Walk downstairs with two feet on same step,
- Walk on tiptoe Ride a tricycle,
- Walk up and down stairs with alternating feet, without support,
- Jump from 12 inches with feet together,
- Use a slide independently,
- Climb well (not including ladders),
- Skip, leading with one leg ;
- Build a tower of 9-10 small blocks.

13.3.6. Key Messages and recommendations practices

Activity 13.3.6

Working into small group and discuss on given topics. Then share with whole students the discussion outcomes.

The proposed topics :

1. Play is a key in development and impacts all developmental domains
2. Reading a book with a child impact language development
3. Parental involvement for children development and learning,
4. Safe place for children's life and learning against harmful

Introduction

Cognitive, social-emotional (mental health), and physical development are complementary, mutually supportive areas of growth all requiring active attention in the preschool years. Social skills and physical dexterity influence cognitive development, just as cognition plays a role in children's social understanding and motor competence. All are therefore related to early learning and later academic achievement and are necessary domains of early childhood pedagogy. To ensure holistic development and elementary school readiness in early childhood the following practices are recommended to all parents, caregivers, teachers and other stakeholders.

- **Children are curious and enthusiastic to learn and discover the world around them through play**

- Play is fun and leads to positive emotions that are important for children's physical and mental well-being, health and quality and life. Play provides children with a way for coping with real life challenges. It offers the opportunity for every caregiver (teachers/parents) to engage with her/his child and build healthy relationships.
- Play is the way in which children learn and develop. Learning through play starts with parents in the home where children play, learn and develop with the support of parents, caregivers, older siblings and family members.
- Play allows children to explore, discover, negotiate, take risks, create meaning and solve problems, which are the important foundations for developing literacy, numeracy and social skills.
- Play is a foundational principle in learning and development for children with disabilities. It is an important "tool" to ensure that children with disabilities participate fully in an inclusive and rights respecting society.
- Children who engage in quality play experiences are more likely to have well-developed memory skills, language development, and are able to regulate their behaviour, leading to enhanced school adjustment and academic learning (Bodrova & Leong, 2005)
- Lack of play and communication, known as "under-stimulation", can have long-term negative consequences on a child's learning and physical and mental health.
- The foundations of mathematics is rooted in playing with puzzles, blocks and construction toys.
- Language development is fast-tracked when parents, educators and practitioners talk to children when they are playing; describing and sharing new words that leads to forming concepts needed for formal learning.
- Routines help a child feel safe and secure. Having same order of routines helps brain grow stronger. When routines are predictable, they make toddler's brain grow with strong pathways. Routines offer a way for toddler to help and start building some independence routines build trust and positive relationships.

- **Reading a book with a child**

Source: Photos from Save the children, 2016, First steps, parenting curriculum

When reading to an infant, remember to point to the pictures and just say the word. It can be simple like, “Bird, see the pretty bird?” Parents or caregivers should watch for the baby to give clues. If the baby is interested, watch to see the arms and hands moving around. Some infants will even reach for the picture in the book. Encourage babies to reach and touch the pictures or pat at them. When they do, name the picture they are touching. This really helps them to understand words early.

However, they do get tired of the book sometimes. This will be easy to see if the baby turns away from the book or stretches to move around. Parents should stop the reading when this happens and change activity.

Reading to young toddlers: Young toddlers also need simple talk around the pictures. Make the reading fun and interactive. Ask the toddler to touch the picture as you name the object. They delight in books, use simple and few words. If too many words are on the page, just talk about the pictures and avoid reading long passages. When toddlers lose interest, they usually try to close the book and walk away.

Reading to older toddlers: Older toddlers are ready to hear more words in the story. They really like rhyming too. If you leave off a word in predictable book, they can sometimes fill it in for you. This is a good skill that can build later reading comprehension and sound awareness. Ask many questions to a two-year-old as you discover the book together. Reading play a key role to the children. They see, they hear and there is coordination between head (brain), heart (emotion) and hands (touch pictures he is seeing in the book).

- **Language and Communication begins at birth**

Early on, babies try to have “conversations” with the people they love. They start by back-and-forth smiling and cooing. Later they “talk” by using movements (e.g., kicking happily to show excitement), gestures (e.g., pointing), and sounds (e.g., babbling and later words). Toddlers are learning so many words every day. The more words they hear, the more they learn.

Toddlers learn words so they can talk to somebody or communicate what they need. They see what they want. Their brain finds the word. They say the word. When you hear the word, you say more about it this makes the language part of their brain stretch and learn more.

Between two and three the toddler’s communication skills grow in so many ways. During this year a child will listen to and enjoy rhyming in books and songs, point to or find objects when asked, use describing words (like big cow), can carry on a conversation. The more you talk, read, sing and play with 2 year old, the larger their bank of words will grow.

- **Protecting Children against harmful objects**

During different activities engaging children to manipulate objects, caregivers should first check if the place is safe for children. Young children need to grow-up in environments (home. Community, service points) that are safe.

Safety measures need to be taken all the time in the home, at centers/ schools to avoid injuries due to electricity, gas, paraffin, fires, sticks, stones, etc. Children need to be taught from an early age in an appropriate manner about risk and dangers.

Any form of abuse of babies and young children need to be reported immediately to the security agents. Any kind of abuse affects children in different way: physically, emotionally and psychologically. Examples: beating a child affect their physical aspect, socio-emotional.

Preventing children from playing affect them cognitively, physically, emotionally…. Vulnerable families need to receive necessary support to ensure in turn they provide support to their children. *It takes village to raise children!* In community, all members should contribute for children ‘security. Community awareness raising should be a key responsibility of local leaders to ensure children are growing up in safe environment.

- **Parental involvement for children development and learning**

A child needs a strong support at home as at school/center. Parents should serve as primary teacher for the mastery of basic learning skills and encourage active discussion and experimentation of new concepts and skills

They should give enough time to the child and give message to children that strengthening what a child learn at preschool /center. Example: In everyday activity parents should invite a child and spend time discussing, telling a story, asking question to her/him, responding the question that a child may ask, briefly parents should be listening attentively to the child. And parent provide resources that a kid may need in the process or exposure her/him to the environments when a child himself may discover on her/his own.

Application activity 13.3.6

You have learnt more about developmental milestones of children in all domains. In partnership that your school has with Mabano Cell where your school based, you are selected to represent your school and play a role of Cell Advisor. Therefore, Cell leaders are organizing campaign for engaging families in child development and learning showing them their irreplaceable role in Society.

- Write a brief concept note and point out the purpose of campaign and key message to be given to participants during campaign
- Formulate two specific objectives of the Campaign

ASSESSMENT ON EARLY CHILDHOOD

You are student at Teacher Training College of Muramba in Ngororerpo District. Around your school there is primary school which has nursery. School leaders consistently receive complaints from parents. They say that they contribute for Caregivers salary every quarter but their children do not real study. Their schedule is from 7:30-12:00, but their children waste time in playing, singing, rhyming, telling stories instead of learning English, Kinyarwanda, Kinyarwanda and Maths. Last month head teachers they gave last warning to head teacher that if caregivers do not change approach they use teaching children, they will take decision as parents and take their children at another school.

Head teacher invites parent meeting with purpose to listen careful to the parents and explain them about pre-primary curriculum and children development and learning. As student knowledgeable on matter, you are invited to give " Ikiganiro" to the parents. You are asked to emphasize on child development, learning, and role of parents in the learning journey.

Develop purposeful and summarized message to be given to the parents aimed to change their mind-set and behaviour and track out about play for learning, what children need for growing and learn well, and role of parents in children 'learning.

13.4. Middle And Late Childhood

Introductory Activity

Based on the theories of human development, especially theory of Jean Piaget, Sigmund Freud and Erick Erickson, describe the characteristics of a children aged between 6 and 12 years.

13.4.1. Some milestones children reach during 6-8 years include

Activity 13.4.1

You have already learnt about the developmental milestones in infancy and early childhood and you learnt different aspects of child development as well as the theories of human development. Now referring to all these knowledge and skills you acquired sort among the following the abilities/ skills and behaviour that characterize children aged 6-8 years.

a. Children are able to take into account other people's needs and feelings and show the need to help them.

b. Children take part in various games and socialize more and more. Children in collaborating with their peers are fully involved in the success of the game. They stick to the rules of the game to reach the final victory of their team.

c. Height and weight increase, but more slowly

d. Understand his/her place in the world

e. Pay more attention to friends

f. Say what they think and feel honestly

Developmental domains	What a child can do	What parent should do to develop the expected skills/competence
Physical development	– Height and weight increase but more slowly – Coordination and balance increase, better with large muscle groups than small – Develop new physical skills (i.e. snapping, whistling) with repeated practice – Like to be physically active and has trouble sitting still	– Give repeated opportunities to practice physical skills – Use movement in learning activities – Practice writing daily
Cognitive development	– Understand his/her place in the world – Learn to read letters, sounds, words, then sentences – Able to count, write, add and subtract numbers – Able to collect, sort, organize and classify – Can recognize similarities and differences – Begin to tell time – Short attention span – Needs concrete objects to understand concepts, unable to handle abstract ideas	– Read, read, read! – Talk about the meaning of what is read – Draw pictures of new words and ideas – Break down new ideas and tasks step by step – Practice basic math skills (i.e. addition, subtraction, patterns) using physical objects

Social/ emotional development	– Show more independence from parents – Pay more attention to friends – Want to be liked and accepted by friends – Better able to work in a team – Have less focus on self and more concern for others – May have a need to win, be first, or be the boss – Can be unkind to others but extremely sensitive to criticism	– Recognize accomplishments and show affection – Support child in taking on challenges – Praise good behavior and effort – Make clear rules and stick to them – Use discipline to guide child to make good choices (not punish) – Build patience skills by having child wait – Help child name and explain feelings – Teach respect – Give responsibilities
Communication development	– Better able to describe experiences and talk about thoughts and feelings – Say what they think and feel honestly.	– Ask child questions about school, friends, and experiences – Have child retell stories – Expand child's vocabulary by using bigger words – Rephrase child's language if not correct

Application activity 13.4.1

1. Describe the main developmental milestones of a child aged 6-8 years on the following aspects
   a. Physical
   b. Cognitive
   c. Social and emotional
   d. Communication
2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the child aged 6-8 years.

