

GENERAL PEDAGOGY MANUAL FOR UNTRAINED TEACHERS



Ministry of Education
REPUBLIC OF GHANA

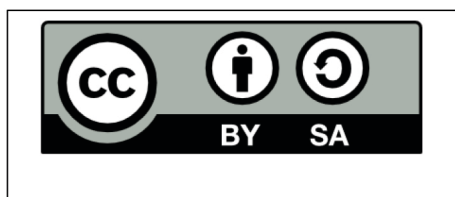


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GENERAL PEDAGOGY TRAINING MANUAL FOR UNTRAINED TEACHERS



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Contents

UNIT 1: ESSENTIAL PEDAGOGIES AND PROFESSIONAL PRACTICE	1
Session 1: Understanding the Curriculum and Lesson Planning.....	1
Session 2: Planning Lessons	7
Session 3: Theories of teaching and learning	7
Session 4: Inclusive Educational Practices	19
UNIT 2: PROFESSIONAL ATTITUDES, VALUES AND ETHICS IN TEACHING	35
Session 1: Teacher Professionalism	35
Session 2: Codes of Conduct and Ethics in Teaching	35
UNIT 3: USE OF ICTS IN EDUCATION	48
Session 1: Introduction to the use of ICTs in Education.....	49
Session 2: Using Online Applications in Education.....	56
Session 3: Using Open Educational Resources	59
Session 4: Health and Safety Issues (i.e., Cyber Bullying, Health, and Plagiarism).....	55
UNIT 4: ASSESSMENT PRACTICES IN SCHOOLS	60
Session 1: Nature, Principles, and Qualities of Assessment	61
Session 2: Purpose of Assessment.....	70
Session 3: Forms of Assessment.....	74
Session 4: Test construction, administration, scoring, and giving feedback	79
UNIT 5: CLINICAL TEACHING	88
Learning outcomes.....	88
Prerequisite Courses	88
Learning to Teach	88
During Lesson.....	89
Post- Lesson	89
ACKNOWLEDGEMENT	93
APPENDIXES	95
ICT use in the classroom: Making the most of ICT.....	95
OER CYCLE ACTIVITY SHEET.....	100
APPENDIX A	101
General Guidelines for Item Writing	101

APPENDIX B	102
Guidelines for Writing Multiple-Choice Items	102
APPENDIX C	103
Checklist for Evaluating Multiple-choice Items	103
ACTIVITY SHEET A	104
ACTIVITY WORKSHEET B	105
ACTIVITY WORKSHEET C: Developing the Test Blueprint	115
REFERENCES	118

UNIT 1: ESSENTIAL PEDAGOGIES AND PROFESSIONAL PRACTICE

This unit introduces users and practitioners to the Ghanaian school curriculum and how to plan effective teaching and learning. The unit also highlights major learning theories including social cognitive, behaviourism and constructivism and how they apply to teaching and learning. Finally, the unit looks at inclusive teaching and learning practices that promote effective teaching and learning, and consequently address learners' diverse educational needs.

Learning outcome(s)

By the end of the unit, the participant will be able to:

- Explain the rationale, aims and the two types of curricula implemented in Ghana.
- Develop a standard lesson plan.
- Develop an understanding of behaviourism, cognitivism, social learning, constructivism, and their educational implications.
- Demonstrate understanding of inclusive education, teaching, and learning.
- Apply practices that promote effective teaching and learning to address learners' diverse educational needs.

Session 1: Understanding the Curriculum and Lesson Planning

In this session, we will focus on the rationale, aims, philosophy and vision of the Ghanaian school curriculum. Specifically, we will consider two types of curricula. These are the standards-based and objective-based curricula. Furthermore, we will study the components of the Basic School curriculum, the structure of a lesson plan and its relevance to effective teaching and learning.

Learning outcomes

By the end of the session, the participant will be able to:

1. Define the term 'curriculum' and differentiate between the standards-based and the objective-based curricula.
2. Explain the rationale, aims, and philosophy of the Ghanaian school curriculum.
3. Explain the major components of the school curriculum.

Meaning of Curriculum

The origin of 'Curriculum' is Latin meaning 'course'; derived from "curro" and "curree" – racecourse – meaning to run or move quickly. Simply, 'Curriculum' can be referred to as a set of course, related content and coursework offered at a school or university. When seen as prescriptive, a 'curriculum' could generally be a syllabus which specifies what topics that students should learn and understand and to what level to achieve a defined grade or standard. Over the years, however, some individuals have attempted to provide a precise definition of 'Curriculum'. Notably among them are:

John Kerr who defined curriculum as "All the learning, which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school." From this definition is the:

1. recognition that learning is planned and guided
2. appreciation of schooling, school and outside school practices including subjects and lessons.

Cronbleth (1992) sees curriculum as answering three fundamental questions of what knowledge, skills and values are most worthwhile? Why are they most worthwhile? How should the young acquire them? And for Tanner and Tanner (1980), curriculum is defined as "the planned and guided learning experiences and intended outcomes, formulated through the systematic reconstruction of knowledge and experiences under the auspices of the school, for the learners' continuous and wilful growth in personal social competence"

In Ghana, two main types of curricula are in operation currently. These are the standards-based curriculum and the objective-based curriculum. The objective-based curriculum is operational only at the Senior High and Senior High Technical Schools level.

Standards-Based Curriculum

The Standards-Based Curriculum (SBC) ensures that the content of the curriculum is set to specific national or international standards. It specifies a series of skills, values, and competencies one needs to acquire and develop at specified stages of learning. For example, all children at a specified grade (e.g., P6) are supposed to be able to exhibit certain:

- knowledge (such as being able to read and write appropriately for that grade level)
- skills (performing manipulative skills in specified subjects)
- proficiency (achieving at least the expected minimum performance for a specific grade level)

- apply the knowledge and skills in other areas of learning or solve real-life problems

Simply, Standards-Based Curriculum places emphasis on what learners need to know, understand and be able to do.

Characteristics of the standards-based curriculum

- comprehensibility (broad range of standards to be acquired)
- developing in-depth ideas (in all subject areas)
- application of knowledge and understanding
- accountability oriented

Objective-Based Curriculum

These are broad national and international behaviours learners are expected to exhibit at the end of a learning session. Here are two examples:


- A teacher teaching numeracy in grade 6 may expect that learners will be able to do addition and subtraction of 4-digit numbers at the end of the lesson.
- In an English Language lesson on grammar, a teacher may expect learners to be able to identify a **noun** in a sentence.

Characteristics of the objective-based curriculum

- Be sustainable within a reasonable amount of time
- Sequentially appropriate
- Be developmentally appropriate

The Rationale for the Basic School Curriculum (BSC) (Standards-based Curriculum)

The rationale for developing the BSC is to promote and achieve quality teaching and learning in schools that will equip learners to develop the relevant knowledge, skills, competencies, values, and attitudes required of a global citizen. Apart from the general rationale for the BSC, there is the subject-specific rationale

 Please refer to the national Council for Curriculum and Assessment (NaCCA) website (<https://educandghana.net/new-curriculum-for-basic-schools-and-its-associated-terms-for-teachers/>) to download all subjects in the BSC and read the rationale for each subject).

It is important to stress that the national pre-tertiary education curriculum framework is the policy document approved by the Cabinet of the Republic of Ghana to guide the development of standards-based curricula for Basic Schools and Senior High Schools. The Technical and Vocational Education and Training curriculum is competency-based (another name generally for standards-based curriculum).

At the heart of both the standards-based and competency-based curricula is learning and the approaches to teaching for learning to happen for the benefit of all learners.

The Teaching and Learning Philosophy of the BSC/SHS/SHTS (Standards-based Curricula)

Teaching Philosophy

This suggests that teachers create learning opportunities for learners to participate in the teaching process actively. For example, the BSC encourages teachers to:

- Use innovative, creative, and practical ways of teaching school subjects.
- Help create new knowledge and apply knowledge to solve problems in creative and innovative ways.

Learning Philosophy

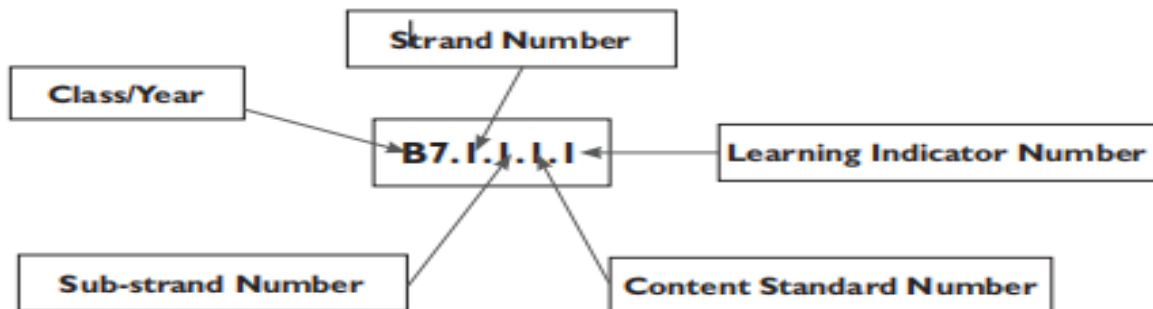
Teaching all the subjects in the schools should be an active, contextualised process of constructing knowledge based on learners' experiences rather than merely acquiring knowledge that is put into no context. Learners are knowledge constructors who operate as researchers. Teachers serve as facilitators by providing the enabling environment that promotes the construction of learners' knowledge based on their previous experiences. This makes learning more relevant to learners and leads to the development of critical thinkers and problem solvers. In this regard,

- teachers serve as facilitators by providing the enabling environment that promotes the construction of learners' knowledge based on their previous experiences
- teachers motivate learners to develop critical thinking and problem-solving skills
- learners take responsibility for their learning and actively engage in the learning process.

Components of the BSC (Standards-based Curriculum)

Class/Year	Strand Number	Sub-strand Number	Content Standard Number	Learning Indicator Number
Strand 3: Grammar Usage				
Sub-Strand 1: Grammar				
B7		B8	B9	B10
B7.3.1.1: Apply the knowledge of word classes and their functions in Communication.		B8.3.1.1: Apply the knowledge of word classes and their functions in Communication	B9.3.1.1: Apply the knowledge of phrases and clauses and their functions in Communication.	B10.3.1.1: Apply the knowledge of phrases and clauses and their functions in Communication.
B7.3.1.1.1. Demonstrate command and application of nouns in text.		B8.3.1.1.1. Demonstrate command of the functions of nouns in situational analysis	B9.3.1.1.1. Identify and use noun phrases accurately in context	B10.3.1.1.1. Use the noun clause accurately in context

is shown below:



- The curriculum is the totality of experiences, knowledge, values, skills, and ideas learners are supposed to be engaged during study or schooling.
- The standards-based curriculum comprises the content and skills that learners need to know by the end of a week, term, or the school year; an objective-based curriculum is the content and skills learners need to know by the end of a lesson.
- Every curriculum has a rationale, aim, philosophy, teaching and learning strategies and assessment.
- There are relationships among curriculum, scheme of work, syllabus and lesson plan.
- The components of the BSC plan include strand number, sub-strand number and content strand number.

- What are some of the experiences (i.e., cognitive, psychomotor, and affective) I went through at the basic/secondary/tertiary level(s)? How have these experiences prepared me to achieve the school curricula aims, values and aspirations?
- How have my experiences in this training session prepared me to be a better classroom practitioner? Which specific examples can I draw from the course to support my position?

Discussion

- How has this session equipped you to be a better classroom practitioner?
- How similar are the aims of the subjects in the curriculum?
- How can you contribute to achieving the aims and vision of the BSC (standards-based curriculum)?

Session Two: Planning Lessons

In this session, we will focus on the meaning of a lesson plan, the relationship among curriculum, syllabus, scheme work and lesson plan, standard lesson plan, components of a lesson plan and its relevance.

Learning outcome(s):

By the end of the session, the participant will be able to:

- Tell what a lesson plan is and its relevance to teaching and learning.
- Describe the relationship among curriculum, syllabus, scheme of work and lesson plan
- Describe the components and formats of a lesson plan

Definitions of syllabus, scheme of learning and lesson plan

- A syllabus lists topics learners should study in a particular subject at school or college.
- A scheme of learning is a guideline that defines the structure and content of an academic course and maps out clearly how resources (e.g. books, equipment, time) and class activities will be utilised or implemented.
- A lesson plan is a teacher's detailed description of the course of teaching and learning for a lesson.

YEARLY SCHEME OF LEARNING (BASIC)

WEEK NUMBER	SEMESTER 1	SEMESTER 2
1		
2		

SEMESTER SCHEME OF LEARNING

WEEK NUMBER	STRAND	SUB - STRAND	CONTENT STANDARD	INDICATOR	RESOURCES
1					
2					

WEEKLY SCHEME OF LEARNING

WEEKENDING:		PERIOD	SUBJECT
DURATION:		REFERENCE:	STRAND
CLASS:		CLASS SIZE:	SUB -STRAND:
CONTENT STANDARD:		INDICATOR	LESSON:
PERFORMANCE INDICATOR			CORE COMPETENCIES:
TEACHING LEARNING RESOURCES:			
KEYWORDS:			
DAYS	PHASE 1: STARTER Introduction (Preparing the brain for learning)	PHASE 2: MAIN (New Learning including Assessment and lesson development)	PHASE 3: REFLECTION /Plenary (Learner and Teacher)
MONDAY			
TUESDAY			
WEDNESDAY			
THURS			
FRIDAY			

Relationship among curriculum, syllabus, scheme of learning and learning plan

According to Tamakloe et al. (1996), there are relationships among instructional programmes (syllabus), preparing a scheme of work and drawing up lesson plans. Thus, a scheme of work guides a lesson plan; the syllabus guides a scheme of work; and the national curriculum guides the syllabus.