13.4.2. Some developmental milestones of 9-12 children

Activity 13.4.2

You have already learnt about the developmental milestones in infancy and early childhood and you learnt different aspects of child development as well as the theories of human development. Now referring to all these knowledge and skills you acquired, sort among the following abilities/skills and behavior that characterize children aged 9-12 years.

1. Fine motor skills are refined
2. Longer attention span, ~30 minutes if engaged
3. Develop a stronger preference for same-sex friends
4. Thinks more about how what they say will be interpreted by others
5. Have opposition to leaders
6. Always think abstractly

With respect to physical, cognitive, social/emotional and communication development, parents, guardians, particularly teachers are required to do the following for the sake of children's development.

Developmental domains	What a child of 9 to 12 years can do	What parent should do to develop the expected skills/competence

Physical development	– The height and weight increase, sometimes in rapid spurts with the onset of puberty – Fine motor skills are refined – Coordination and athletic skills improve	– Talk about normal physical and emotional changes during puberty – Involve child in athletic skills training, based on interests – Cognitive development activities – Read everyday – Practice logical reasoning (if …, then …..) – Help child set goals – Support child with self-study and organization of tasks – Ensure mastery of skills as academic tasks become more complex
Cognitive development	– Longer attention span, ~30 minutes if engaged – Begin to think in more abstract way, using mental models – Increase in logical reasoning skills – Better memory – More awareness of learning strategies – Use of basic skills (reading, writing, math) to further skills in other subjects – Able to apply learned skills to new tasks – Interest in learning life skills (i.e. cooking)	– Read everyday – Practice logical reasoning (if …, then ……) – Help child set goals – Support child with self-study and organization of tasks – Ensure mastery of skills as academic tasks become more complex –

Social/ emotional development	– Form stronger, more complex friendships – Develop a stronger preference for same-sex friends – Experience more peer pressure – Become more aware of body – Test limits of self and parents – Begins to understand perspective of others better – May become more moody – Develop more internal sense of right and wrong	– Recognize accomplishments and show affection – Support child in taking on challenges – Praise good behaviour and effort – Make clear rules and stick to them – Use discipline to guide child to make good choices (not punish) – Discuss consequences of poor choices and how to deal with peer pressure – Help child develop sense of right/wrong – Give responsibilities – Teach teamwork
	– Increased sense of self (identity)	– Communication activities – Ask child questions about school, friends, and experiences – Practice active listening skills – rephrasing and summarizing – Encourage open sharing.
Communication development	– More detailed and descriptive – Thinks more about how what they say will be interpreted by others – Less open with adults about certain topics – Want to express their opinion and be listened to.	– Ask child questions about school, friends, and experiences – Practice active listening skills – rephrasing and summarizing – Encourage open sharing.

Application activity 13.4.2

1. Describe the main developmental milestones of a child aged 6-8 years on the following aspects
   a. Physical
   b. Cognitive
   c. Social and emotional
   d. Communication
2. Identify the appropriate games and/or activities to use so as to boost the holistic development of the child aged 9-12 years.

13.4.3 Positive key messages and recommendations for middle and late childhood

Activity 13.4.3

Referring to the key message and recommendation practices in infancy and early childhood brainstorm what should be the recommendations to parents and care givers in order to facilitate their children who are in primary school to grow and develop holistically.

In upper primary, as children approach adolescence, their independence and capabilities increase. They may also start puberty which brings physical and emotional changes. Family becomes a lesser priority than friends.

Healthy friendships are therefore very important to a child's development, but peer pressure can become strong during this period. Children who feel good about themselves are more able to resist negative peer pressure and make better choices for themselves. This is an important time for children to gain a sense of responsibility along with their growing independence.

Remember that this is the stage at which children are eager to develop and manifest competences. They want to be accepted and to develop confidence and self-esteem. They learn to be responsible and take decisions on their selves.

Here are the key messages and recommendations for parents and teachers so as to help these children grow and develop holistically:

- Spend time with your child: Talk with her about her friends, her accomplishments, and what challenges she will face.
- Be involved with your child's school: Go to school events; meet your child's teachers.
- Encouragement: Encourage your child to join school and community groups, such as a sports team, or to be a volunteer for a charity.
- Help your child develop his own sense of right and wrong: Talk with him about risky things, friends might pressure him to do, like smoking or dangerous physical dares.
- Help your child develop a sense of responsibility: Involve your child in household tasks like cleaning and cooking. Talk with your child about saving and spending money wisely.
- Meet the families of your child's friends.
- Talk with your child about respecting others: Encourage him/her to help people in need, and talk with him/her about what to do when others are not kind or are disrespectful.
- Help your child set his own goals: Encourage him to think about skills and abilities he would like to have and about how to develop them.
- Make clear rules and stick to them: Talk with your child about what you expect from her (behavior) when no adults are present. If you provide reasons for rules, it will help her to know what to do in most situations.
- Use discipline to guide and protect your child, instead of punishment to make him feel badly about himself.
- Use of praise: When using praise, help your child think about her own accomplishments. Saying "you must be proud of yourself" rather than simply "I'm proud of you" can encourage your child to make good choices when nobody is around to praise her.
- Human development talk: Talk with your child about the normal physical and emotional changes of puberty.
- Reading culture reinforcement and academic success: Encourage your child to read every day, talk with him about his homework.
- Love and affection: Be affectionate and honest with your child, and do things together as a family.

Application activity 13.4.3

Amina has a young boy aged 9 years; her child is neither confident, nor responsible and does not take care of himself. She heard that you attended TTC and you are able to help her child to improve. If she comes to consult you on how to help her child, explain what you will help her.

ASSESSMENT ON MIDDLE AND LATE CHILDHOOD

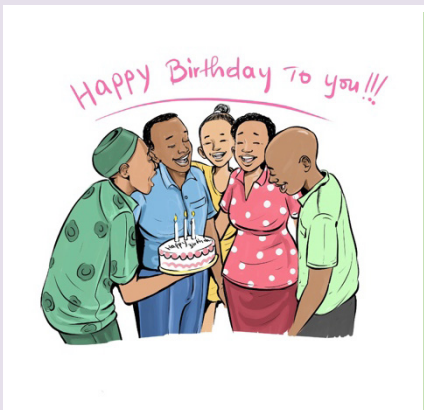
IZERE is a boy who studies in primary 4. When he is at school, he doesn't not talk to others, he is always busy on himself. When it comes to written exams he got higher marks and he is the first in the class, but when it is oral presentation he is not confident to stand in front of others and he cannot speak. Their classmates hate him because is not collaborative, but when it comes to playing football other students who play football prefer to be in the team with IZERE.

According to this case study identify the areas in which IZERE is well developed and the areas in which is not well developed.

What are the recommendations you can give to the teacher and parents of IZERE to help him develop in all domains?

13.5. Adolescence

Introductory Activity



Based on the above photos, list the characteristics of people that fall under each group. Discuss problems that most of people who belong in that category usually face.

Murerwa and John are S5 students at G.S NYAMIYONGA. Murerwa is 15years while John is 2 years older than her and they come from the same village . During the holiday of second term, the sister of John had a wedding and john invited Murerwa as his classmate. At evening, John and Murerwa sat in a black corner conversing and John had intention of doing his first sexual practice.

Murerwa resisted, but john told her that doing it is what prove that they are mature, normal and in love. They did it and afterwards, the life went on normally in the village. At the beginning of second term, the two students had shame when they face each other. In mid second term, Murerwa discovered that her life habit has changed, she could not eat normally because of nousea, she could not seat a long period of time in class and she vomits everything she eats. Her mother NYIRAKAMANA discovered it and took her daughter to the health center and they found that Murerwa is pregnant. Today, it is 3 years later and Murerwa did not continue her studies while John is in university.

1. Discuss the problems that many students in age group of Murerwa and John face in relation with their physical, and social or emotional development,
2. In which ways would you managed to come out in such situation if you were Murerwa?

Introduction

The term adolescence is derived from a Latin word 'adolescere' that means to grow to adulthood. Adolescence begins as a separate developmental stage at about the age 11 and ends at about the age of 22. The age boundaries of adolescence vary so, the adolescence developmental stage can be distinguished on the basis of physical and psychological characteristics and social roles. Adolescence is considered the transitional stage from childhood to adulthood that occurs between ages 13 and 19. But the physical and psychological changes that take place in adolescence can start earlier, during the preteen years between ages 9 and 12.

G. Stanley Hall (1844-1924) is known as the father of adolescent psychology. He constructed a psychological theory of teenage development and one major aspect of his theory was that this stage of life is characterized by 'storm and stress" that most teens are by nature moody and untrustworthy.

The many physical, sexual, cognitive, social, and emotional changes that happen during this time can bring anticipation and anxiety for both children and their families. Understanding what to expect at different stages can promote healthy development throughout adolescence and into early adulthood.

Adolescence has generally 3 stages: Early adolescence, Middle adolescence and late adolescence.

13.5.1. Early Adolescence (Ages 10 to 13)

Activity 13.5.1

Hirwa Hirwa is a P6 student and has 12 years old. He many times get home at night. When it is time to go home after class, Hirwa and his friends Mugabe, and Sibomana pass by at Premier betting officer. They spend much money in betting and their parents always claim missing money at home

1. Do these children obey their parents?
2. Why do you think they are disobedient to parents?
3. Where do you think they get money for betting?
4. What can you do if you are a parent of one of these three boys?

Major characteristics of early teens

During the early adolescence stage, children often start to grow more quickly. They also begin notice other body changes, including hair growth under the arms and near the genitals, breast development in females and enlargement of the testicles in males. They usually start a year or two earlier in girls than boys, and it can be normal for some changes to start as early as age 8 for females and age 9 for males. Many girls may start their period at around age 12, on average 2-3 years after the onset of breast development.

These body changes can inspire curiosity and anxiety in some especially if they do not know what to expect or what is normal. Some children may also question their gender identity at this time, and the onset of puberty can be a difficult time for transgender children.

Early adolescents have concrete, black-and-white thinking. Things are right or wrong, great or terrible, without much room in between. It is normal at

this stage for young people to center their thinking on themselves (called "egocentrism"). As part of this, preteens and early teens are often self-conscious about their appearance and feel as though they are always being judged by their peers.