In Ghana, NaCCA, an agency of the Ministry of Education (MoE), is solely responsible for planning the syllabus, whilst classroom teachers oversee the implementation of the syllabus at all the various pre-tertiary levels of education.

Conditions necessary for effective lesson plan preparation

1. Good mastery of the subject matter of the topic to be taught.
2. Good revision of what is to be taught to refresh the teachers' memory and ensure accuracy.
3. The teacher must consult the scheme of work (learning) that contains the learning areas intended to be taught.
4. The teacher should consider the ages and ability of the learners when planning the lesson (learning).
5. Attention should be given to the choice of the channel for communicating with the learners about what is to be learned.
6. Availability of adequate, relevant, quality teaching-learning resources to enhance the teaching and learning process.

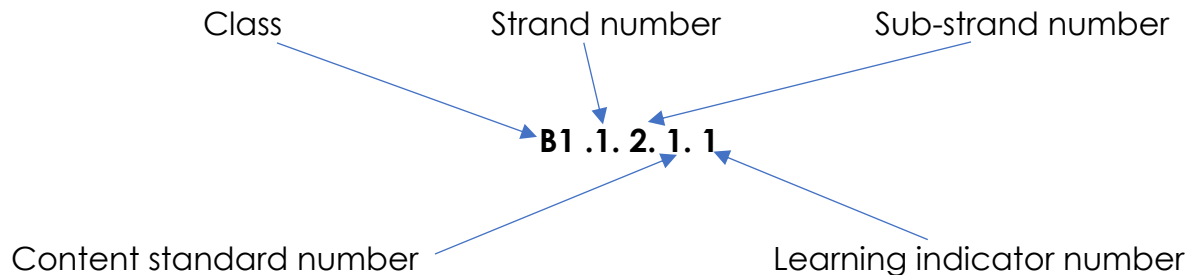
Sample Lesson Format for Junior High School

A. TEMPLATE FOR PLANNING A WEEKLY LESSON PLAN-JHS

Week Ending							
Date:		Period:			Subject:		
Duration:		Strand:					
Class		Class Size:			Sub-Strand:		
Content Standard (Broad goals of the lesson)		Learning Indicator:			Lesson:		
Performance Indicator		<p>Core Competencies: Creativity and Innovation, Communication and Collaboration, Personal Development and Leadership, Critical Thinking and Problem Solving, Digital Literacy, Cultural Identity and Global Citizenship.</p>					
Teaching Learning Resource (TLR)							
Keywords:							
Reference (s)							
DAY	Phase 1: Starter (Preparing the brain for learning)		Phase 2: Main (New Learning including assignment)		Phase 3: Plenary/Reflections (Learner and Teacher)		
	Learners'/ Teachers' Activities	Resource	Learners'/ Teachers' Activities	Resource	Learners'/ Teachers' Activities	Resource	
MONDAY							
TUESDAY							
WEDNESDAY							
THURSDAY							
FRIDAY							

Components of a Learning Plan

A unique annotation is used to label the class, strands, sub-strands, content standards and learning indicators in the curriculum for easy referencing.



Strands are the broad areas/sections of subject content to be studied.

Sub-strands are the topics within each strand under which the content is organised.

Content standard refers to the pre-determined level of knowledge, skill and/or attitude that a learner attains by a set stage of education.

Learning Indicator is a clear outcome or milestone that learners must exhibit yearly to meet the content standard expectation.

Exemplar refers to support and guidance, which clearly explains the expected outcomes of an indicator.

Performance indicator: This involves stating the lesson application.

Core competencies

The core competencies describe a body of skills teachers at all levels should seek to develop in their learners.

Critical thinking and Problem-solving (CP)

This skill develops learners' cognitive and reasoning abilities to analyse and solve problems.

Creativity and Innovation (CI)

Creativity and Innovation promote entrepreneurial skills in learners through their ability to think of new ways of solving problems and developing technologies for addressing the problem at hand.

Communication and Collaboration (CC)

This competence promotes in learners the skills to use languages, symbols, and texts to exchange information about themselves and their life experiences.

Cultural identity and Global Citizenship (CG)

This competence involves developing learners to put country and service foremost through understanding what it means to be active citizens.

Personal development and Leadership (PL)

This competence involves improving self-awareness and building self-esteem. It also entails identifying and developing talents, fulfilling dreams and aspirations.

Digital Literacy (DL)

Digital Literacy develops learners to discover, acquire and communicate through ICT to support their learning. It also makes them use digital media responsibly.

Phase 1: Starter (Preparing the brain for learning): A starter should stimulate curiosity and open-mindedness and prepare the brain for learning; these can be random and/or linked to the content standard. For example, random mental activities (fast-paced games) or reinforcement short activities.

Phase 2: Main (New Learning, including assignment): Activities to explore new learning content for a day (including at least 10 minutes where learners do problems or exercises alone or collaboratively in their exercise books and the teacher move around to monitor and check work (Please write the major ideas for each activity on the chalkboard for learners to copy into their books).

Phase 3: Plenary/Reflection's (Learner and Teacher): Reflect, recap on and consolidate the learning that has happened in the day's lesson

Relevance of Lesson Plan to teaching and learning

According to Larbi and Asare (2003), lesson plans:

1. Help plan the aspect of the curriculum to impart to a class during a lesson period
2. Facilitate the presentation of a lesson to learners systematically
3. Specify the instructional objectives to be achieved in a particular lesson
4. Organise complex materials into smaller and easier parts
5. Promotes the effective use of various teaching and learning materials to support the lesson presentation.
6. Help establish how learners' lessons will be assessed or evaluated.

Key ideas

- A lesson plan is a brief written record of a lesson to be taught by the classroom teacher
- The syllabus provides the basis for the scheme of work and the lesson plans.
- The components of a lesson plan include the class, strands, sub-strands, content standards and learning indicators
- A lesson plan facilitates the systematic presentation of a lesson, organises complex materials into smaller and easier parts, and establishes how learners' lessons will be assessed or evaluated.
- Some of the core competencies include Critical thinking and Problem-solving (CP), Creativity and Innovation (CI), Communication and Collaboration (CC), Cultural Identity and Global Citizenship

(CG), Personal Development and Leadership (PL), Digital Literacy (DL).

Reflection

- Do I remember any experience or encounter in school or the university where I thought the teacher came to class unprepared due to poor prior lesson preparation?
- How do I avoid such embarrassing situations in the classroom as a teacher?

Discussion

1. Teachers are born, but they are not made. Therefore, born teachers do not need to prepare before they go to class to teach a lesson. Let us discuss this statement.

Session 3: Theories of teaching and learning

This session will focus on some prominent learning theories and their importance or implications for teaching and learning.

Learning Outcome(s):

By the end of the session, the participant will be able to:

- Explain the main ideas of behaviourism, cognitivism, and constructivism theories.
- Explain the main ideas of social-emotional learning.
- Discuss the implications of learning theories in teaching and learning.

Meaning of learning theory

Learning theories describe the conditions and processes through which learning occurs, providing teachers with models to develop teaching and learning sessions that lead to better learning. Learning theories are important to us because they help us to:

- i. explain why certain factors are important in the way we learn
- ii. explain the cause-and-effect relationship (why principles of learning have their effect)
- iii. describe the underlying mechanisms involved in learning
- iv. help us to design learning environments.

Learning theories are grouped under broader perspectives. Three of these broader perspectives are behaviourism learning theories, cognitive learning theories and constructivism learning theories.

Behaviourism Learning Theories

These learning theories are based on the idea that all behaviours are acquired through interaction with the environment. The main idea from this learning perspective is that learning occurs by repeatedly associating a stimulus and a response. They look at learners' observable actions and assess whether they are learning as effectively as possible. Examples of behaviourism theories include Classical conditioning theory by Ivan Pavlov, Instrumental learning theory by Edward Lee Thorndike and Operant Conditioning Learning by B.F Skinner.

Educational implications of behaviourism

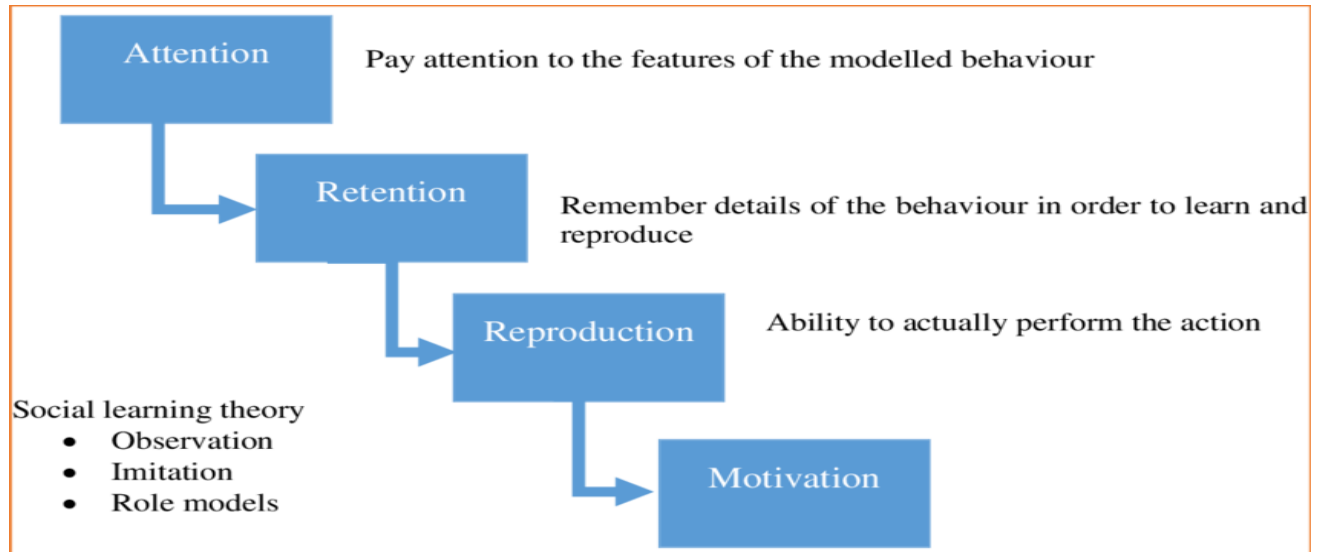
1. when a teacher rewards a learner with a book prize for getting excellent grades, the learner will be encouraged to learn even more
2. special privileges are given to a learner for exhibiting good behaviour in a week or term so that they will continue to exhibit good behaviour.
3. disciplining learners to stop unwanted behaviours (law of effect)
4. drilling learners to practice or master a given concept (law of practice)
5. Using novel ways to introduce lessons (law of readiness)
6. Teaching learners to generalise and differentiate between concepts

Helping learners acquire desirable behaviours and unlearn undesirable behaviours

Social Learning Theory

Social learning is based on the behaviour modelling theory, where people learn new things by observing others. Learning depends on personal (e.g., cognitive, affective and biological events) and environmental factors. Therefore, the educator's or teacher's responsibility is to create a collaborative environment focused on problem-solving that makes learners active participants in their learning.

The process of learning is depicted in Figure 1



Educational Implications of the social learning theory

- Peers teaching peers as peer coaches
- Imitation through real plays
- Reinforcement and motivation through simulation and gamification
- Attention and flipped classroom

Cognitive Learning Theory

Cognitive learning theory is about understanding how the human mind works while people learn. The theory focuses on how the brain processes information and how learning occurs through internal information processing. Whereas behaviourists focus on external or observable behaviours to assess learning, cognitivists are more concerned with internal factors and processes that bring about learning.

Educational implications of the cognitive learning theory

1. Learning is a process of organising information into conceptual models.
2. Instruction should be organised, sequenced, and presented in a manner that is understandable and meaningful to the learner.
3. Memory is supported by organising learning material.
4. Teachers must provide tools that help learners' brains process information.
5. Classroom activities that encourage and assist self-learning must be incorporated.
6. Practical learning situations must be included in the class.

7. Co-curricular activities that enhance children's cognitive development must be equally important to curricular activities.
8. The teaching method must be simple to complex, and the inclusion of the project teaching method is recommended.
9. Children learn and think differently from adults; therefore, they should be taught accordingly.

Constructivism Learning Theory

Constructivism is the theory that says learners construct knowledge rather than just passively taking in information. Constructivism's central idea is that human learning is constructed, that learners build new knowledge upon the foundation of previous learning. This prior knowledge influences what new or modified knowledge an individual will construct from new learning experiences. Constructivists believe that learning is affected by the context in which an idea is taught and learners' beliefs and attitudes. Notable constructivists are Lee Vygotsky and Jean Piaget. While Piaget (1973) developed the cognitive constructivism view of learning, Vygotsky (1978) developed the social constructivism view of learning.

Educational implications of constructivist theory

1. Helps learners to gain their conclusion through the creative aid of the teacher as a facilitator.
2. Learners are exposed to data, primary sources, and the ability to interact with other learners to learn by incorporating their experiences.
3. Having learners working together and aiding in answering one another's questions.
4. Designating one learner as the "expert" on a subject and having them teach the class.
5. Allowing learners to work in groups and research challenging topics which they must present to the class.