Pre-teens feel an increased need for privacy. They may start to explore ways of being independent from their family. In this process, they may push boundaries and may react strongly if parents or guardians reinforce limits.

Effects of early maturation

Early maturation happens when girls and boys attain physical maturation much earlier than the average expected age. Irrespective of an early or late mature, a youngster will often experience social and psychological consequences of the physical changes on his /her body. Girls worry about menarche and it is a negative experience especially when it starts at very early age. They experience a high level of depression, especially those who had not been prepared for menstruation. On the other hand, girls who are prepared for this event usually accept it as a sign of femininity.

Early maturation in Girls

Girls who mature early, are characterized by the following:

- They are attractive to older boys, but not emotionally mature enough for more intimate relationships.
- They are popular among their female peers because of superior status.
- They feel socially isolated because they are in marginal social position, that is half-child, half-woman and do not fit in older groups or groups of their own age.
- Develop primary and secondary sex characteristics as early as 9 years or less.
- Early physical maturation in girls is often linked to poor academic performance and unplanned pregnancies.
- They seem to be more flexible, independent and more satisfied with their lives in later years than those who mature late.

Early maturation in boys

Boys who mature early, they generally show the following characteristics:

- They tend to be self-controlled, self-confident and attractive to the opposite sex and are likely to get earlier sexual experience than those with the late maturation.

- They behave in a socially appropriate way and are popular and assertive in their peer groups and social situations.
- They have a better body image and higher self-esteem than boys who mature late.
- They are regarded as competent.
- They are regarded as competent, natural leaders and often assume leadership roles
- Due to their strength and size, they often do well in sports.
- They are expected to live to the adult‘s expectation and should act more maturely than they are capable of doing.
- They often join older adolescents who mislead them into deviant behaviors like substance abuse, truancy, rebelling against teachers and parents, etc.

Physical Development

- There is wide variation in the onset of puberty, creating early and late matures.
- Girls begin puberty, on average, two years earlier than boys.
- The physical changes of puberty become outwardly apparent, and children are more aware of their changing bodies.
- Rapid growth and physical changes cause fidgeting, squirming and difficulty being still. Children benefit from lots of physical activity.

Cognitive Development

- Thinking matures as children’s attention, memory and problem-solving abilities improve.
- Teens develop greater abilities for logic and reason; their thinking is predominantly concrete rather than abstract.
- Teens begin to question rules and beliefs they previously accepted at face value; for example, they begin to realize that fairness cannot be measured or quantified.
- Special athletic, artistic, academic or musical talents may emerge.
- Girls move ahead of boys in terms of cognitive development.

Emotional Development

- Youth are more self-conscious and worried about what others think of them. However, because of the onset of puberty, they are less able to recognize the emotions of others.

- Adolescents seek independence and test adult authority, but retain a great need for parental support and guidance. Adult role models and heroes are important.
- Self-esteem issues may develop. Early developing boys often have higher social status/ self-esteem while early developing girls may experience more attention from boys, but are uncomfortable with the attention.
- Some boys repress their emotions and, instead, express themselves more physically

Social Development

- It becomes more emotionally important for children to have and keep friends, especially of the same sex; although, some opposite-sex interaction begins.
- Peers' attention and approval is very important. Young people feel peer pressure intensely and may develop "best friend" relationships and cliques.
- Children are beginning to learn social skills (i.e., how to enter groups, how to read social cues and how to deal positively with conflict) and appreciate the social value of conversation.
- Youth may begin experimentation with sexual behaviours and illicit substances.

Application activity 13.5.1

1. Who is the father of adolescence psychology?
2. How does an early mature adolescent girl differ from early mature adolescent boy?
3. Describe emotional development of early adolescents.

13.5.2. Middle Adolescence (Ages 14 to 17)

Activity 13.5.2

Kagoyire is a S2 student at G.S MUSENYI. She has been reclaiming of acne in his face and she is not proud of herself. She told her friend Anita who is older than her and Anita told her that she has heard other talking that if you sleep with a boy the acne immediately cures. Kawera who tracked their conversation secretly reported them to her aunt Mutesi. Next day at evening, Mutesi called the three girls and told them that the acne that keep coming in their face are due to their development and time will come and disappear. The three girls thank Kawera and her aunt Mutesi for real information.

1. *Why did Kagoyire feel inferior?*
2. *What would happen if Kagoyire had accepted the advice of Anita?*

Physical changes from puberty continue during middle adolescence. Most males will have started their growth spurt, and puberty-related changes continue.

They may have some voice cracking, for example, as their voices lower. Some develop acne. Physical changes may be nearly complete for females, and most girls now have regular periods.

At this age, many teens become interested in romantic and sexual relationships. They may question and explore their sexual identity which may be stressful if they do not have support from peers, family, or community. Some of adolescence enter this stage later and this may have effect to their development.

Effects of late physical maturation

Late maturation is when girls and boys attain physical maturation much later than the average expected age. Boys get concerned very much with the uncontrolled erection of the penis and ejaculation. Although most boys are very proud of this ability and see it and see it as a sign of virility, the ability to control erections leads to embarrassment. Nocturnal emissions also make some boys feel humiliated and guilty. Uncontrolled erections make some boys afraid of participating in activities like dancing or standing up in class or social gatherings.

Late maturation in girls

Late maturating girls show the following characteristics:

- Have a more positive image than those who mature early.
- Are more likely to be successful
- They tend to be assertive, active, socially poised and higher in position of leadership ability than early mature girls.
- They are more likely to acquire a tall slender figure than early mature girls.
- Develop primary and secondary characteristics between 15-17 years

Late maturation in boys

Late maturating in boys is characterized by the following:

- They are seen as less attractive, less well balanced and more tense and anxious than boys who mature early.
- Their academic achievement is often poor than that of boys who mature early.
- They are more attention seeking than their peers.
- They are restless, talkative and bossy.
- They experience feelings of guilt, inferiority, depression, rejection and general anxiety.
- They have a greater need of encouragement, sympathy and understanding from other boys than boys who mature early.
- They have difficulties in dealing with authority figures.

Physical, social, emotional and cognitive development

Many middle adolescents have more arguments with their parents as they struggle for more independence. They may spend less time with family and more time with friends. They are very concerned about their appearance, and peer pressure may peak at this age.

The brain continues to change and mature in this stage, but there are still many differences in how a normal middle adolescent thinks compared to an adult. Much of this is because the frontal lobes are the last areas of the brain to mature development are not complete until a person is well into their 20s! The frontal lobes play a big role in coordinating complex decision making, impulse control, and being able to consider multiple options and consequences.

Middle adolescents are more able to think abstractly and consider "the big picture," but they still may lack the ability to apply it in the moment. For example, in certain situations, kids in middle adolescence may find themselves thinking things like:

"I'm doing well enough in math and I really want to see this movie… one night of skipping studying won't matter."

"Do I really have to wear a condom during sex if my girlfriend takes the pill?"

While they may be able to walk through the logic of avoiding risks outside of these situations, strong emotions often continue to drive their decisions when impulses come into play.

Physical Development

- Puberty continues. Both boys and girls show outward, physical signs of maturation.
- Boys' voices deepen and many girls are menstruating.
- By age 15, boys have begun their growth spurt and are taller and more muscular than girls.
- By age 14 or 15, most girls have reached their final adult height.
- Rapid physical growth may cause clumsiness and many youth worry that this transitional awkwardness will last into adulthood.
- Regular exercise and games help develop coordination, reduce stress and provide an outlet for excess energy.
- Acne and body odour, along with other characteristics of their changing bodies, are concerns for adolescents.
- Young teens' need for sleep and physical rest increases.

Cognitive Development

- Youth develop a greater ability for complex thought (i.e., they can think abstractly, use reasoning skills, show more intellectual curiosity and can understand the hypothetical).
- They have hypothetical deductive reasoning which is reasoning from possible to real.
- Goal-setting, including for long-term goals, becomes important.
- Youth need guidance to avoid risky behaviors as they may not recognize the consequences of their actions.
- Young teens often feel all-powerful, all-knowing and invulnerable. There is a focus on the self, alternating between high expectations and lack of confidence.

- The distance between those who are succeeding in school and those who are struggling is magnified.
- Youth experience anxiety from more challenging school work.
- Youth in this age group are the most likely to drop out of school when they are not catered and advised a lot.

Emotional Development

- Young teens often show less affection toward parents, with occasional rudeness. They seek independence, but still need structure and limits set by parents and other adults.
- Although teens want some distance from their parents, they often want close relationships with other adults outside the family.
- They may return to childish behaviors, particularly when under stress.
- Youth are skilled at masking their true state of mind; they often give neutral responses about whether they are happy or sad.
- Young teens have intense desire for privacy.
- Teens' self-esteem may suffer as rapid hormonal and body changes reduce their confidence.

Social Development

- Friendship and romance are increasingly important. Teens may feel confusion over emerging sexuality and may worry about sexual orientation.
- Peer pressure is at its peak; young teens want to spend time with older teens. Teens are trying to establish their own identities separate from their families.
- Parental influence lessens, and increased tension is an issue between teens and parents regarding rules and relationships.
- Relationships deepen and become more mutual and trusting as young teens learn to step outside themselves and see others' points of view.
- Young teens may form opinions and beliefs based on unreliable sources of information (Internet and other forms of media) and are not easily persuaded to seek the real truth.
- Teens experiment with sexual behaviors and illegal substances.

Application activity 13.5.2

1. Outline 2 changes that characterise both male and female during middle adolescence
2. Write true or false

   a. During middle adolescent, most of adolescents may spend less time with family and more time with friends

   b. In middle adolescence, the brain continues to change and mature in this stage

   c. Late maturation in adolescence is when girls and boys who are in this stage attain physical maturation much later than the adults.

13.5.3. Late Adolescents (18-21)

Activity 13.5.3

Muhizi is a senior six student at St KIZITO. He is always thinking about the kind of a person he will become after his studies. He is quiet and disciplined at school and all his teachers appreciate his behaviour. He was assigned the responsibility to advice O-Level students in the school and he guides them effectively. Now he is 20 years old, but he behaves like adults.