Key ideas

- Learning theory describes how learners receive, process, and retain knowledge during learning.
- The importance of the theories is to help the teacher connect to all different kinds of learners and understand how learners learn and explain, describe, analyse and predict learning.
- Behaviourism focuses on the idea that all behaviours are learned through interaction with the environment.
- Cognitive theory suggests that the human mind is like a computer constantly encoding and processing information.
- Constructivism allows the learner to build upon his or her previous experience and understanding to “construct” a new understanding.
- Social learning teaches that all knowledge develops because of social interaction and language use and is, therefore, a shared rather than an individual experience.

Reflection

Considering the key principles and classroom implications above, think about the following questions:

- Reflect on some of the teaching methods your teachers or lecturers adopted and explain how they are linked to any of the theories discussed.

Discussion

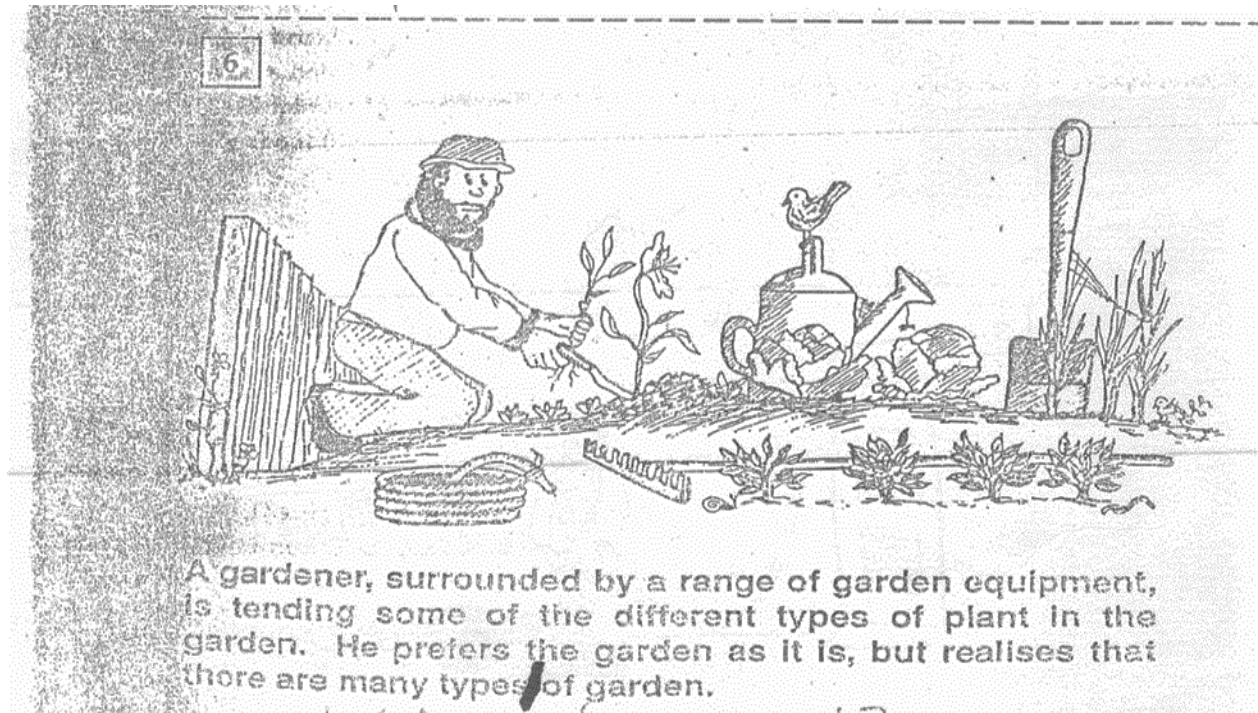
Discuss the strengths and weaknesses of the theories explained above.

Scenario 1

In this 21st century, many changes are going on in the education setting. As a teacher, which learning theories will you adopt if you are asked to and why?

Scenario 2

Describe the image below in relation to behaviourist learning perspectives. Discuss **any two** implications for teaching and learning from the illustration



Session 4: Inclusive Educational Practices

In this session, we will explain what inclusive education is, its principles and its characteristics. We would also learn about diversity in the educational needs of learners in our communities, schools, and classrooms. Finally, we briefly consider the main ideas of social-emotional learning and its educational implication.

Learning outcomes:

By the end of the session, the participant will be able to:

- Explain what inclusive education is and five (5) areas of diversity among learners.
- List at least three (3) activities that promote inclusive education, teaching, and learning.
- Provide at least three (3) reasons for implementing UDL in schools.

Meaning of Inclusive Education (Teaching and Learning)

The constitution of Ghana entitles all learners to be provided with quality education (MoE, 2015). Inclusive Education ensures access and learning for all learners, especially those disadvantaged (MoE, 2015; United Nations, 2016). Some areas of learner diversity include those shown in Figure 2

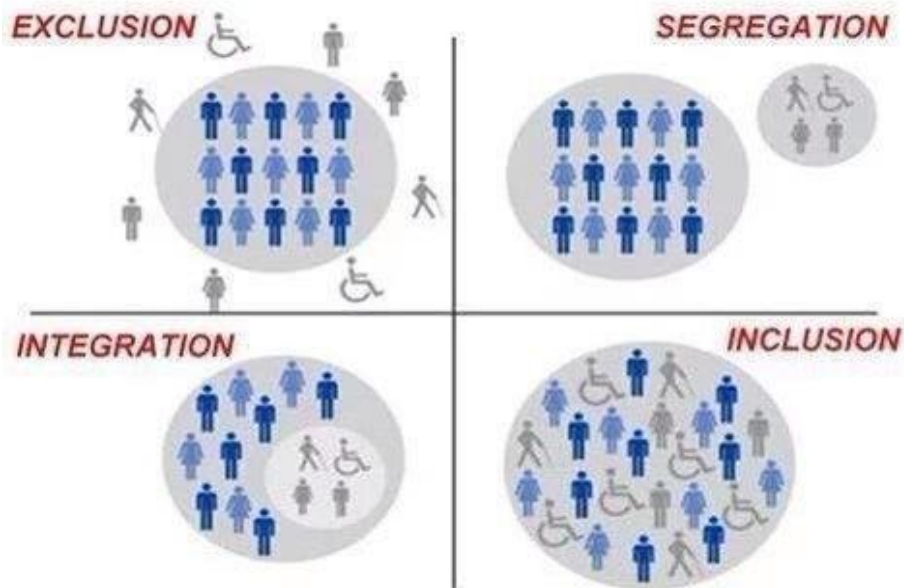


The guiding principle of inclusive education is that schools should accommodate all children regardless of physical, intellectual, social, emotional, linguistic, or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations,

children from linguistic, ethnic, or cultural minorities and children from other disadvantaged or marginalised areas or groups.

Inclusive education also takes into consideration gender issues such as the unfair treatment of females or males based on false assumptions about what they can or cannot do. This refers to the socially constructed differentiated roles assigned to both sexes, whereby both men and women are expected to conform to and perpetuate the roles and behaviours that have been assigned to them.

Figure 3. Shows the various forms of exclusion and inclusion in classroom settings.



The need for inclusive education

1. Learners educated in inclusive settings are more likely to have learner engagement, make friends, and have fewer challenging behaviours (Bui et al., 2010).
2. Learners with disabilities have the greatest access to the general education curriculum when attending general education classes (Ryndak et al., 2014; Wehmeyer & Shogren, 2017).
3. Learners with intellectual disabilities and autism make more academic progress in inclusive classrooms than in segregated (Kurth & Mastergeorge, 2012).
4. Learners without disabilities made comparable or greater gains in literacy and numeracy when taught in inclusive classes (Waldron, Cole, & Majid, 2001).

Activities that promote inclusive education, teaching, and learning

1. Placing learners in mainstream classes with appropriate support
2. Changes in content, teaching methods, and strategies for teaching (Using Gender Equality and Social Inclusion (GESI) responsive pedagogy)
3. Flexibility in assessment (content, process, environment, and output)
4. Whole systems approach: with the support of education ministries
5. Whole school approach: with the support of school leadership
6. Developing positive attitudes toward all learners
7. Removing all barriers to learning and participation (visual, hearing, audio-visual support etc.)

Activities the Promote GESI-Responsive Pedagogy

GESI-responsive pedagogy simply means adopting a teaching and learning method that ensures that the needs and interests of all learners are well catered for throughout the teaching process. The following are some strategies through which GESI-responsiveness can be integrated in the teaching and learning process:

- a) Knowledge of the learner
- b) Lesson planning
- c) Choice of teaching and learning materials
- d) Methodologies for teaching
- e) Learning activities
- f) Classroom setup
- g) Classroom engagement and interaction
- h) GESI-responsive language use
- i) Assessment
- j) Safe classrooms/ schools – prevent bullying and sexual harassment

- a) Knowledge of the Learner
 - Endeavour to know the learner by name
 - Acknowledge their presence in the class/ lab/ workshop
 - Know about their background – previous school, favourite subject etc.
 - Conduct general assessment of learners' learning capacity and interests
 - If possible, identify obvious and hidden disabilities

b) Gender-Responsive Lesson Planning

A Gender-responsive lesson plan takes into consideration the specific needs of ALL learners throughout the teaching-learning process. It involves the content to be delivered, choice of teaching and learning materials, methodologies for teaching, learning activities to be used, classroom setup, interaction/ engagement with students, language use, and assessment. If the lesson planning process fails to take GESI into consideration, achieving GESI-responsive pedagogy becomes difficult.

c) Choice of teaching and learning materials

- Review all teaching and learning resources to ensure that they do not contain gender stereotypes.
- If the available teaching and learning material (TLM) contains GESI stereotypes, figure out strategies to address them. For e.g., if faced with a history textbook that portrays only male heroes, draw up a list of female heroes.
- If a chemistry textbook portrays only male scientists as inventors or scientists without disabilities, include a discussion of female scientists and scientists with disability.
- Carefully review the language used in the TLMs for responsiveness – no stereotypes.

d) Methodologies for teaching

- Select teaching methodologies that will ensure equal participation of girls, boys, and students with special needs.
- Ensure that dominant individuals do not side-line less assertive ones.
- Protect students with disability from abuse by other students and even other teachers
- Some methodologies to ensure equal participation include:
 - Mixed proficiency groupings
 - Individual reading and reflections
 - Think – pair – share
 - Lived experiences of learners (females, males, SEN)
 - Positive reinforcement especially for shy and afraid learners
 - Group work and Group project work
 - Individual project work

e) Learning activities

- The lesson plan should make allowance for all students to participate in the learning activity.
- When doing science experiments, ensure that girls, boys, and students with disability have a chance to use the equipment and chemicals.

- There should also be equal participation in such activities as making presentations.
- When assigning projects, ensure that both females and males are given leadership positions and roles.
- Ensure that learning materials are distributed fairly to both girls and boys, especially in case of limited supply.

f) Classroom Setup

- Take into account how you set up the classroom and engage with students in a way that will encourage equitable involvement from all students.
- Desk placement should promote active involvement from all students. The teacher should be positioned so they can look each student in the eye, either standing or sitting.
- The lab/workshop stools need to be a good height and size for all students to sit comfortably.
- All users should be able to access tools regardless of their height or location on shelves. Illustrations and pictures on the walls should send positive images of women, men and persons who are differently abled. Messages should not perpetuate stereotypes.
- There should be enough seats and spaces for all students to work; where there is a limited supply, a rotation plan must be in place for everyone to have their turn.
- Arrangement of furniture should ensure that students with disabilities are comfortable.

g) Classroom engagement and interaction

- Give an equal chance to all learners to ask and answer questions and try their hands at everything.
- Pay extra attention to learners who are shy or have low confidence.
- Use participatory methods such as groupwork to ensure equal participation of all learners.
- Pay attention to the composition of learners with strong background and learners with a relatively weak background.
- Check if all learners understand the lesson/ activity.
- Provide encouraging feedback to all learners – acknowledge their efforts and progress no matter how small.
- Encourage learners, especially girls to participate in demonstration activities.
- Ensure that all group members have a chance to contribute during group work

h) GESI-Responsive Language Use

- Language is a tool for communication. Inappropriate language use can transmit negative messages and inhibit learning.
- A boy or girl whose teacher constantly tells them “you are stupid”, may actually come to believe this to be true.
- A teacher's constant use of harsh, abusive and threatening language may instil fear in the students.
- Language can also reinforce gender differences and inequalities.

- Do not use negative expressions that demean, exclude, or give some learners the impression that they are not as good as others or do not need to perform as well as others.
- Do not use harsh/threatening language or actions that instil fear in learners.
- Do not say things that reinforce false assumptions about females, males, and other disadvantaged groups (e.g., girls cannot climb scaffolds, boys are not good at English/ reading, persons with disability are quick tempered).
- Do not use body language that excludes some learners or suggests one-sidedness (such as paying less attention to some students than others).
- Avoid words and pronouns that portray only men or women in specific roles e.g., avoid always using “her” to refer to caterers and “him” for electricians. Also avoid the use of “he” as a universal pronoun.
- Know the difference between “being friendly” with learners and being flirtatious (sexually playful). Teachers are required to be professional in their engagement with learners.
- Jokes and conversations should not have sexual hints, and teachers should NOT use terms like “girlfriend”, “sweetie”, “wife” to refer to learners.

i) Safe Learning Space – Prevent Bullying

- Establish clear, enforceable guidelines for how students are to interact with one another and their teacher.
- Do not permit joking, calling others names, or acting in a way that disregards their opinions.
- There should be no exceptions to the rules or favouritism of one group or set of people over another.
- Do not treat the students disrespectfully or think they are above the law.
- Challenge and correct a pupil who disparages other learners in front of the class.

- Sanction those who break the rules.
- It is important to safeguard students against external harassment and intimidation. Prevent colleagues and friends from entering the classroom to tease or harass your learners.

j) Safe Learning Space – Prevent Sexual Harassment

- Sexual harassment must be understood by the teacher and explained to the learners.
- Recognize and convey to students that a variety of behaviours, such as sexual jokes, stroking and caressing, remarks about a person's sexual life or body, requests for sexual favours, threats to withhold sexual favours, etc., are all considered sexual harassment.
- Even though men also encounter sexual harassment, women and girls are the worst victims. Similar to how student-to-teacher harassment is less frequent than teacher-to-student harassment.
- Believe sexual harassment victims when they disclose abuse and take action to investigate it or help them in filing a formal report (until an investigation demonstrates otherwise).

Gender competency checklist

Gender Responsive Competency	Specific action/strategy to assess:
1. The Teacher is gender responsive in class	<p>The Teacher:</p> <ol style="list-style-type: none"> 1) gives equal chance to females and males to ask and answer questions in class (and provides extra encouragement to girls who may lack confidence) 2) uses participatory methods such as group work, debates and role play; and ensures equal participation of females & males (giving extra encouragement where needed) 3) pays attention to the composition of females and males during group work and assigns females leadership roles 4) ensures that females have equal access to teaching and learning resources (TLMs, books, desks, etc.), particularly if males are more assertive and take resources first 5) is patient with females and males who may be shy or afraid to speak 6) checks to see if both females and males understand the lesson 7) provides constructive/positive verbal feedback to both females and males in class
2. The Teacher uses gender responsive language and interaction	<p>The Teacher:</p> <ol style="list-style-type: none"> 1) does not use negative expressions or language that demeans, excludes, or gives females the impression that are not as intelligent or do not need to perform as well as males 2) does not use harsh/threatening language or actions that instil fear in both females and males 3) does not say things that reinforce false assumptions about females and males (e.g., girls are bad at maths/science, girls are always shy, boys are the first to answer) 4) does not use body language that excludes girls or shows preferential treatment to boys (such as speaking mostly to boys or turning your back to girls) 5) sets ground rules that prohibit teasing or bullying, particularly from males towards females 6) builds students' (especially females') skills for self-confidence, speaking out and leadership 7) Knows the difference between 'being friendly' with girls and being flirtatious. Jokes and conversations <u>should not</u> have sexual undertones, and teachers should not use terms like 'girlfriend' or 'sweetie'.
3. The teacher uses gender responsive TLMs	<p>The Teacher:</p> <ol style="list-style-type: none"> 1) reviews all textbooks, pictures, posters, and materials before using them to see if they reinforce traditional gender roles (e.g., women cooking/cleaning, men in professional roles) 2) identifies traditional gender roles that appear in books/materials and makes a point to alert students to these portrayals when using the materials in class 3) discusses with students how portrayals of traditional gender roles limit what female students think they can do and achieve 4) ensures that books, materials, or equipment are equally distributed amongst females/males
4. The teacher challenges traditional gender roles	<p>The Teacher:</p> <ol style="list-style-type: none"> 1) empowers males to be critical of and challenge traditional views of masculinity (e.g. men should be 'powerful', should not be 'weak', should never cook/clean) 2) empowers females to be critical of and challenge traditional views of femininity (e.g., women should be dependent on men, should only be mothers/carers, should not be assertive) 3) actively uses examples (e.g., exercises, activities, role play, pictures) that <i>challenge or reverse</i> traditional gender roles (such as having men cook) 4) supports and encourages females to achieve in maths and science and aspire to professions traditionally taken by men (such as engineering, police, medicine)
5. The Teacher uses gender responsive lesson planning	<p>The Teacher:</p> <ol style="list-style-type: none"> 1) plans classroom seating so that males and females are mixed, and so that pupils who need more support sit at the front 2) reviews student attendance every 2-3 months (particularly for females) - if there are problems with attendance, the teacher should follow up with the head teacher and parents 3) reviews student assessments every 2-3 months - if there are large gaps between females and males, the teacher should develop strategies to close the gaps 4) plans to use teaching strategies that ensure equal participation of both females and males 5) reviews TLMs for traditional gender roles and ensures that materials are distributed and used equally between female and males 6) plans to use exercises/activities that do not reinforce traditional gender roles and in some cases, actively <i>challenges or reverses</i> traditional gender roles

Extract from *Gender Handbook for Teaching Practice Mentor* by Ghana Education Service, 2015

Universal Design for Learning (UDL)

Universal Design for Learning (UDL) is an instructional design framework that considers the wide range of variations in skills and abilities across all learners. It is an approach for achieving inclusion-responsive pedagogical practices that enable all learners to receive relevant, appropriate and targeted provision.

Why use Universal Design for Learning?

- It helps teachers anticipate and plan for *all* their learners.
- It can help teachers ensure that the greatest range of learners can access and engage in learning — not just certain learners.
- It is easy to adopt because learners do not need any special tools or technologies
- It considers the learning *environment*, e.g., barriers to learning
- It is in line with human rights.

Basic principles of Universal Design for Learning

I. **Engagement:** *Why of learning*

Learners are motivated and engaged to learn in different ways. It is important to make learning purposeful and motivating for learners

Strategies to support engagement:

- Morning meeting/Assembly
- Visual schedule
- Songs/dance
- Connecting objects to real-life experiences
- Use of manipulative materials
- Stories and drama/play and Games

II. **Representation:** *What of learning*

Information should be presented in different ways (e.g., written, visually, orally) as this creates opportunities for learners to access information differently.

Strategies to support representation:

- Small group work
- Think-pair-share
- Role play/acting out concepts and ideas
- Interacting with manipulatives

III. **Action and expression:** *How of learning*

Learners should be given the opportunity to show what they have learned in different ways.

Strategies to support action and expression:

- Writing, speaking, drawing, pointing to, or acting out the answer
- Thumbs up/Thumbs down
- Ticket out the door
- Use of positive emojis and stickers

Key ideas

- Inclusive teaching and learning are about ways lessons are designed so that all children can participate and learn.
- Areas of diversity include language, gender, socio-economic backgrounds, age, thinking styles and experiences.
- Some activities that promote inclusive education, teaching and learning include:
 - Placing learners in mainstream classes with appropriate support
 - Changes in content, teaching methods, and strategies for teaching
 - Flexibility in assessment (content, process, environment, and output)
 - Developing positive attitudes toward all learners
 - Removing all barriers to learning and participation (visual, hearing, audio-visual support, etc.)
- Universal Design for Learning (UDL) is an instructional design framework that considers the wide range of variations in skills and abilities across all learners
- The basic principles of UDL focus on the why, what, and how of learning.

Reflection

Indicate by ticking in the box, the UDL principle(s) being used in each of the scenarios below:

Scenario 1:

A learner who has challenges writing information is allowed to either use a multiple-choice test or meet with the teacher after the test and explain their answers orally.

Multiple Means of
Engagement

Multiple Means of
Representation

Multiple Means of
Action/Expression

Scenario 2:

At the end of the week, a teacher asks her learners to bring in an object from their house that starts with the letter "**b**" (the letter they have learned earlier in the week). Learners bring in different objects, including a **book, banana, bag, broom, etc.**

Multiple Means of
Engagement

Multiple Means of
Representation

Multiple Means of
Action/Expression

Scenario 3:

A teacher uses local songs related to the lesson content to help reinforce learning

Multiple Means of
Engagement

Multiple Means of
Representation

Multiple Means of
Action/Expression

Social-emotional learning (SEL)

Social-emotional learning (SEL) is the process of developing the self-awareness, self-control, and interpersonal skills that are vital for school, work, and life success. SEL describes the skills that educators do not explicitly teach.

Through SEL, teachers support learners to:

- Recognise that feelings are **valid**
- Acknowledge that emotions are **expressed and experienced differently** by different people
- Teach a **variety of ways to express feelings** that reflect the learners' community and home life

The 5 Core Areas of developing and acquiring Skills in SEL

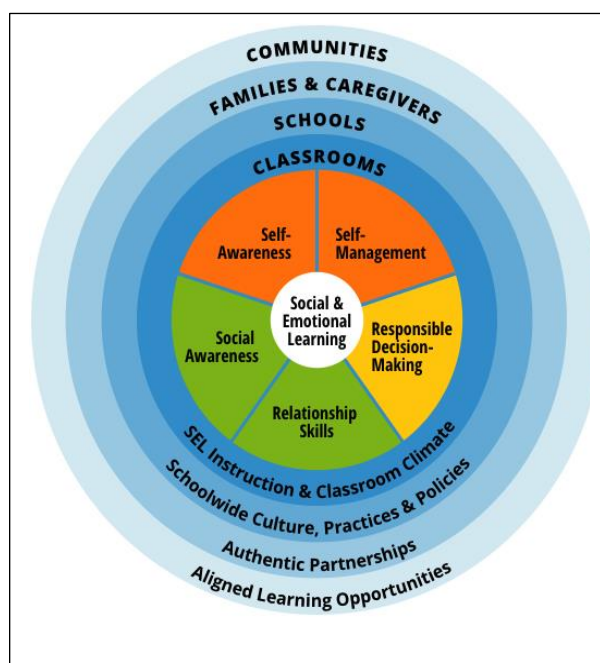
1. Self-awareness: understand one's own emotions, thoughts, and values and how they influence behavior.

2. Self-management: manage one's emotions, thoughts, and behaviors effectively in different situations and to achieve goals.

3. Social awareness: understand perspectives of and empathize with others, including those from diverse backgrounds.

4. Relationship skills: establish and maintain healthy and supportive relationships, to navigate settings with diverse groups.

5. Responsible decision-making: make caring and constructive choices about personal behavior and social interactions across diverse situations.



SEL Activities for the classroom

Activity 1 Conflict Resolution:
During a math lesson, a conflict breaks out between a group of learners. The teacher pauses the lesson and asks learners to sit in a circle and invites one learner to explain the conflict. The teacher then asks other learners to respectfully suggest some solutions of thoughts on how this could be

Self-awareness

Self-management

Social awareness

Relationship skills

Responsible decision-making

Activity 2

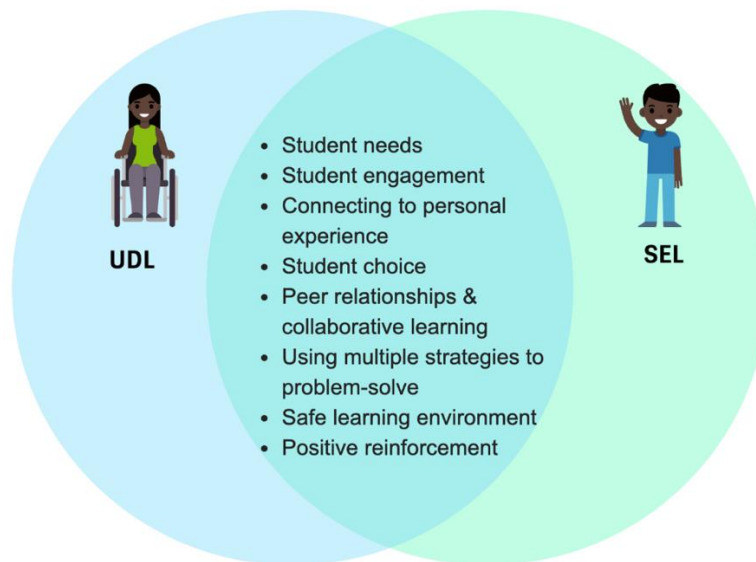
Meditation/Visualization: After the morning break, the teacher welcomes her learners back into the classroom to start their literacy lesson. She spends the first 3 minutes of the lesson inviting learners to sit quietly at their desks, close their eyes, and breath slowly in and out. She asks them to picture their favourite place and feel a sense of calm.

Self-awareness**Self-management****Social awareness****Relationship skills****Responsible decision-making****Activity 3**

Emotions: learners in a Primary 3 class have just finished reading a story about a boy called Timothy who is being bullied by older children in his community. In small groups, the teacher asks learners to identify some emotions that Timothy might have been feeling when he was being bullied. The teacher asks learners to either write the emotions, draw them, or act them out.

Self-awareness**Self-management****Social awareness****Relationship skills****Responsible decision-making**

Relationship between UDL and SEL



Discussion

- How would you help promote inclusive education, teaching and learning in your school/classroom as a teacher?
- What practices would you adopt to foster achieving both UDL and SEL in the classroom?

UNIT 2: PROFESSIONAL ATTITUDES, VALUES AND ETHICS IN TEACHING

Teachers are expected to have certain affective qualities that are manifested in their attitudes and behaviour, determined by values and ethics. In this Unit, you will learn more about what professional attitudes are, as well as the value and ethics in teaching. This unit consists of two sessions for a duration of two credit hours. The sessions are:

- i. Teacher professionalism
- ii. Nature and importance of codes of Conduct and/or Ethics in Teaching

Learning outcomes

By the end of the unit, learners should be able to:

- Explain teacher professionalism
- Discuss nature and Importance of Codes of Conduct and/or Ethics in Teaching

Session 1: Teacher Professionalism

This session introduces you to what is meant by teacher professionalism and the qualities you need to exhibit as a teacher when you get into any teaching and learning space.