1. Why do you think that the behaviours of Muhizi differ from O-Level students?

Late adolescents generally have completed physical development and grown to their full adult height. They usually have more impulse control by now and may be better able to gauge risks and rewards accurately. In comparison to middle adolescents, youth in late adolescence might find themselves thinking

“While I do love movies, I need to study for my final.”

During this stage, Teens are entering early adulthood and have a stronger sense of their own individuality now and can identify their own values. Late adolescence has two meanings. First of all, it represents the final years of adolescence. It is when all the changes have taken place and the young person is ready to properly enter adulthood.

They may become more focused on the future and base decisions on their hopes and ideals. Friendships and romantic relationships become more stable. They become more emotionally and physically separated from their family. However, many re-establish an "adult" relationship with their parents, considering them more an equal from whom to ask advice and discuss mature topics with, rather than an authority figure.

Physical Development

- Physical changes are leveling off.
- Most girls have completed puberty and achieved their full height.
- Boys may still be maturing physically; in particular, boys' muscles continue to develop
- Boys also develop greater heart and lung capacity.
- Boys in generally are considerably taller and heavier than girls at this stage.
- Appetite increases and eating disorders may become common, especially among girls, as concerns about body image remain intense
- Most older teens experience strong sexual feelings.

Cognitive Development

- Most older teens can now think abstractly and hypothetically. They can discern the underlying principles of a situation and apply them to new situations; can think about the future; and can consider many possibilities and logical outcomes of possible events.
- A teen may not be fully able to connect knowledge and consequences with appropriate actions because the brain continues to develop until about age 24.
- Living out of the family brings independence, including choices about vocation, post-secondary education and parenting, is the central development task.
- Older teens develop an increased capacity to understand multiple perspectives, leading to the ability for many to grasp bigger societal issues and become interested in justice or politics as they clarify their own values and morals.

Emotional Development

- Youth continue to form their own identity and may experiment with different styles, sexuality, friendships and occupations.
- As older teens develop a sense of personal identity, self-esteem continues to develop.

- Older teens continue to worry about their bodies and physical appearance.
- All experiences are intense and emotional.
- Some will experience sadness, hopelessness or depression, which can lead to (or be caused by) poor grades at school, further experimentation with sexual behaviors and illegal substances, family problems and many others.

Social Development

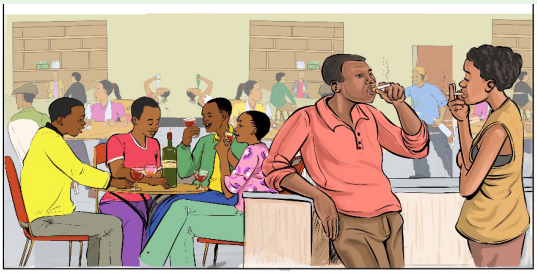
- Friendships with peers remain important, but older teens rely less on their peer group for their sense of identity as they begin to define themselves on their own.
- One-to-one relationships are becoming increasingly important, as friendships are based more on real intimacy rather than simply on common interests and activities.
- Cross-gender friendships become more common.
- Peer pressure levels off and there is an increased ability to view parents as individuals with their own perspectives.
- Teens need a balance between time spent with peers and with parents or other adults.
- The senior year of high school is particularly - stressful for teens and his/her relationships with parents or other adults
- Friendships with peers remain important, but older teens rely less on their peer group for their sense of identity as they begin to define themselves on their own.
- One-to-one relationships are becoming increasingly important, as friendships are based more on real intimacy rather than simply on common interests and activities.

Application activity 13.5.3

Why late adolescents are considered as adults?

13.5.4. Adolescent egocentrism and social problems

Activity 13.5.4



Think of the problems that such behaviours may cause in society.

a. Adolescents egocentrism

This refers to the tendency by adolescent to be thoroughly embedded in their new found ideals, concepts and principles without considering the views of significant others. The egocentric problems which are common during the adolescence period include:

- **Argumentativeness:** Adolescents have a tendency of regarding their views and principles as the best and most accurate. Parents and teachers should therefore, take parts in discussing with adolescent about new issues they discover and how they (adolescents) should react to them.
- **Indecisiveness**: Adolescents face a problem of deciding on things. This is because they have a great number of choices in every aspect of life.
- **Self-centred:** Adolescents have a particular perception of themselves. They think that they are special, unique and not subjected to natural rules that govern the world. For instance, a girl may think that she cannot get pregnant or a boy may think that he is wise enough and cannot be addicted to smoking or cannot make a girl pregnant. They think that these things only happen to other people, but not them. This kind of thinking and reasoning make them fearlessly indulge in many risks ventures.
- **Finding fault with authority**: Since adolescence now have the ability to imagine an ideal word, they realize that people they have honoured ant given esteem to are not perfect as they thought. They therefore feel compelled to try to bring reality closer and to fantasy by pointing out all the shortcomings they notice.

- **Self-consciousness**: Adolescents have the mentality that others constantly watch and make comments about them. Adult should therefore avoid making public criticism or ridicule.
- During adolescence, many adolescents are more concerned with their body image.

b. Examples of social problems that adolescents face during adolescence

i. Juvenile delinquency

Juvenile delinquency is the habitual committing of criminal acts or offences by a young person, especially one below the age at which ordinary criminal prosecution is possible. A delinquent can be defined as a child or youth between ages 6-18 years who breaks laws enacted by authorities.

Causes of delinquency

- Some youngsters commit crimes to relieve boredom and frustration. Adolescents 'needs for recognition, independence and affection may make them to turn to antisocial behavior so as to reduce tension. The following are other causes:
- Some delinquents are drug addicts who need money to support their habits.
- Conflicts in families: rejection by the family generally by the father, conflict in the family, brutal or overly weak and inconsistent discipline at home.

Signs of delinquency

The following are the signs of delinquency:

- Delinquents are characterized by behaviours such as: violation of disciplinary measures of parents, truancy, stealing, robbery, disobedience, violence, vandalism, student unrest, student protest as well as uncontrolled premarital sex.
- Premature school dropout
- Poor participation in extra-curricular school activities
- Poor personal and social adjustment
- Excessive experimentation with drug abuse
- Low self-esteem and poor self image

Ways of preventing delinquency:

- Both the school and the home should create an atmosphere that will strengthen the resistance of children to the pressures of delinquency. A child should not be subjected to any unnecessary temptation. The school should be made an interesting and rewarding experience.
- A child should clearly understand that delinquent acts are punishable, but once punished, accept the child again as a member of the class, family or community.
- Ensure that there is security and certainty in both the home and the school, otherwise the young person might want to escape from an emotionally intolerance situation.
- Establish good child-parent and teacher-child relationships and ensure that there is affection, security and certainty in both home and the school. Adolescents should be encouraged to talk about their problems and discuss freely the consequences of delinquency.
- Try to identify the early signs of maladjustment as well as the child's mixing with problematic friends in life.
- Both the school and the home should emphasize a stable system of moral values and the value of self-discipline.
- Direct the energies of these young growing people into socially acceptable channels. Provide ample opportunities, that is outdoor and indoor activities where aggression and frustration can be reduced.
- Potential delinquents should be given some special, responsible tasks. Show them that they are worth something.

ii. School dropout

For a number of reasons, situation can arise where the child can no longer cope with school, subsequently, she/he may drop out. The most obvious reason for dropping out of the school might include: Poor teacher-student and student-student relationship, continual failures, Peer group influence and Family background.

Ways of preventing learners from dropping out of school

Teachers have an important role to play in helping your students from dropping out of school. They can:

- Inculcate positive attitudes in students and adapt learning content to the needs and abilities of individual groups of learners so that learning should happen in a conducive environment Establish a strong school guidance and career service.

- Positive attempts should be made to build the children's morale, the general image they have of themselves.
- Early intervention programmes should form an integral part of a developing society's education programme.

iii. Drug abuse

Drug abuse or substance abuse is the use of certain chemicals for the purpose of creating pleasurable effects on brain (By Dr. Ananya Mandal, 2019). This may cause many problems to drug abusers such as: distortion in thinking, disrespect, auto accidents and senseless crime, unwanted pregnancies and many of drugs provoke psychological dependence.

The reasons of abusing drugs are various and include the following:

- Curiosity and peer pressure especially among school children and young adults.
- The use of prescription drugs had been originally intended to target pain relief many have turned into recreational use and become addictive.
- Beliefs held about drugs
- Peer pressure
- Availability of drugs in community.
- Once a person is addicted, it becomes difficult for him or her to refrain from it.

The task of the school, teachers, parents and all those concerned with youth in Rwanda today should be:

- To sensitize the youth about the dangers of using drugs and alcohol
- Set a good role model to adolescents
- Combine effort and provide advice to adolescents

13.5.5. Key messages and recommendation practices during adolescence

Children and their parents/teachers often struggle with changing dynamics of family/school relationships during adolescence, but parents and teachers are still a critical support throughout this time. The following are some pieces of advices that parents and teachers can do to help children effectively navigate their adolescence for smooth transition from childhood to adulthood:

- **Help your child anticipate changes in his or her body**

  Learn about puberty and explain what›s ahead. Reassure them that physical changes and emerging sexuality is part of normal, healthy development. Leave room for questions and allow children to ask them at their own pace.

- **Start early conversations about other important topics and keep conversations positive.**

  Maintain open communication about health relationships, sex, sexuality, consent, and safety. This will build a good framework for discussions later.

- **Discuss risky behaviours:**

  There might be discussions around the topics of sexual activities , substance use and the related consequences. Be sure to set a positive example yourself. This can help teens consider or rehearse decision-making ahead of time and prepare for when situations arise.

- **Honor independence and individuality**

  This is all part of moving into early adulthood. Always remind your child/ student you are there to help when needed. By maintaining positive and respectful parent-child relationships during this period, your family can (try to) enjoy the ride!

- **Remember you're a parent and a friend**

  Teens crave the security of knowing that their parents and teachers understand them, appreciate them, and love them. They do want the relationship to be a form of friendship.

- **Try to be there after school**

  Never think that the adolescents drug use or sex abuse happens only over the week end in night clubs, however in some evening hours during work days they can happen as well. Arrange flex time at work if you can, if your child will be with friends, make sure there's adult supervision, not just an older sibling.

- **Keep your standards high**

  Your teen wants to be his or her best self. Our job as parents is to support our teens in doing that. But, don't expect your child to achieve goals you decide for him/her; she needs to begin charting his/her own goals now, with the support of a parent who adores her just as she is and believes that she can do anything he/she aims to. Support your teen's passions and explorations as she finds her unique voice.

- **Make it a high priority to have meals together**

  Meals are a great opportunity to talk about the days' events, to unwind, reinforce and bond. They're also your best opportunity to keep in touch with your teen's life and challenges, and to spot brewing problems. Finally, an important factor in kids' happiness and overall success is whether they feel they get time to "just hang out and talk" with parents every day.

- **Keep the lines of communication humming**

  If you don't know what's going on, you lose all hope of influencing the outcome.

- **Continue family meetings**

  Held regularly at a mutually agreed upon time, family meetings provide a forum for discussing triumphs, grievances, sibling disagreements, schedules, any topic of concern to a family member. Ground rules help, everyone gets a chance to talk; one person talks at a time without interruption; everyone listens, and only positive, constructive feedback is allowed.

Application activity 13.5.4

1. Identify any 3 common social problems of adolescents during adolescence period.
2. How can we prevent delinquency in adolescents?
3. In your own words explain tips parents can use to effectively help their adolescents navigate adolescence stage.
4. Discuss: Delinquents are largely a product of the environment in which they grow up from or of the upbringing they have received or a combination of the two.

ASSESSMENT ON ADOLESCENCE

1. Outline 4 emotional characteristics of an adolescent that can affect learning in your class.
2. Give reasons why many adolescents' social development and interpersonal relationships with parents are difficult.
3. Explain the cognitive development during adolescent?

4. Amina is a S2 student. She passes many hours without eating. When asked the reason he said that she is fear that her boyfriend Elisa may not like her size but on the other side Elisa eat too much with the intention of developing his chest and building his body.

   a. Which problem does Amina have?

   b. Think of the causes of such problem?

   c. How can you advise her?

5. Compare and contrast an adolescent and an early childhood boy's characteristics on the dimension of social/ emotional development

13.6. Adulthood And Aging

Introductory Activity

JABO is mediator at sector level, he has been teaching in primary school for 35 years and today he is in retirement. He advises young children to have good behaviours and be productive in society. He many times regrets for time he did not use effectively when he was an adolescent and does not want anyone to be like him when he was adolescent. He knows that this happens because many adolescents lack advice from elders and role models. He is a hard working though his physical abilities reduce every day. IRADUKUNDA the village leader told people after the Monthly community work (Umuganda) to respect adults for their contribution to the community development and the country as whole. John is a S3 student and has changed because of advice of JABO and he is working hard to change his colleagues.

Based on the story above, think of contribution adults have in your community.

Think of the behaviour of JABO when he was adolescent and compare with the behaviours he has today`

What lesson can you draw from the story?

Introduction

Being older doesn't necessarily mean being unable to do things and not enjoy life. These seniors look as if they thoroughly enjoy life.

According to Psychologist Malcolm Knowles (1989), there are four definitions of adult.:

Biological definition: We become *adult biologically* when we reach the age at which we can reproduce….

Legal definition: We become adult legally when we reach the age at which the law says we can vote, get a driver's license, marry without consent….

Social definition: We become adult socially when we start performing adult roles.

Psychological definition: We become adult psychologically when we arrive at self-concept of being responsible for our own lives, of being self-directing.

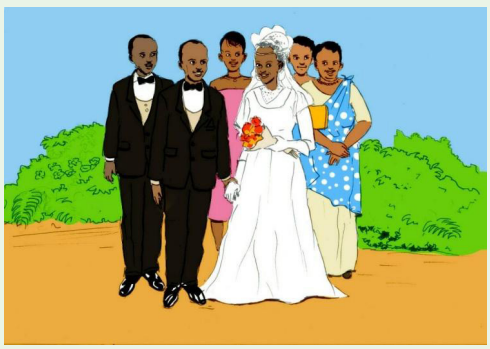
From the view point of learning, it is the psychological definition that is most crucial.

Conventionally, we define adulthood as three age periods or stages**: young adulthood** (20s and 30s), **middle adulthood** (40s and 50s), and **later adulthood** (age 60 and over).

13.6.1. Early adulthood and middle adulthood

Activity 13.6.1

observe the pictures below and identify differences between adolescents and adults people.



a. Early adulthood

Introduction

Early adulthood coincides with the 20s and early 30s. During early adulthood, people generally form intimate relationships, both in friendship and love. Many people become engaged or marry during this period. Often they are completing their education and becoming established in a career. Health problems in young adults tend to be minor.

Selecting a mate, learning to live with a married partner, starting a family, rearing children, managing a home, getting started in an occupation, taking on civic responsibility and finding a congenial social group.

Physical development

Physical maturation is complete. Physical abilities are at their peak, including muscle strength, reaction time, sensory abilities, and cardiac functioning. Many women have children in the early-adulthood years.

- The aging process, although not overt, begins during early adulthood.
- Around the age of 30, many changes begin to occur in different parts of the body, the lens of the eye starts to stiffen and thicken, resulting in changes in vision (usually affecting the ability to focus on close objects).
- Sensitivity to sound decreases: this happens twice as quickly for men as for women.
- Hair can start to thin and become grey around the age of 35, although this may happen earlier for some individuals and later for others.
- The skin becomes drier and wrinkles start to appear by the end of early adulthood.
- The immune system becomes less adept at fighting off illness, and reproductive capacity starts to decline.

Cognitive development

- Cognition begins to stabilize, reaching a peak around the age of 35.
- Early adulthood is a time of relativistic thinking, in which young people begin to become aware of more than simplistic views of right vs. wrong.
- They begin to look at ideas and concepts from multiple angles and understand that a question can have more than one right (or wrong) answer.
- The need for specialization results in pragmatic thinking using logic to solve real-world problems while accepting contradiction, imperfection, and other issues.

- Finally, young adults develop a sort of expertise in either education or career, which further enhances problem-solving skills and the capacity for creativity
- Young adults tend to score higher on tests of fluid intelligence, while middle adults tend to score higher on tests of crystallized intelligence.
- They may want absolute answers from absolute authorities.
- Many young adults particularly those who have attended college develop the ability to reason logically, solve theoretical problems, and think abstractly. They have reached Piaget's **formal operations** stage of cognitive development.
- Cognition begins to stabilize, reaching a peak around the age of 35.

Psychosocial development

As human beings get old in age, there are some changes that happen in his/her thinking abilities and his relationship with others as well is affected. With respect to decision making, they become independent while as to relationship, their understanding about love differs much from that of adolescents.

- **Independence: Age 17-28**

  Much psychosocial development occurring during this period is in conjunction with significant life changes, such as leaving home, finding a long-term romantic relationship, beginning a career, and starting a family. An important aspect of establishing intimacy with a partner is first being able to separate from the **family of origin,** or family of procreation. Most young adults have familial attachments from which they are separating. This process normally begins during Daniel Levinson's **early adult transition** (ages 17–22), when many young adults first leave home to attend college or to take a job in another city.By age 22, young adults have attained at least some level of attitudinal, emotional, and physical independence. They are ready for Levinson's **entering the adult world** (ages 22–28) stage of early adulthood, during which relationships take centre stage.

- **Relationships: Age 17–45**

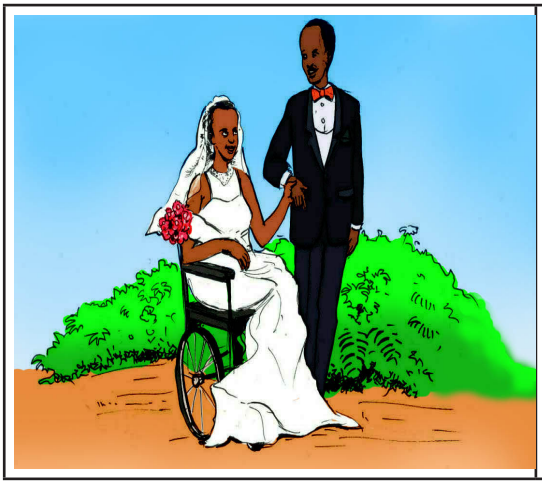
Love, intimacy, and adult relationships go hand-in-hand. Robert Sternberg proposed that **love** consists of three components: passion, decision/commitment, and intimacy:

- **Passion** concerns the intense feelings of physiological arousal and excitement (including sexual arousal) present in a relationship,
- **Decision/commitment** concerns the decision to love the partner and maintain the relationship.
- **Intimacy** relates to the sense of warmth and closeness in a loving relationship, including the desire to help the partner, self-disclose, and keep him or her in one's life. People express intimacy in the following three ways: **physical intimacy,** or mutual affection and sexual activity; p**sychological intimacy** or the sharing of feelings and thoughts; **Social intimacy,** or having the same friends and enjoying the same types of recreation.

- **Establishing a Career: Age 22–33**

Another important activity during Levinson's **entering the adult world** (ages 22–28) and **age-30 transition** (ages 28–33) stages is establishing a career. This process normally begins in college or trade school, where young adults prepare themselves to enter the work force. Young adults commonly explore various career options before settling into one field of work.

- **Starting a Family: Age 33–45**



As young adults enter the **culminating phase of early adulthood** (ages 33–45), they enter the **settling down** (ages 33–40) stage. By this time, their careers (at least the first one) have been established and a spouse found.

Parenthood is generally thought to strengthen marriages, even though research indicates that marital satisfaction often declines after the birth of the first child. This decline may be due to such stressors as changes in usual roles and routines, increases in family responsibilities, and additional strains on finances.

Note that Adulthood does not have a definite starting point. A person may be physically mature by age 16 or 17, but not defined as an adult by law until older ages. As we get old, our bodies change in physical ways. One can expect a variety of changes to take place through the early and middle adult years. Each person experiences age related changes based on many factors: biological factors such as molecular and cellular changes are called primary aging, while aging that occurs due to controllable factors, such as lack of physical exercise and poor diet, is called secondary aging.

b. Middle adulthood

Middle adulthood is the period of age beyond young adulthood, but before the onset of old age. In general, the middle adulthood is characterised by the following: decline of physical skills, increase of responsibilities, increase of self-satisfaction and increase of awareness of time.