To be an effective teacher, you must have adequate knowledge, skills and practices of a professional teacher.

Learning outcomes

- Describe teaching as a profession
- Identify positive behaviours which enhance the image of a teacher
- Demonstrate understanding of the National Teachers' Standard (teacher professionalism)

Teaching as a profession

Activity 1.1

Whenever the word 'Teaching' is mentioned, the teacher comes to mind. You will soon be made to teach in a school across Ghana. State exactly what you think you will be doing when you start work as a teacher in the box below:

1.
2.
3.
4.
5.
6.
7.

Teaching is more than just a job. Teaching involves so many activities. Teaching, primarily, is to help a learner acquire new knowledge and develop skills which would be useful in life. The teacher does all these, using various activities to make learners active in class as well as participate in the learning process. Apart from these, the teacher also plays other crucial roles in the school and by extension, the society. These include:

- Developing skills (soft and hard skills) in learners
- Changing society
- Influencing decision making
- Motivate learning through friendly classroom environment

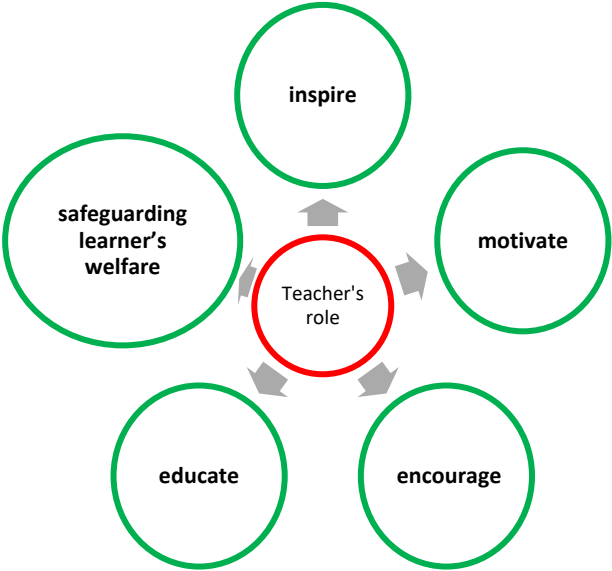


Figure 4: Some roles of a teacher

Why is teaching a profession?

Activity 1.2

After being a learner over some years, you have observed things your teachers did or have been doing. Indicate your level of agreement with the characteristics of your teacher below by checking the box.

A professional teacher has the following characteristics:	Strongly agree	Agree	Disagree	Strongly disagree
accomplishes important roles in the society				
trained over a long period of time				
specialised knowledge in a subject area				
impacts knowledge				
has professional values				

- Teaching is classified as a profession because it is a career that requires the acquisition of the skill and competence of teaching through a formal training over a long period and having a certification as a proof. For instance, in Ghana, acquiring a bachelor's degree in Education (B.Ed.) requires being in school for four years.
- People with other qualifications can still pursue further studies in Education which will make them earn other certificates such as: Diploma in Basic Education (DBE), Postgraduate Diploma in Education (PGDE).
- The long duration spent in training teachers, makes it possible to get prospective teachers to be introduced to the professional values of teaching. But having any of these certificates only makes an individual a **qualified teacher** and not a professional teacher.
- To become a professional teacher, one needs to satisfy the prerequisite qualifications and then pass a licensure examination. Three different categories of license are issued in Ghana, depending on one's qualifications. These are:
 - Provisional license
 - Temporal certificate
 - Teacher License/Full license

- Professionals are regulated by a professional body which is autonomous and ensures that members exhibit a high level of professionalism. The teaching profession in Ghana is regulated by the National Teaching Council (NTC), in collaboration with the Ghana Education Service (GES). The NTC performs other functions as well. It
 - regularly conducts teacher Licensure Examinations, issues the appropriate license and registers teachers who successfully complete any accredited teacher education programme and have satisfied the appropriate conditions.
 - revokes licenses when a teacher is involved in a case of misconduct.
 - keeps an up-to-date database of all teachers in the country.
 - develops and periodically reviews professional standards and code of ethics of teachers.
 - provides framework for Continuous Professional Development (CPD) of teachers.

In summary, Teaching is a profession because of the following reasons:

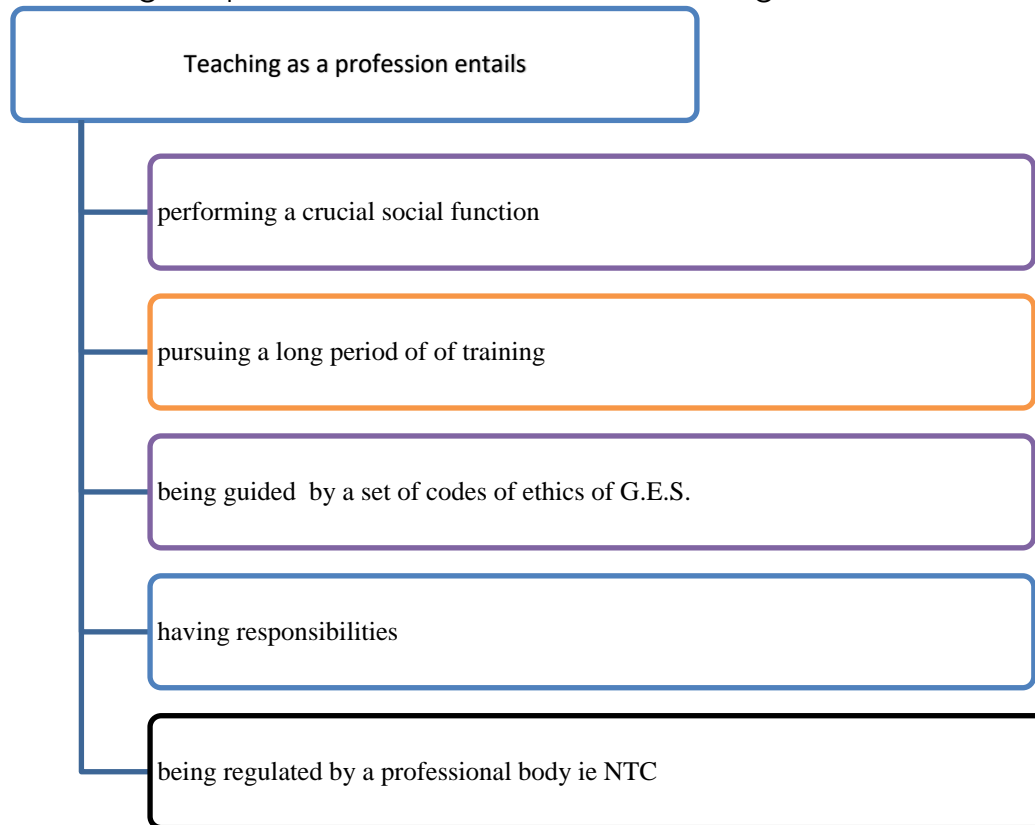


Figure 5: Some characteristics of the Teaching Profession

National Teachers' Standards

The *National Teachers' Standards*, put together by the National Teaching Council (NTC) is a professional tool to guide what teachers are expected to know and be able to do, the qualities they are expected to possess and some behaviours they are supposed to exhibit. These are:



Figure 1: Organisation of Teacher's Standards

Activity 1.3

Using the National Teachers' Standards document (which can be accessed through the link: <https://ntc.gov.gh/wp-content/uploads/2021/12/NTS.pdf>), read and match the activities to the corresponding domain

Activity	DOMAIN						
	Professional Values and Attitudes		Professional Knowledge		Professional Practice		
	Professional Development	Community of Practice	Knowledge of Educational Frameworks and Curriculum	Knowledge of Learners	Managing the Learning Environment	Teaching and Learning	Assessment
I understand the different contexts in which my learners develop and learn, and I can integrate this knowledge into my teaching/learning space.							
I create a safe space for teaching and learning.							
I know my learners look up to me as their role model. Therefore, I am careful about how I carry myself in school and the community.							
I use different ways of assessing my learners							
I make sure, I keep reading and researching in my area of specialty to be abreast with latest trends in teaching and learning.							

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Key ideas

Teachers are individuals who have undergone a formal training over a long period of time and have passed a professional examination.

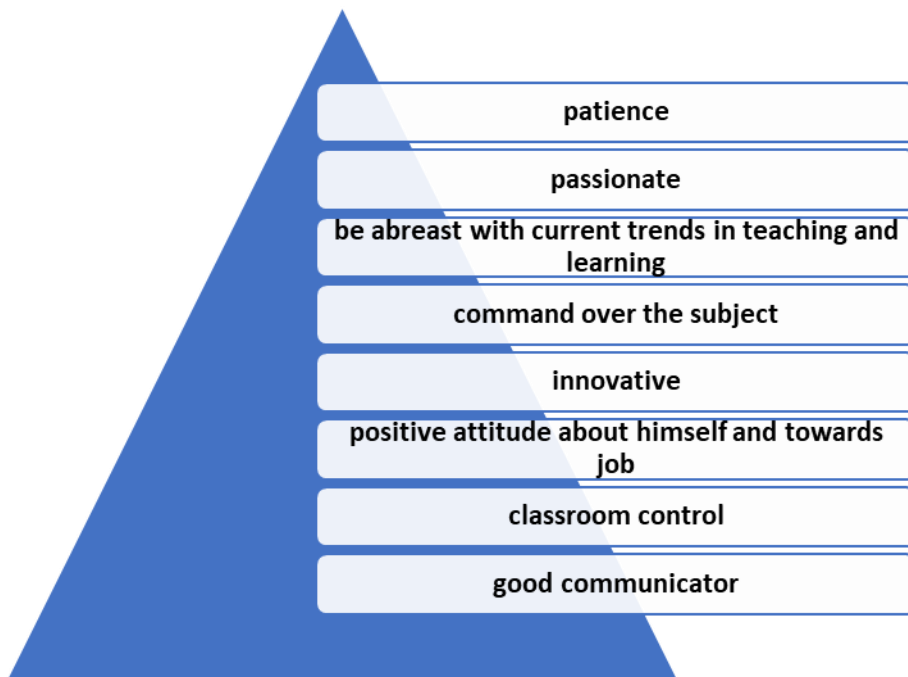


Figure 6: Characteristics of a professional *teacher*

Key ideas

- Dress code (First impression)
- Time conscious (Task on time)
- Lesson preparation
- Effective communication
- Collaboration/teamwork/leadership skills (Professional Learning Communities-PLC)
- Ready to pursue further professional development

Reflection

Activity 1.4

- **Scenario**

You have been posted to a school in a community where learners help their parents on the farm or go and sell items before arriving in school. Amenities such as electricity and pipe-borne water are absent. However, there is a Community Health Planning and Services (CHPS) compound. Some learners come to school late. Others come without food, hence go back home during the first break. These challenges prevent you from achieving the learning outcomes you set for each lesson.

- **Discussion**

- A. Will you ask for a transfer to another school?
- B. Will you punish the learner for coming to class late or for missing some lessons?
- C. Will you introduce interesting activities in the classroom which will self-motivate learners?
- D. Will you appeal to their parents to send the learners on errands only after school hours?
- E. Others (State other reasons, if any).

Summary

Teacher professionalism could be explained as the knowledge, skills, and dispositions that teachers must have to be effective educators.

Session 2: Codes of Conduct and Ethics in Teaching

As a teacher, you should adhere to a set of standards, professional ethics, and codes of conduct to ensure a better teaching and learning environment to improve learning outcomes.

Learning outcomes

- Explain Codes of Conduct
- Discuss teaching and learning ethics
- Show ethical teaching traits

Code of Conduct

A code of conduct is a set of written guidelines which details the set of recognized ethical norms (or values) and professional standards of conduct to which all members of a profession must adhere.

Code of conduct of a Ghanaian teacher

In Ghana, the GES, has a code of conduct (Code of Conduct for Staff of the Ghana Education Service) which has an objective of helping achieve high standards of competence and good behaviour within the educational sector.

Activity 2.1

Use the link below to access the code of conduct of Ghana Education Service.

<https://ges.gov.gh/wp-content/uploads/2021/08/GES-CODE-OF-CONDUCT.pdf>.

Classroom codes and conducts of a teacher

Avoid using abusive words/ inappropriate actions	
Pay attention to learners needs	
Avoid discrimination based on religion, race, sex, disability, economic background and health status	
Avoid the use of corporal punishment, or any act that inflicts physical pain on the learner	
Do not deliberately isolate or ignore the learners	
A learner should not be sent from class for absenteeism or lateness	
Avoid using your position to spread religious or political ideologies	
Avoid the collection of monies, fees or levies from learners without permission from the Director General of GES	
Cyber bullying	

Key ideas

- i. Principles and Morals of Educators
- ii. Keeping abreast with the Code of Conduct (GES)
- iii. Comprehending disciplinary procedures and actions

Activity 2.2

In the spaces below, state the importance of codes of conduct of a profession? Compare your answer with your peers.

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

Ethics in Teaching

Ethics are moral standards and practices that influence how people lead their lives, or what they ought to do, especially in terms of virtues of human rights, fairness, and obligations. Ethics illustrate what is good or bad according to the view of the society but not strictly mandated for the society to follow them. Teachers must model strong character traits, including perseverance, honesty, respect, lawfulness, fairness, patience, and unity.