Physical development characteristics

The following are the physical characteristics of a person experiencing the middle adulthood:

- There is a decrease of height, and after 55 years, approximately 2 inches lost for men, and 1 inch for women.

- There is an increasing of weight
- Their bone's density decreases as well and the loss is twice fast for women.
- There is decreasing of strength, whereby 10% of their strength lose by 60 years.
- The organs no longer function as efficiently as they once did.
- Lung and heart capacities decrease.
- There is a decreasing of vision and light sensitivity, and the hearing abilities decrease.
- The biopsychosocial changes that accompany midlife are menopause (the cessation of menstruation) in women and male climacteric (male menopause) in men.

Cognitive development characteristics

- Two forms of intelligence: **crystallized and fluid** are the main focus of middle adulthood. **Crystallized intelligence** is dependent upon accumulated knowledge and experience we have gathered throughout our lifetime. **Fluid intelligence** is more dependent on basic information-processing skills and starts to decline even prior to middle adulthood. Cognitive processing speed slows down during this stage of life, as does the ability to solve problems and divide attention.
- Increase **of practical** problem-solving skills. These skills are necessary to solve real-world problems and figure out how to best achieve a desired goal.
- Decision making is making is based upon personal responsibilities towards others this is called **executive stage) Cognitive decline.**

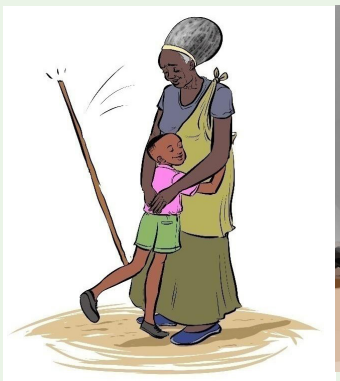
Application activity 13.6.1

1. During which period of development do most people generally form intimate relationships, both in friendship and love.
2. Think of people either in your village or in your academic daily life who are in middle adulthood and explain their physical characteristics.
3. Differentiate fluid intelligence from crystallized intelligence.

13.6.2. Late adulthood and aging

Activity 13.6.2

Observe the pictures above and answers the questions



1. Based on the above picture, think of physical characteristics of people who are in this period of development.
2. What are the problems associated with this stage of development?
3. Umusaza/umukecuru upfuye ni nk'isomero rihiye » explain this Rwandan adage based on the importance of old people in Rwandan society.

Introduction

Old age consist of ages nearing or surpassing the average life span of human beings, and thus the end of human life cycle.

Daniel Levinson depicts the **late adulthood** period as those years that encompass age 65 and beyond.

Other developmental psychologists further divide later adulthood into **young-old** (ages 65–85) and **old-old** (ages 85 and beyond) stages. The study of old age and aging is called **gerontology.**

Late adulthood is the stage of life from the 60s onward; it constitutes the last stage of physical change. Aging inevitably means physical decline, some of which may be due to lifestyle, such as poor diet and lack of exercise, rather than illness or the aging process.

Physical development

- Energy reserves dwindle(diminish).
- Cells decay. Muscle mass decreases.
- The immune system is no longer as capable as it once was in guarding against disease.
- Body systems and organs, such as the heart and lungs, become less efficient. Overall, regardless of people's best hopes and efforts, aging translates into decline.
- while energy is lost, the ability to conserve energy is gained
- Most hearing loss is not noticed.
- There is lessening or cessation of sex, sometimes because of physical symptoms such as erectile dysfunction in men, but often simply a decline in libido.
- Effect on appearance, sensation, and motor abilities.
- An older adult's appearance changes as wrinkles appear and the skin becomes less elastic and thin.
- Hair thins and turns gray as melanin decreases, and height lessens perhaps by an inch or two as bone density decreases.
- The senses begin to dull.
- It is estimated that at age 65, fifty percent people have lost all their teeth. This increases the risk of tooth decay.

Health

- The mental, emotional, and behavioural problems typically encountered by older adults are depression, anxiety, and dementia (mental deterioration, also known as organic brain syndrome).
- The mental, emotional, and behavioural problems typically encountered by older adults are depression, anxiety, and **dementia** (mental deterioration, also known as **organic brain syndrome**

- **Depression** is the whole body illness, mood and thought.
- **Anxiety** is a general term for several disorders that cause nervousness, fear and worrying. It is characterised by a long lasting fear or worry about nonspecific life events, objects and situations.
- **Dementia** is the progressive deterioration in cognitive function, the ability to process thought (intelligence). Dementia is characterised by memory loss, moodiness because the part of brain that control emotion become damaged, communicative difficulties because the affected person finds it harder to talk, read and write. Dementia can be caused by **Alzheimer's disease.**
- **Alzheimer's disease** which is called also **Senile Dementia** is a progressive neurological disease of the brain leading to the irreversible loss of neurons and the loss intellectual abilities, including memory and reasoning, which become severe enough to impede social or occupational functioning.

Intelligence and memory

- Older adult tend to learn more slowly and perform less well on tasks involving imagination and memorization than do young adults, but what older adults may be lacking in terms of specific mental tasks, they make up for wisdom, or experts and practical knowledge based on life experience.
- Practice and repetition may help minimize the decline of memory and other cognitive functions.
- Many older adults complain about not being able to remember things as well as they once could. Memory problems seem to be due to sensory storage problems in the short-term rather than long-term memory processes.
- That is, older adults tend to have much less difficulty recalling names and places from long ago than they do acquiring and recalling new information.

Application activity 13.6.2

1. Write short notes on: dementia, senescence
2. Define menopause
3. Discuss why people over 75 years old have significant hearing impairment.
4. Describe the general effect of Alzheimer's disease and its likely outcome.
5. Discuss the difference between crystallized and fluid intelligence.
6. Discuss neuronal death and aging.

END UNIT ASSESSMENT

Being introduced on developmental psychology, developmental milestones and theories of human growth and development create by drawing a narrative story of human growvth and development during the whole lifespan.

1. Invent a poem that dignifies teachers or adults who assisted in your development considering domains of development and milestones.
2. Role play adolescence period. Involve in how to deal with social, emotional and cognitive development of adolescents.
3. Arnaud is two months. What do you think will be parents 'activities to ensure proper parenting and education during infancy, early, middle and late childhood periods?
4. After schooling in TTC, you may be appointed as a Head teacher or a Teacher in pre-primary or primary school. Plan a sensitization session to help the community to understand the proper care needed from conception onwards through age twelve.

UNIT 14: FACTORS THAT INFLUENCE HUMAN DEVELOPMENT

Key Unit competence: Describe how heredity and environment work together to shape human behavior.

Introductory Activity

1. A child can resemble and acts like father or mother, which leads to the proverb that says “Like father like son”. In Kinyarwanda, we say “Inyana ni iya mweru” or “Mwene samusure avukana isunzu”, now based on these Rwandan adage and the pictures below brainstorm and give examples of how a child can resemble and act like parents.

2. Anne and Rebecca are the true twins but they grew up in different environment. Anne is good at music but she cannot play basketball while Rebecca is good at playing basketball but it is not the same thing when it comes to music. Based on the picture below explain why they have these differences yet they are true twins.

14.1. Biological factors (nature / heredity)

Activity 14.1

Observe your hair, your skin, your fingers, your face etc.? Whom do you resemble much in your family? Try to justify the reason behind that resemblance.

All species transmit characters from one generation to the other through the mechanisms of genetics. It implies that every human being carries genetic traits which are inherited from parents. Those genetic traits are located within every cell in our body. **Heredity** is therefore the transmission of traits from one generation to the other.

It is known that heredity is a necessary factor for human development but likewise the environment is also necessary. Neither of the factors alone is necessary and sufficient to cause all complex human behaviour. Psychologists concentrate their research on the mechanism of the interaction between heredity and environment. Each new human being has a set of characteristics. When a male sperm combines with the female ovum, at the same time the child's parents/ grand parents have each contributed genes that will determine skin, colour, general body shape and size, hair and eyes colour and a thousand other characteristics.

It has long been known that certain physical characteristics are biologically determined by genetic inheritance. For example:

- Color of eyes
- Color of hair
- Straight or curly hair
- Pigmentation of the skin
- Certain diseases (such as Huntingdon's chorea)

Other physical characteristics, if not determined, appear to be at least strongly influenced by the genetic make-up of our biological parents.

- Height
- Weight
- Hair loss (in men)
- Life expectancy
- Vulnerability to specific illnesses (e.g. breast cancer in women)

These facts have led many to speculate as to whether psychological characteristics such as behavioral tendencies, personality attributes and mental abilities are also “wired in” before we are even born.

Application activity 14.1

1. Explain the meaning of heredity?
2. Outline 3 examples of physical characteristics which are determined by biological factors.

14.1.1. Function of genes and chromosomes in determining traits

Activity 14.1.1

Make a set of 46 cards of the same size. Divide them into 2 equal groups. Number the 1st group in black figures from 1 to 22 and mark the last one X. Number the second group in red figures from 1 to 22 and mark the last one as X or Y. Let each card represent one chromosome ant its attendant genes, the red being those from the father and the black those from the mother. If you shuffle all these cards together and lay them face up, you will see the arrangement of chromosomes that originated at every individual’s conception and which are now represented in all the cells of his/her body.

1. What sex of a baby if it has 2 X sex cells? What if it has one X and one Y?
2. How many chromosomes will the baby have? Why?

A trait is any gene-determined characteristic. Many traits are determined by the function of more than one gene. **For example**, a person’s height is likely to be determined by many genes, including those affecting growth, appetite, and muscle mass, and activity level. However, some traits are determined by the function of a single gene.

All living beings have genes, and they exist throughout the body. Genes are a set of instructions that determine what the organism is like, its appearance, how it survives, and how it behaves in its environment. Genes are made of a substance called Deoxyribonucleic Acid (DNA). They give instructions for a living being to make molecules called proteins (Wu, 2017).

Where do genes come from?

A gene is a basic unit of heredity in a living organism. Genes come from our parents. We may inherit our physical traits and the likelihood of getting certain diseases and conditions from a parent.