Character Traits of Professional Ethics

It is important that all teachers acquire the following professional ethics before and on the job. To develop professional ethics, a teacher can do the following:

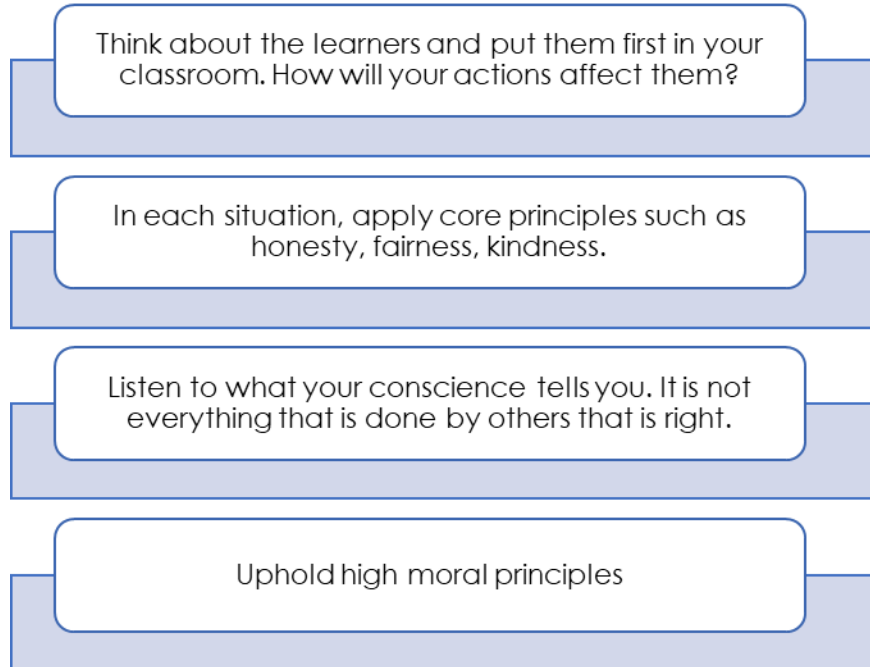


Figure 2: some tips to help develop professional ethics

Key ideas

The ability to demonstrate moral and ethical values, such as a sense of right and wrong, treating people with respect, and being objective, patient, and compassionate, will be made possible by a teacher's possession of these concepts.

Reflection

A learner in the school where you teach is a habitual latecomer, sometimes a truant, refuses to sit in your class and never turns in assignments. You also observed that, this learner often dresses improperly to class and has made you aware you had no right to sack any learner from your classroom. An attempt to do so would mean an organised gang would beat you up after school. The Head of school became interested in this case and decided to investigate the cause of this behaviour. One day, the parents of this learner were invited to meet the Head of school. The parents confirmed that, at home, the learner often exhibited signs of gross disrespect at home.

Discussion

As a teacher how will you handle this issue taking into consideration the code of conduct of GES?

Will you:

1. beat the learner?
2. sack the learner from the class?
3. refer to the disciplinary committee
4. report the learner to the police?
5. talk to the learner?
6. Others...

In groups, put down your findings on a flip chart and present to the larger group.

UNIT 3: USE OF ICTS IN EDUCATION

This unit is on the use of ICTs in Education. As a 21st century teacher, you have a lot of ICTs around you that you can use to facilitate teaching and learning. The outbreak (i.e., COVID-19) has had a major impact on how learners are taught. Online live or recorded sessions at home have taken the place of traditional classroom teaching and learning. Additionally, smart/mobile phones have replaced books. You are supposed to make good use of ICT resources in your teaching and learning experiences. This unit is put into the following sessions:

Session 1: Introduction to the use of ICTs in Education

Session 2: Using Online Applications

Session 3: Using Open Educational Resources

Session 4: Health and Safety Issues (i.e., Cyber Bullying, Health, and Plagiarism)

Each Session is broken down into subheadings. At the end of each session, there are scenarios. You are expected to spend about eight (8) hours on this unit.

Successful integration of ICTs into teaching and learning requires rethinking the role of teachers and reforming their preparation and professional development (UNESCO, 2015).

Learning outcomes

On successful completion of the unit, the participant will be able to:

- Select appropriate ICT resources
- Use online applications in teaching and learning processes
- Identify and use open educational resources pertaining to your subject area
- Explain safety and health issues in using ICTs

Session 1: Introduction to the use of ICTs in Education

This is the first session of the third unit. As national service person, you have ever used an ICT resource but not necessarily towards teaching and learning of a concept in your subject area. This session will equip you with the knowledge and skills to identify ICT resources that can be used in transmitting content in the right way. You are expected to use about two (2) hours on this session.

Learning outcomes

By the end of this session, the participant will be able to:

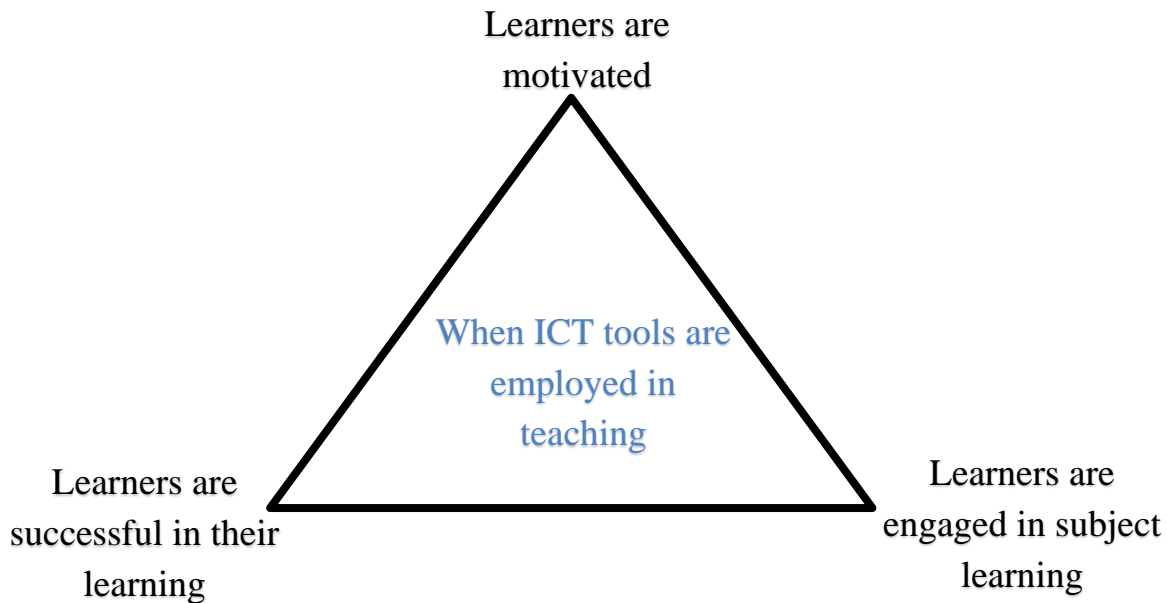
- Identify ICT resources for teaching and learning
- Develop basic PowerPoint skills in transmitting content to learners
- Use MS Excel to manage learners' assessment record

ICT tools in Education

ICT tools in education are a group of currently available technologies that enable more effective information sharing, changing how learners acquire knowledge and, in turn, how they interact with one another. ICT tools for teaching and learning include but not limited to the following: printers, desktop computers, laptops, tablets, projector, digital cameras, photocopier, pen drive, iPod, iPad, scanners, microphones, DVDs and CDs, Internet and e-mails, software (e.g., Word processors [e.g., MS Word], Spreadsheet [e.g., MS Excel], Presentation software [e.g., MS PowerPoint], etc.)

For instance, you use MS Word to prepare your lesson note(s), MS Excel to manage learners record and MS PowerPoint to present concepts to learners. In identifying and selecting ICT tools for teaching and learning, know what they are, who they can be used for, when should I use them, etc.

You are expected to cater for special needs learners when selecting an ICT tool. For instance, if you have a visually impaired learner in your class, you must make sure s/he has a bigger font size for test items.



A teacher can acquire the following skills when using ICT tools:

- Blogging: Writing about a strand in a blog frequently to educate your learners or other teachers.
- Podcasting: the practice of using the internet to make digital recordings of broadcasts available for downloading to a computer or mobile device.
- Tagging: the attaching of electronic markers to people or goods for monitoring purposes
- Bookmarking: Saving or recording the address of (a website, file, etc.) to enable quick access in future.
- Other are Uploading, Twittering, Searching, Downloading, Subscribing, Editing, and so on.

Skills in using PowerPoint in transmitting content to learners

PowerPoint is a software that uses slides to convey information rich in multimedia. PowerPoint:

- presentation can be incorporated with a variety of different kinds of multimedia aspects: images, video, audio and animations
- is neat and clean and it allows for portability of materials
- is easy for you to update, saving you time and energy.
- can be an effective tool to present material in the classroom and encourage learner learning

To refresh your mind on how to create slides open your browser, type <https://www.youtube.com/watch?v=XF34-Wu6qWU> in the address bar and watch the video on creating slides for a concept.

The following techniques can be incorporated into PowerPoint presentations to increase interactivity and engagement between learners and between learners and you. Each technique can be projected as a separate PowerPoint slide.

- **Opening Question:** project an opening question, e.g. "Take a moment to reflect on ____."
- **Think-Pair-Share** can be projected at different intervals of a presentation to allow learners to reflect on and discuss with a partner what has been presented.
 - Think of what you know about ____.
 - Turn to a partner and share your knowledge about ____.
 - Share with the class what you have discussed with your partner.
- **Focused Listing** helps with recall of pertinent information, e.g., "list as many characteristics of ____, or write down as many words related to ____ as you can think of."
- **Brainstorming** stretches the mind and promotes deep thinking and recall of prior knowledge, e.g. "What do you know about ____?"
- **Questions:** ask learners if they have any questions roughly every 15 minutes. This technique provides time for learners to reflect and is also a good time for a scheduled break or for the instructor to interact with learners.
- **Note Check:** ask learners to "take a few minutes to compare notes with a partner," or "...summarize the most important information," or "...identify and clarify any sticking points," etc.
- **The Two-Minute Paper** allows you to check the class progress, e.g., "summarize the most important points of today's lesson." Have learners submit the paper at the end of class.
- **"If You Could Ask One Last Question—What Would It Be?"** This technique allows for learners to think more deeply about the topic and apply what they have learned in a question format.

There are some keystroke shortcuts you can use while you are presenting:

- i Pressing N, Enter key, Spacebar, down arrow key or right arrow key takes you to the next slide (next animation)
- ii Pressing P, Backspace, top arrow key or left arrow key takes you to the next slide (previous animation)
- iii To go to slide "number" "press "slide number" and press the Enter key
- iv Pressing the key B gives you a black screen and pressing it again takes you back. This helps for discussion when there is nothing for learners to see on the projector screen.
- v Pressing the key W gives you a white screen and pressing it again takes you back.

Using MS Excel for learners' assessment record

Excel is a spreadsheet software used to organize data in rows and columns. When you use Excel, you would be able to: keep attendance, average grades, create a lesson-plan template and schedule, list classroom books, prepare timetable, prepare school rosters, manage learners' assessment records and more.

Things to consider when developing an assessment system for learners

Remember that an assessment for learners includes **class work, homework, project work, tests, examinations**, etc. Therefore, the teacher should consider the following before developing the assessment with Excel:

- the number of assignments taken by learners,
- total marks allocated to assignments,
- the total marks allocated to End of Term/Semester and
- the grading system

Careful planning should be the next issue. Your planning should include, the number of columns and rows, the headings for columns and rows, the numbers of columns and rows that should be merged if any, etc. Let us consider a practical activity to enable us to develop a sample assessment for a selected number of learners.

In this activity (see Table 3.1.1) you will create an Excel Worksheet to calculate learners' grades. There will be 3 class assessment test (CAT)/quiz marks and an exam. The exam counts 60% of the final mark and the quizzes 40%. The spreadsheet will calculate the weighted final mark, calculate the equivalent letter grade, and rank the learners.

1. Launch MS Excel and select Blank workbook.
2. In row 1 enter the headings as shown Table 1. In rows 2 – 6 enter data for five learners. You can use any names and any grades as long as no grade exceeds 100.

Table 3.1.1*Learners' assessment record*

	A	B	C	D	E	F	G	H	I	J	K
1	ID No.	Name	Quiz1	Quiz2	Quiz3	Quiz Average	Exam	Final Mark	Letter Grade	Position	
2	1010	Student 1	70	89	75		77				
3	1011	Student 2	88	77	85		64				
4	1012	Student 3	69	82	80		82				
5	1013	Student 4	100	70	70		39				
6	1014	Student 5	95	90	65		71				
7											
8											

3. To calculate the average of the three CATs/quizzes:
 - a. Move to cell F2. Formulas Tab→ Function Library Group→ Insert Function. Choose Average. Click OK.
 - b. Verify that the range of cells to be averaged is correct (C2:E2) and click OK.
4. To replicate the Average function for the other learners:
 - a. Drag to highlight cells F2 through F6 and choose Home Tab→ Editing Group→ Fill→ Down. You can also use the fill in handle approach.
5. Now enter a formula for the final mark, which is weighted 40% quizzes and 60% exam.
 - a. Move to cell H2 and click in the formula bar. Type: $=0.4*F2+0.6*G2$ and Enter.
 - b. Drag to highlight cells H2 through H6 and choose Home Tab→ Editing Group→ Fill→ Down. You can also use the fill in handle approach.
 - c. Format the cells to one decimal place (Right Click in Cell H2→ Format Cells...→ Number→ Number and set Decimal Places to 1)
 - d. Look at the resulting grades to verify that they make sense. If not, you probably did something wrong.
 - e. Use the fill handle to drag to fill the remaining cells to one decimal place.
6. Save what you've done so far (File Tab→ Save As→ Browse→ Documents/navigate to where you want to save) as: **Class_ExcelGradeBook**. Example, Form1_ExcelGradeBook
7. To calculate the letter grade, it depends on the grading system. Note that the number of brackets you open must be the same as number of closed brackets. In this activity, using WAEC grading system for WASSCE:
 - a. Move to cell I2.