Genes contain the data needed to build and maintain cells and pass genetic information to offspring. Each cell contains two sets of chromosomes: One set comes from the mother and the other comes from the father. The male sperm and the female egg carry a single set of 23 chromosomes each, including 22 autosomes plus an X or Y sex chromosome. A female **inherits** an X chromosome from each parent, but a male inherits an X chromosome from their mother and a Y chromosome from their father.

Function

Genes decide almost everything about a living being. One or more genes can affect a specific trait. Genes may interact with an individual's environment too and change what the gene makes. Genes affect hundreds of internal and external factors, such as whether a person will get a particular color of eyes or what diseases they may develop. Some diseases, such as sickle-cell **anemia** and **Huntington's disease** are inherited, and these are also **affected** by genes.

In search of hereditary functions of genes, through his experiments on garden peas and fruit flies, Mendel hypothesised that some genes are dominant and others recessive. Like chromosomes, the genes also occur in pairs. Each of the pair is donated by one of the parents. An offspring thus may be found to derive a gene pair in one of the following forms:

- A dominant gene from one of the parents and recessive gene from the other.
- Dominant genes from both the parents.
- Recessive genes from both the parents.

In simple meaning a dominant gene must exhibit his dominance over the recessive ones. For example, if one parent furnishes a gene for brown eyes (known to be dominant) and the other provides a gene for a blue (a recessive gene), the offspring will have the brown eyes (characteristics of the dominant gene).

However, the fact that a particular trait is recessive in one generation is no way rules out its appearance in the future. For example, in above example of the mutation between brown and blue genes resulting into brown eyes, a recessive blue gene lies in a wait. If that offspring is copulated with someone with another gene for blue eyes (even if he or she may not possess blue

eyes) their offspring, the third generation might have blue eyes (MANGAL, 1988).

Application activity 14.1.1

1. Write true or false

a. A child inherits 23 pairs of chromosomes from each parent.

b. Recessive gene exhibits its dominance over dominance ones.

2. Explain the function of genes and chromosomes in determination of our traits.
3. Differentiate the term recessive and dominant.

14.1.2. Genetic abnormalities

Activity 14.1.2

Ali is a P1 student; he has flattened face, small nose, almond-shaped eyes because of large eyelid folds, respiratory and heart problems. He hardly finishes his work and participates in group. He struggles in many activities and this is the 4th year in p1. His teacher advises the parents to seek advice from the doctor. When the father asked the doctor about the behaviour of his son, he diagnoses Ali and found that he has genetic abnormality.

1. Outline the unusual behaviour and characteristics of Ali
2. What is the effect of Ali's unusual behaviour to his performance?
3. What is the cause of the unusual behaviour and characteristic of ALI?

A genetic disorder is a detrimental trait caused by an abnormal gene. The abnormal gene may be inherited or may arise spontaneously as a result of a mutation. Gene abnormalities are fairly common. A genetic disorder is a genetic problem caused by one or more abnormalities formed in the genome. Most genetic disorders are quite rare and affect one person in every several thousands or millions.

Genetic disorders may be hereditary or non-hereditary, meaning that they are passed down from the parents' genes. However, in some genetic disorders, defects may be caused by new mutations or changes to the **DNA**. In such cases, the defect will only be passed down if it occurs in the **germline**.

Genetic disorders can be monogenic, multifactorial, or chromosomal.

Some types of recessive gene disorders confer an advantage in certain environment when only one copy of the gene is present.

A chromosome is made of a very long strand of DNA and contains many genes (hundreds to thousands). The genes on each chromosome are arranged in a particular sequence, and each gene has a particular location on the chromosome (called its locus). In addition to DNA, chromosomes contain other chemical components that influence gene function.

Mutation

To prevent mistakes during replication, cells have a "proofreading" function to help ensure that bases are paired properly. There are also chemical mechanisms to repair DNA that was not copied properly. However, because of the billions of base pairs involved in, and the complexity of, the protein synthesis process, mistakes can happen. Such mistakes can occur for numerous reasons (including exposure to radiation, drugs, or viruses) or for no apparent reason. Minor variations in DNA are very common and occur in most people. Most variations do not affect subsequent copies of the gene. Mistakes that are duplicated in subsequent copies are called mutations**. Chromosome anomaly, abnormality or aberration is missing, extra or irregular portion of chromosomal DNA**.

Break down in the transmission of chromosomal information can also cause physical or mental defects. Occasionally sperm or ova are produced having more or fewer than the normal 23 chromosomes. During the process of crossing over, chromosomal fragment may not accurately separate and reattach. During the next step in meiosis, a pair of autosomes or sex chromosomes may end up in the sane gamete. Another gamete then is missing a chromosome from that pair.

Examples of chromosomal abnormalities

Disorder	Description	Physical signs	Development
Down syndrome	Most have an extra 21st chromosome so disorder is called trisomy 21.	Flattened face, small nose, almond- shaped eyes because of large eyelid folds, respiratory and heart problems that lower life expectancy.	Initially normal development, but retarded intellectual development before one year ; moderate to severe mental retardation in childhood and adulthood

Trisomy 13	Three chromosomes of type 13	Small head, malformed ear, eye disorders, abnormal brain structures and heart defects.	Severe mental retardation; nearly all die less than a year.
Turner syndrome	45-x or X0 only one sex chromosome on X	Female in appearance, but sterile; short stature and minor physical abnormalities.	Normal verbal intelligence, but poor visual- spatial abilities.
Klinefelter syndrome or XXY syndrome	47-XXY (two X and one Y) : some case have more than one Y	Male in appearance and above average in height; secondary sex characteristics do not develop normally and most are sterile	May show lower intelligence, sometimes retarded language development.
XYY syndrome	47-XYY (two Y chromosomes and one X), there could be more than one Y and one X.	Unusually tall	May show lower intelligence, but findings are inconsistent

There are several types of **chromosome abnormalities.** A person may have an abnormal number of chromosomes or have abnormal areas on one or more chromosomes. Many such abnormalities can be diagnosed before birth (Testing for chromosome and gene abnormalities).

Abnormal numbers of non-sex chromosomes usually result in severe abnormalities. For example, receiving an extra non-sex chromosome can be fatal to a fetus or can lead to abnormalities such as **Down syndrome,** which commonly results from a person having three copies of chromosome 21. Absence of a non-sex chromosome is fatal to the fetus.Large areas on a chromosome may be abnormal, usually because a whole section was left out (called a deletion) or mistakenly placed in another chromosome (called translocation). For example, **chronic myelogenous** is sometimes caused by translocation of part of chromosome 9 onto chromosome 22. This abnormality can be inherited or be the result of a new **mutation.**

Application activity 14.1.2

1. Write true or false

a. Down syndrome is characterised by Severe mental retardation; nearly all die less than a year .....

b. A person who has Turner Syndrome Female in appearance, but sterile; short stature and minor physical abnormalities. ....

c. Many chromosome abnormalities cannot be diagnosed before birth.

2. What are the causes of mistakes that happen during replication?
3. Where do Genetic disorders come from?
4. Revise the scenario of Ali (see tthe first activity 14.1.2)and state the type of syndrome that he had.

14.1.3. Temperament

Activity 14.1.3

Let us have a scenario, 4 groups of students each has 4 members and try to behave in the following situation.

Group1: have a tour outside in school ground and explore the environment(include the wife, husband and 2 children)

Group 2: make a family and have a celebration of birth day party of one of your child.

Group 3: as a family, go outside the classroom and imagine that you are going to meet your child who is from abroad (select one child and behave as if he/she is from outside the country to study and he/she meets the family at Kanombe airport).

Group 4: imitate behavior of a family where the husband is always drunkard and abuse the members of the family.

The rest of the classroom should observe the families in different situations.

1. How do family members from each family characterize their behavior and emotion?

Personality is determined by the interaction of temperament traits with the environment. Each person (including your child) comes with a factory installed wiring. How your child is wired can determine whether they will be easy or difficult to raise. How well their temperament fits with the environment and how well they are received by the people in the environment will determine how a child sees himself and others.

- **Concept of the temperament**

Temperament refers to personality traits that determine how someone reacts to the world. Are they quiet or rambunctious? Easygoing or apprehensive? The traits of temperament are mostly innate traits that we are born with, although they can be influenced by an individual's family, culture or their experiences. They are instrumental in the development of the child's distinct personality. These traits also determine how the child goes about learning about the world around him. These traits appear to be relatively stable from birth.

There are generally 5 characteristics that describe an individual's temperament:

- Emotional intensity
- Activity level
- Frustration tolerance
- Reaction to new people
- Reaction to change

A person's temperament style plays a role in how they behave and how they interact with other people and within their world as shown in the following example: trait of intensity of reaction.

- **Example: intensity of reaction**

Individuals differ in how strongly they react to situations. Some people react very mildly to situations, while others have more powerful reactions. Those with lower intensity may only smile when they receive good news, whereas individuals who react more intensely may jump up and down and run around the house when they get the same good news.

High intensity

More intense children will have very powerful reactions to things. When something negative occurs, their reaction will be very strong even if the situation isn't serious. For instance, if they want to wear their favourite purple shirt and it's in the washer, they may have an intense outburst. Similarly,

they may be hard to contain even when positive things occur. Children with high intensity reactions may be labelled as dramatic and it may seem like they are making a big deal out of nothing.

Low intensity

Children with low intensity will react very mildly to negative and positive situations. They will have a restrained reaction to things that happen to them or may not appear to react much at all. It may be difficult to recognize how a low intensity child is feeling.

Parenting and intensity of reaction

When parenting high intensity children, it's important to remember they are not purposely being difficult or dramatic. Understand that your child's strong reactions are part of their temperament and help them learn appropriate ways to express those strong emotional reactions.

For low intensity children, it is often more difficult for parents to recognize how their low intensity child is feeling because they may not show those emotions in their reactions or will not show them very strongly. Knowing that your child is low intensity, you can work on picking up on your child's cues and even asking about their feelings so that you are tuned in to how they are feeling.

Letting your daily schedule and expectations vary to meet your child's intensity of reaction can prevent conflict and stress, and allow your child to have their needs met in a way that plays to their strengths and builds upon their natural temperament. (Rymanowicz, 2007)

Why is it important for parents to understand the temperament of their child?

- When parents understand the temperament of their children, they can avoid blaming themselves for issues that are normal for their child's temperament. Some children are noisier than other. Some have more regular sleep patterns than others.
- When parents understand how their child responds to certain situations, they can learn to anticipate issues that might present difficulties for their child. They can prepare the child for the situation or in other cases they may avoid a potentially difficult situation all together.
- Parents can tailor their parenting strategies to the particular temperamental characteristics of the child. They can also avoid thinking that a behaviour that reflects a temperament trait represents a pathological condition that requires treatment. Parents feel more

effective as they more fully understand and appreciate their child's unique personality.

- Early on, parents can work with the child's temperamental traits rather than in opposition to them. Later as the child matures the parents can help the child to adapt to their world by accommodating to their temperamental traits.

Application activity 14.1.3

1. How does a child who has high emotion and intensity look like?
2. What can parent and teachers do to support such a child?

14.2. Environmental factors (Nurture/ Experiential)

Introductory activity 14.2

"Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. (1930). John Broadus Watson, Behaviorism. What does this statement teach you about the influence of environment?

14.2.1. Impact of relationships (serve and return)

Activity 14.2.1

Nyirarukundo is a working mother who has a 9 moths baby. In her absence, the baby stays with Mutoni, the caregiver. Mutoni is a good caregiver who is very responsive to the baby's needs.. The baby always enjoys staying with Mutoni. The baby would cry in her (Mutoni) absence instead of her mother. She (the baby) even cries when in his/her mother's hands.

1. Why does the baby cry when in her mothers' hand?
2. What advice would you give to other mothers to avoid the same situation?

Brain research shows that early experiences affect how the brain develops. And the most important factor for a child is to have loving relationships with a caregiver. When a child has responsive parent who is warm, interactive, and gentle, this lays a foundation for all of the child's future relationships and

shapes the adult he/she will become.

Children's relationships shape the way they see the world and affect all areas of their development. Through relationships children learn about their world. That's because relationships let children express themselves – a cry, a laugh, a question – and get something back – a cuddle, a smile, an answer. What children 'get back' gives them very important information about what the world is like and how to act in the world – how to think, understand, communicate, behave, show emotions and develop social skills. This back-and-forth communication strengthens relationships. It also helps children learn more about the world all the time. A child's most important early relationships are with his/her parents, other family members and caregivers.

It's not just the relationship between parents and their child that shapes his/her development. It's also parental relationships with others. Children see how their parents behave and communicate with other people in life – for example, husband/wife, family members, friends and neighbors. This gives children a model of how to be and behave with others and how other people will behave in return. If children see kind and respectful relationships, they will learn to act this way in relationships with others.

From the moment they're born, babies are very social. They want to spend time with you and communicate with their parents. And how parents respond help babies to learn. For example, it's natural for baby to want to communicate through babbling, facial expressions and gestures – for example, waving, nodding and shaking his head. It's important for parents to respond with the same kind of 'talking' and gesturing.

By responding in a warm, loving and gentle way, parents **help their child learn** about communication, behaviour and emotions. Parents make their child feel safe and secure, and promote a strong relationship with their child.

When the child feels safe and attached, s/he is likely to have the **confidence to explore** the world. That's because s/he knows a caring adult is there to support, encourage and share new experiences with her/him. Warm and loving interactions between parents and children develop confidence, resilience and communication. This prepares children for things they'll come across later in her life, like working through problems, dealing with stress and forming healthy relationships with other people in adolescence and adulthood. Strong attachments and relationships early in life also means children are more likely to have better mental health and fewer behaviour problems.

Application activity 14.2.1

Explain the importance of a good back-and-forth interactions between children and parents.

14.2.2. Influence of physical /natural environment

Activity 14.2.2

Kabibi and Kayesu are identical twins. Last year they sat for O-Level examination and Kabibi performed well. Kabibi went to study at TTC Bicumbi in SME option while Kayesu continued his studies at G.S NKANA where both children attended O-Level. Explain how different will environment influence their behaviours ?

Physical Environment is another factor which affects a child's development. There are various environmental factors that determine human development; we can say for example physical and social factors.

Physical factors

These factors include climate pure air and water. All these factors affect the growth of the body and mind. Many phenotype factors in human being are genetically transferred from parent to offspring. However, people who live in a particular place express similar traits. This is because of the environmental situation they are exposed to. The role of environment impact on individual's behaviour can be seen on its effects on prenatal and post natal development. Environment begins to affect an organism as soon as conceptions take place.

The influence of environment on human development can be well shown by the following examples:

- The wild child Victor of Aveyron who was found in **Aveyron**, in the central forest of France in 1785 and died in 1928. The boy was baptised victor and taken care of by a physician called Jean Mark from national institute of deaf mute. He could not speak any word and dress in cloth. He was used to sleeping on trees, but after training he could pronounce very few words and could dress to please his caretakers.

- Another example is two girls **Amala** and **Kamala** who were 4 years and 8 years respectively. They grow up with wolves and they walk and back like wolves. They were discovered in 1920 and cared for by missionaries. One died after one year and the other 4 years later but could speak very few words.

Environmental factors

These factors include family members, peer group, the school environment and the community. All of these influence much the development of the child.

- The family is the fundamental unit of the society. It helps us to learn sex roles, social skills and language. The pattern of family interaction, family size and quality of attention among family affect profoundly the development of an individual.
- **Peers:** This is where children come under the influence of others of their own age group. This mostly affects their development and patterns of responses. These influences continue throughout life.
- **School:** Schools influence a person's intellect, social skills, mental health and other aspects of behaviour through formal and informal programmes.
- **Media:** It is believed that what we read and watch and listen to, from news paper, TV, or Radio greatly influences our behaviour and personality, values and expression of emotions.

  These factors influence how children think, socialise and become self aware. Economic and political institutions, the media and cultural values all guide children how they live their lives.

Application activity 14.2.2

1. Based on the story of Amala and Kamala, explain the role of physical environment to the human development.

14.2.3. Impact of toxic stress

Activity 14.2.3

Mugisha is a primary one student. His father and mother always quarrel at evening. Mugisha many times hide himself under the bed when it is evening because the father likes to bit them when he is too much drunkard.

Think about the impact of this family relationship to the future behaviour of Mugisha.

Stress occurs continually, or is triggered by multiple sources that can take a toll on child's health. Toxic stress that children suffer not only shapes their emotional lives as adults, but also affects their physical and longevity.

Stress may have different forms: **Positive stress** which is response to a normal and essential part of a health development (an example of positive stress is being called for interview which requires an individual to prepare more and try harder).

Tolerable stress which is response to activates the body's alert systems to a greater degree (an example is when a person is frightened by a car accident).

Toxic stress is a response that occurs when a child experiences a strong, frequent and/or prolonged adversity which results in changes to their baseline state. Examples of toxic stress include physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence or the accumulated burdens of family economic hardship. The prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems and increase the risk for stress-related disease and cognitive impairment, well into adult years.

Toxic stress has the potential to change your child's brain and brain anatomy and even gene expression. Toxic stress weakens the architecture of the developing brain, which can lead to lifelong problems in learning behaviour, physical and mental health. When a child experiences toxic stress, the hypothalamic pituitary and adrenal hormone axis is over activated. This result in blood levels of the stress hormone cortisol being higher which can result in long term changes in inflammation and immunity. Studies have shown association between toxic stress and changes in brain structure. The consequences of this can include more anxiety as well as impaired memory and mood control. Toxic stress responses can also include changes in gene expression, meaning which genes in your DNA are turned on or off.

Application activity 14.2.3

Choose one of the possible causes of toxic stress and describe what it might look like in your community context by writing a case study of a child in such situation.

14.2.4. Relationship between heredity/nature and environment on human development/nurture

Activity 14.2.4

The picture below shows two identical twins brought up in the same family until marriage. Jane got married in a rich family while Janet was unlucky and got married in a very poor family as observed in the pictures. How both heredity and environment influenced these twins to differ in their development?

The basic mechanism or causes of development change are genetic factors (nature) and environmental factors (nurture). Thus every traits of organism depend on heredity and environment. This notion, throws light to the fact that the nature-nurture relationship may be conceived in terms of additive contribution where both contribute to all behavioural development. This view is accepted by many people but it doesn't hold for all the analysis. For instance, attempts have been made to determine the above view on intelligence and the result showed that heredity contributes about 75% and environment 25%. It should also be noticed, the extent of influence of each factor either nature and nurture depends on the contribution of the other for instance a nurture factor will exert a different influence depending

upon specific material it contributes similarity, any nature factor will operate differently under varying environmental conditions. For example: diet and exercises lead to body weight and shape due to inherited traits.

Furthermore, a person's IQ (Intelligence Quotient), nurture, may be retarded by metabolic disorder (nurture) which is attributed to a single recessive gene. We can conclude that it is difficult to determine what is contributed by heredity and environment as for as human is concerned. In order to understand this, let try to analyse two examples:

The first one is on identical twins (monozygotic twins) comparing with fraternal twins (dizygotic twins). On monozygotic twins, any genetic information concerning physical and psychological predisposition should be exactly the same for these twins. For the zygotic twins, the genetic profiles are similar only to extent they share the same set of biological parents. By doing research comparing the correlation of identical on some particular dimension such as intelligence, they find that they resemble 86%, while fraternal twins resemble 55%. This means for both identical and fraternal twins there are the influences of the environment (Njagi, E.B, 2013).

The second one is on adoption related studies. There are two typical variations in adoption related studies: ones involving comparison of identical twins reared apart and others comparing the degree of similarity between adopted children and their biological and adoptive parents.

Findings from these studies revealed that:

- Identical twins reared apart share genetic pattern with each other, yet they do not share the same environmental experiences.
- Adopted children, by contrast, typically share with the rest of adoptive family similar environmental experiences but do not share any gene with them.

In general, the interaction for both heredity and environment is responsible for the following characteristics and traits: somatic structure, physical appearance, mental make-up, social behaviour, emotions.

Application activity 14.2.4

1. In your own words, explain how do fraternal twins differ from identical twins.
2. With clear example how can heredity and environment work together to influence human development.

END UNIT ASSESSMENT

1. Environment is one of the factors that influence human development. Describe the components of good and stimulating environment for holistic development of a child.
2. If parents can influence negatively or positively the child's development. What do you think the parents should do to influence the child' development in positive ways.

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