- b. Click in the formula bar and type: =IF(H2>=75, "A1", IF(H2>=70, "B2", IF(H2>=65, "B3", IF(H2>=60, "C4", IF(H2>=55, "C5", IF(H2>=50, "C6", IF(H2>=45, "D7", IF(H2>=40, "E8", IF(H2<40, "F9")))))))) and press the Enter key.
 - c. Drag to highlight cells I2 through I6 and choose Home Tab → Editing Group → Fill → Down. You can also use the fill in handle approach.
8. To find the position of the learners:
- a. Move to cell J2. Click in the formula bar and type: =RANK(H2, H2:H6). This calculates the rank of H2 (the first learner's final mark) in the range H2:H6 (all learners). Press Enter.
 - b. Drag to highlight cells J2 through J6 and choose Home Tab → Editing Group → Fill → Down.
 - c. Do the resulting positions make sense? No, something is wrong! What? Examine the formula for J3. The range in the formula should have stayed as an *absolute* range J2:J6 but it changed *relative* to the row. That's what normally happens when you use Fill.
 - d. Let's fix the problem. Excel uses the \$ symbol to indicate an *absolute* reference to a cell or a range of cells. Change the formula in cell J2 to: =RANK(H2,\$H\$2:\$H\$6). Then drag to highlight cells J2 through J6 and choose Home Tab → Editing Group → Fill → Down.
9. Save your work again (File Tab → Save).

Key ideas

- ICT tools in education include computer hardware and software
- MS Excel uses rows and columns to manipulate data and keep records
- PowerPoint is a software that uses slide to present concept(s) to learners

Reflections

Scenario

A teacher has conducted 4 continuous assessment tests in a semester/term and an end-of-semester/term examination. The head of the school wants teachers to use a software to process the assessment records.

Discussion

1. Can you think of using excel in this scenario?
2. Discuss how you would process the assessment record of the learners.

Session 2: Using Online Applications in Education

This session is on online applications that can be used in facilitating teaching and learning. During a pandemic (e.g., COVID-19), online applications could be used to facilitate teaching and learning. Participants are expected to use about two (2) hours on this session.

Learning outcomes

At the end of this session, the participant will be able to:

- Select Online Applications for teaching and learning in your subject area
- use the internet in looking for resources in your subject area

Online applications in education

Online applications (web applications) are programs/software that run online or on a website, much like the ones you would use on your PC, like MS Word, MS Excel, MS PowerPoint, etc. Online applications:

- allow you to work with other users (e.g., your colleagues, your learners) on the same version of an application.
- do not need to be installed on your PC.
- can be accessed through various platforms such as a desktop, laptop, or mobile.
- can be accessed through multiple browsers.
- etc.

There are a lot of online applications that can be selected for teaching and learning. Some of them include:

- Zoom
- Google Meet
- Google Classroom
- Google Drive
- YouTube
- iBox, etc.

For instance, Google Drive is a great example of an online application. Users of Gmail can now create, edit, and share documents directly from their browsers. The fact that it automatically saves means that if your computer fails or your laptop is stolen, all your Google Drive documents will still be there, exactly as you left them when you last updated them. As a teacher, you can put all your files (e.g., lesson plans, learners' records, images, etc.) on your Google Drive for future retrieval. You and your colleague(s) can be working on the same file at the same time at different locations on Google Drive.

Using YouTube can be great if you take into consideration the age of your learners. For instance, if the content you are looking for is for young learners, you should go for YouTube Kids. Any content you have downloaded from YouTube needs to be edited before you use it. For the listed online applications, you can watch videos on how to use them for educational purposes.

As a teacher, some things you must know before choosing an Online Application for teaching and learning are:

- make sure your connection is not broken and that you have a backup plan in place in case of an unexpected accident.
- discover all there is to know about the application, check out the ratings, and read reviews. Make sure it is safe.
- be careful to read the terms and conditions and privacy policy before clicking the "I accept" button.
- make a detailed search on the online application before using it in your subject area.

Using the internet to look for resources

Examine the website's aim before relying on the material it provides for teaching and learning. Websites can be created for a variety of purposes: to disseminate information, provide access to collections, support teaching, sell products, persuade, etc. Discovering the purpose can help you to determine the reliability of the site and the information it provides.

To look for materials that can help you in your teaching, you need search engines (see Figure 3.2.1)

Figure 7

Some examples of search engines



The most popular search engine is Google. It has a simple search box on a white background. It also has sections where you can search specifically for images, news, or videos. To search using Google:

1. open your browser and type www.google.com in the address bar

2. there will be a search box on the page. Type in what you are searching for, then hit the “Enter” key or click on the “Google Search” button.
3. Google will look for websites containing the keywords you searched for and bring up a list of search results for you. The most relevant results will be at the top.
4. if you see the information or website, you are after, click on it and you will be taken to that site.
5. if you don't see the results you want, try searching again using slightly different keywords.

Note: You can narrow your search by putting the words/keywords in double quotes (e.g., “music in Ghana”).

The way you use Google search engine to look for resources is the same way you use the other search engines.

Key ideas

- Online Applications are software that run on the internet
- You have quick access to a vast amount of information thanks to search engines.
- You can always discover the answers you need by using a search engine

Four (4) recommendations for using search engines:

1. Make your keywords as relevant as possible to what you are searching for
2. Use two or more keywords in your search
3. Make sure the keywords are spelled correctly.
4. If you do not find what you are looking for, try using different keywords or using a different search engine.

Reflection

Scenario

A teacher has been posted to a school where there is internet connectivity. One day, the teacher decided to look for information on a concept using a search engine. After searching for the concept using a search engine, the display was no “Your search yielded no results”.

Discussion

1. What went wrong during the search?
2. What should have been done to forestall such a situation?

Session 3: Using Open Educational Resources

The purpose of this session is to get you involved in the adoption and use of open educational resources (OERs). We will introduce you to the concept of OER and the benefits and challenges of using them. You are expected to use about two (2) hours on this session.

Learning outcomes

By the end of this session, the participant will be able to:

- Identify benefits of using OERs
- List 3 key considerations to keep in mind before adopting an OER.

What is an OER?

Open Educational Resources (OER) are openly licensed, freely available educational materials that can be modified and redistributed by users. They can include any type of educational resource, from syllabi to full courses. The following terms are explained:

- *Openly-licensed*: You can read about this more in the [Copyright & Licensing \(https://iastate.pressbooks.pub/oerstarterkit/chapter/copyright/\)](https://iastate.pressbooks.pub/oerstarterkit/chapter/copyright/)
- *Freely Available*: The resources must be freely available online with no fee to access. Physical OER may be sold at a low cost to facilitate printing.
- *Modifiable*: The resource must be made available under an open license that allows for editing. Ideally, it should also be available in an editable format.

The most comprehensive definition of OER available today is provided by the Hewlett Foundation:

“Open Educational Resources are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.”

With a definition so broad that it includes any educational material so long as it is free to access and open, it might be easier to ask, “What is not an OER?”

What is not an OER?

If a resource is not free or openly licensed, it cannot be described as an OER. For example, most materials accessed through library’s subscriptions cannot be altered, remixed, or redistributed. These materials require special permission to use and therefore cannot be considered “open.”

Benefits of using OER

There are a lot of benefits that can be derived from the use of OERs. Let us look at two (2) most important benefits.

Benefits for Learners

When learners have access to OERs, they can learn at their own pace. OERs also save learners from buying books. The cost of textbooks might not be a major issue on its own, but it can be a huge task for learners already struggling.

Benefits for teachers

Although cost savings are a major talking point in favour of adopting open educational resources, teachers can utilize OER effectively without replacing paid resources at all. In fact, the freedom to adapt OER to instructional needs is often the most attractive aspect of OER. Since OER are openly licensed, teachers are free to edit, reorder, and remix OER materials in many ways.

Things to consider before adopting an OER

You have to be careful in using an OER for your subject. Keep in mind the following before adopting an OER:

1. What do I want my learners to learn?
2. How will I communicate to learners that the concepts I present are valuable?
3. How will I assess my learners' understanding of core concepts?
4. What changes would I need to make to share my own content as an OER?
5. What types and formats of OER am I looking for?
6. Where should I begin my search?
7. How does the content align with my learning objectives?
8. Are there any factual, grammatical, or typographical errors?
9. Are learners able to access the materials in a quick, non-restrictive manner?

Also, is the:

1. Content, including exercises, clear and comprehensible to learners?
2. Content consistent with its language and formatting? (e.g., key terms are bold)
3. Content well-organized in terms of sequencing and flow?
4. Content accurate based on your expertise?
5. Interface navigable for learners?
6. Resource in a file format which allows for adaptations, modifications, rearrangements, and updates?
7. Resource easily divided into modules, or sections, which can be used or rearranged out of their original order?
8. Content available under a license which allows for modifications?

- Content presented at a reading level appropriate for my learners.
9. Content level appropriate for use in my subject?

Searching for an OER

When starting your search for an OER, it is best to begin in a place with a wide variety of options. The websites listed below each have a different focus, but they are good places to start if you are not sure what to look for.

- [The Open Textbook Library \(https://open.umn.edu/opentextbooks\)](https://open.umn.edu/opentextbooks) is a great resource for finding open textbooks. If you want a textbook and nothing more, this is the place to start.
- [BCCampus Open Textbooks \(https://open.bccampus.ca/browse-our-collection/\)](https://open.bccampus.ca/browse-our-collection/) collects resources created, reviewed, or adopted by teachers. Materials can be filtered by Accessibility as well as whether they have been adopted by BCCampus subjects, include ancillary materials, or have been reviewed.
- [SUNY's Openly Available Sources Integrated Search \(OASIS\) \(https://oasis.geneseo.edu/\)](https://oasis.geneseo.edu/) : OASIS is a search tool that aims to make the discovery of open content easier by searching multiple sources for OER and other open content at once. OASIS currently searches for open content from 79 different sources and contains approximately 330,000 records.
- [George Mason OER Metafinder \(https://oer.deepwebaccess.com/oer/desktop/en/search.html\)](https://oer.deepwebaccess.com/oer/desktop/en/search.html): The Mason OER Meta finder (MOM) links to a wide array of open content, including open access books and articles, documents in the public domain, and OER. Because of its large breadth of resources, it is recommended that you start your MOM search with only a selection of the “OER-specific sites” checked, rather than all the materials it can include.

Some open educational resources are shared through subject-specific repositories. A few notable examples of this type, including open publishers that specialize in one discipline, are listed below:

- Chemistry (<https://chemcollective.org/home>)
- Chemical Engineering (<https://learncheme.com/>)
- Psychology (<https://nobaproject.com/browse-content>)
- Languages (<http://coerll.utexas.edu/coerll/materials>)
- Geography (<https://www.opengeography.org/>)
- Engineering, Physics (<https://engineertech.org/>)
- Physics, Physical science, Geology, Chemistry, etc. (<https://phet.colorado.edu/>)
- Career & Technical Education (CTE) (<https://www.skillscommons.org/>)

- *computer Science, Programming* (Bayes, Python, MATLAB, Java, etc. (<https://greenteapress.com/wp/>))

Key ideas

- **Expanded access to learning.** Learners anywhere in the world can access OERs at any time, and they can access the material repeatedly.
- **Scalability.** OERs are easy to distribute widely with little or no cost.
- **Augmentation of class materials.** OERs can supplement textbooks and lectures where deficiencies in information are evident.
- **Enhancement of regular course content.** For example, multimedia materials such as videos can accompany text. Presenting information in multiple formats may help learners to more easily learn the material being taught.
- **Quick circulation.** Information may be disseminated rapidly (especially when compared to information published in textbooks or journals, which may take months or even years to become available). Quick availability of material may increase the timeliness and/or relevance of the material being presented.
- **Continually improved resources.** Unlike textbooks and other static sources of information, OERs can be improved quickly through direct editing by users or through solicitation and incorporation of user feedback. Teachers can take an existing OER, adapt it for a class, and make the modified OER available for others to use.

Reflection

A teacher has been posted to a school where there is the need to look for an OER for his/her subject. The teacher was disturbed and forgot to even search for the meaning of OER and how to look for one for his/her subject.

Discussion

1. How would you describe OER to the teacher?
2. Describe the way you would help the teacher to look for an OER for his/her subject.

Session 4: Health and Safety Issues (i.e., Cyber Bullying, Health, and Plagiarism)

This is the fourth and final session of this unit. ICT as a tool for teaching and learning, has some health and safety issues. This session seeks to highlight some of the key areas you need to pay attention to as you use ICT in your teaching and the possible preventive measures to adopt.

Learning outcomes

By the end of this session, the participant will be able to:

- Identify what constitutes Cyber Bullying
- Explain the major health and safety issues associated with ICT usage
- Explain plagiarism

What constitutes Cyberbullying?

Cyberbullying has been defined simply as the use of digital technologies to harass/hound/intimidate/oppress an individual (UNICEF, 2022). This is often done calculatedly and persistently on social media, instant messaging, gaming platforms, etc. with the aim of roughing victims up to put fear in them and possibly shut them down. Cyberbullying, according to experts, may affect victims mentally, emotionally, physically, or psychologically (UNICEF, 2022).

As a teacher, you are expected to be decorous in your social media engagements with your learners. Some notable examples of cyberbullying that you must be aware of as a teacher include but not limited to:

- spreading lies about or posting embarrassing photos of someone on social media
- sending hurtful messages or threats via messaging platforms
- impersonating someone and sending mean messages to others on their behalf
- sending unsolicited images or videos, etc.

Preventing cyberbullying

There are several ways by which you can prevent cyberbullying as a teacher. Some of these are:

- seeking help from someone you can trust
- seeking help online
- using some Apps that can **restrict** or **report** cyberbullies

Some applications that have features to restrict or report cyberbullying include:

[Facebook](#), [Instagram](#), [Kik](#), [Snapchat](#), [Tumblr](#),
[Twitter](#), [WeChat](#), [WhatsApp](#), [YouTube](#)

Source: <https://www.unicef.org/turkiye/en/cyberbullying-what-it-and-how-stop-it>

Major health and safety issues associated with ICT usage

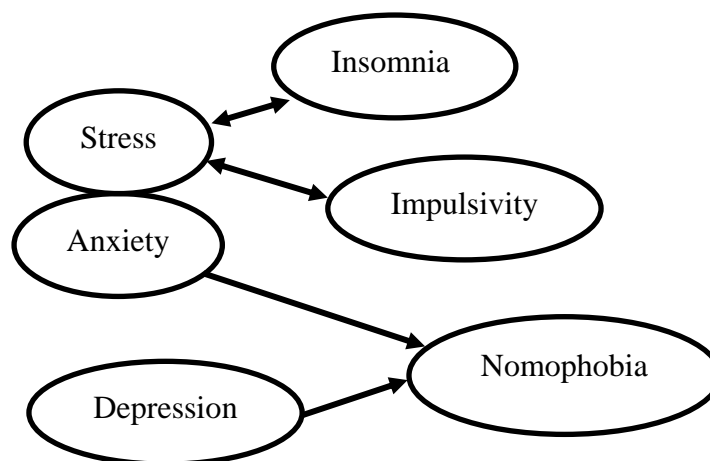
Health and safety issues associated with ICT usage can be described as the negative effects and the ills which come with the use of ICTs. Some of the Health and safety issues are as follows:

- *Sight problems*: long hours of staring at the computer or phone screens can cause blurry vision
- *Back ache*: pains in the back due to long hours of sitting, wrong sitting posture, use of bad chairs, etc.
- *Addiction*: Internet or computer addiction is the excessive use of the internet or computer
- *Nomophobia*: The word Nomophobia is said to be a combination of four words “**No+mobile+phone+phobia**” (Kumar et al., 2021). Nomophobia is used to describe the anxiety caused by the loss or lack of access to mobile phones.

Nomophobia is eating into the usage of mobile phones and as a teacher, you have to be aware of the health problems (see Figure 1) associated with nomophobia

Figure 8

Health Problems associated with Nomophobia



As a teacher, when you are using ICTs to facilitate teaching and learning processes, you should be mindful of the health implications.

Prevention of health and safety issues in using ICTs

There are ways you can prevent for instance sight problems, backache, and nomophobia.

Sight problems prevention

- Screen filters can remove a high percentage of the harmful rays emitted from a computer screen.
- Regular breaks must be taken to rest the eyes from the harmful rays emitted from the computer screen.
- The working space must be suitably lit and windows must have blinds to reduce glare that emanate from outside.

Back ache prevention

- A fully adjustable chair should avoid poor posture
- Footrests can reduce these problems
- Screens should tilt and turn to a position that avoids awkward movements

Nomophobia prevention

- Education
- Self-control
- Parental control (in the case of adolescents)

What constitutes plagiarism?

The teacher may not know everything. In your quest to facilitate the acquisition of knowledge you may need to copy and share other people's work or ideas - words, images, music, videos, - which are vital to topics or subjects being treated with your learners. Always remember to duly acknowledge the source of these works or ideas or thoughts which are not your own. The following are some of the practices that constitute plagiarism:

- **Verbatim (word for word) quotation without clear acknowledgement:** When ideas or words of others are lifted from source "**word for word**", it must be clearly set apart with quotation marks (" ") and clearly cited.
- **Cutting and pasting from the Internet without clear acknowledgement:** Any data, diagrams, chats, works, etc., copied from the internet must be properly referenced
- **Paraphrasing:** When other people's thoughts, ideas or works are paraphrased, they must be duly acknowledged
- **Collusion:** Works, thoughts, ideas, etc., which are done in collaboration with others are supposed to be acknowledged accordingly
- **Inaccurate citation:** Referencing must be done correctly.
- **Failure to acknowledge assistance:** Any help received from colleagues, learners, laboratory technicians, and other external sources other than tutors or supervisors must be duly acknowledged

- **Use of material written by professional agencies or other persons:** Works or thoughts which are produced by someone for you must be properly referenced or acknowledged

Avoiding plagiarism

It is important for the teacher to enhance teaching and learning with the use of all available learning resources or materials without committing plagiarism. The following are some available online resources/links that can be used in checking plagiarism:

- https://academics.adelphi.edu/files/2015/05/prevent_plagiarism.pdf
- <https://cmsw.mit.edu/writing-and-communication-center/resources/teachers/prevent-plagiarism/>
- <https://libraries.wsu.edu/library-instruction/plagiarism>
- <https://www.plagscan.com/en/>
- <https://www.readwritethink.org/>

Key ideas

- Cyberbullying is unacceptable way of using digital technologies
- Internet usage can be addictive, so steps need to be taken to avoid internet addiction
- Nomophobia (**No+Mobile+Phone+Phobia**) is an emerging health concern

Reflections

Scenario 1

A parent approaches you with the complaint that his/her child is constantly on the smartphone even when s/he is supposed to be learning, doing homework, or sleeping, under the guise that the phone is being used for research on assignment from school. The parent suspects that the child is becoming addicted to the use of the internet and social media because of the time spent on the phone. How will you address this?

Discussion

1. *Would you suggest to the parent that the child is showing signs of nomophobia?*
2. *Would you tell the parent to give you some time to check with other teachers to verify the child's claim while encouraging the parent to make further observations to enable you to make an informed judgement?*
3. *Would you suggest to the parent that the child is showing signs of addiction to the internet and social media?*
4. *Others*

Scenario 2

Your learner walks to you with tears welling in their eyes and shows you disturbing images and uncomplimentary words from classmates on their group WhatsApp platform suggesting that the learner is weak and not smart. The learner goes further to say that the classmates have been doing this often.

Discussion

- 1. Would you see it as a joke and just brush it aside?*
- 2. Would you console the learner and tell them to ignore their colleagues because it is just a joke?*
- 3. Would you commend the learner for informing you and console him/her and take no action?*
- 4. Would you educate the class about cyberbullying and its effects with direction to further readings and help links on the internet?*
- 5. Others?*

UNIT 4: ASSESSMENT PRACTICES IN SCHOOLS

This unit focuses on the key ideas, principles, and practices regarding assessment in schools. It explains the principles of assessment which must be translated into practice in our classrooms to ensure that assessments are fit for purpose, meaningful and intended to support learner learning and attainment. Assessment is one of the most important features in education and if not done well can lead to low achievement rates at the school level and attainment of needed qualifications to progress to the next stages of learning.

The Unit is organised into four main sessions as follows:

- The Nature, Principles and Qualities of Assessments
- Purpose of Assessment
- Forms of assessments in schools
- Test design, Administering, Scoring and Giving Feedback

The unit covers general assessment practices which can be applied at any pre-tertiary level

Content Learning Outcomes

- Describe the nature of assessment and apply the principles of assessment in designing assessment tools/tasks
- Select appropriate assessment tools/formats for different forms of assessment based on the purpose of assessment.
- Evaluate the extent to which an assessment tool meets the qualities of good assessments
- Write, score, and critique test items that match given learning outcomes and give effective feedback

Session 1: Nature, Principles, and Qualities of Assessment

This session explains what we mean by assessment and the principles which guide good assessment practices. It is important that teachers and learners understand how the assessment process works and understand why assessment must provide meaningful data and information for improving learner outcomes

Learning outcomes

By the end of this session, the participant will be able to:

- Describe the nature of the assessment
- Apply the principles of assessment in designing assessment tools
- Determine the quality of assessment results.

What is Assessment?

Assessment is the process of obtaining information that is used for making decisions about learners, curricula, programs, and educational policy in the school environment. It includes the full range of procedures used to gain information about learner learning.

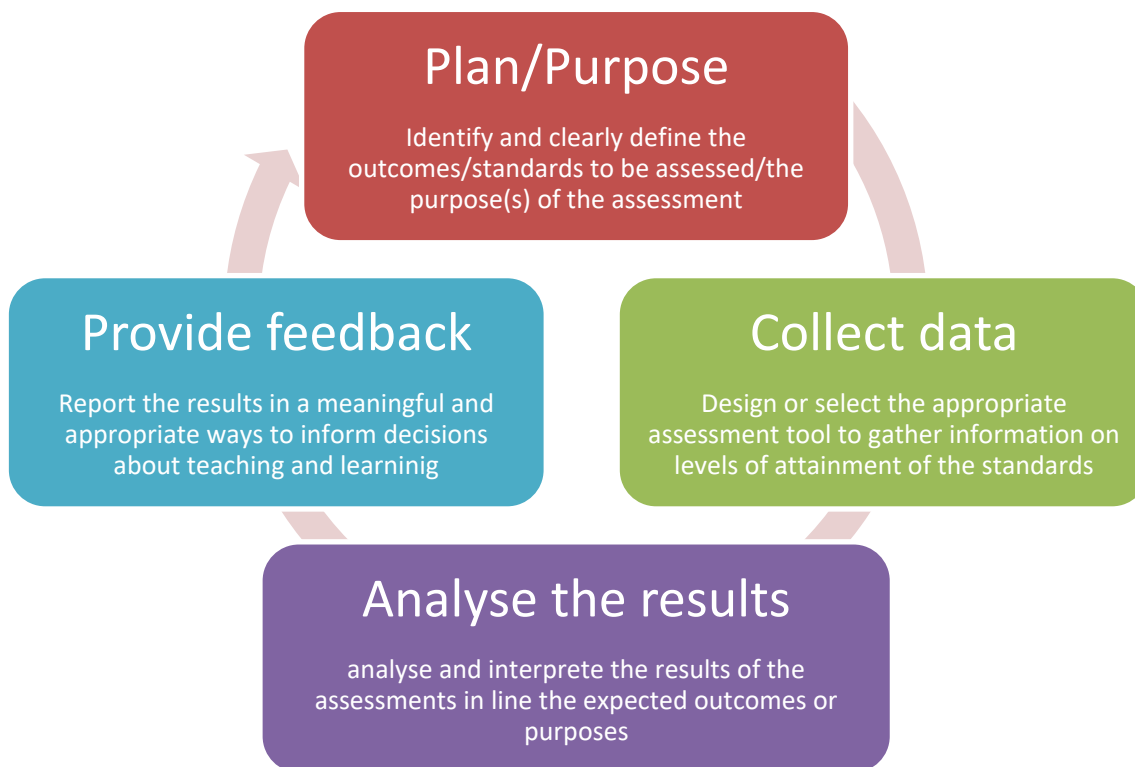


Figure 8: The Assessment Process

The Classroom Assessment Process

Assessment involves learners, teachers, the school, parents, and the managers of the curriculum such as GES, NACCA, and WAEC. This is because the data collected whether formal or informal must be used either by the learner or teacher to determine the learning progression of the learner. Schools use this data in line with School-Based Assessment requirements and the feedback is given to learners and parents. The school must be able to meet national requirements for assessment.

Essentially, assessment is an ongoing process which uses a wide range of tools and instruments to gather information about a learner and evaluate that information.

Measurement, Assessment and Evaluation

Evaluating learner learning or performance involves some sort of measurement using a range of assessment types which can be evaluated.

To explain this even further, think back to your own experiences as a learner. A teacher wants to check how well learners who have been taught antonyms and synonyms have gained the needed knowledge and understanding. The teacher:

1. decides to test learners, using a series of worksheets over a period
2. assesses their need for reteaching or advancing to new learning based on the reliable test results
3. evaluates the effectiveness of the lessons by determining the degree to which learners can demonstrate knowledge and understanding in new contexts.

This means that we should be careful about how we assign numbers/ values scores to the data we gather from our learners. To be able to assign these scores appropriately, we need to know the nature (scales) of the data, thus scales of measurement.

Relationship among Measurement, Assessment, and Evaluation

Measurement	Assessment	Evaluation
Collect numerical data Percentage, standards Goal: valid, reliable results	Collecting data Constant process Formative/summative Ends with evaluation	Using data collected from assessment to Maintain, reform, or dismiss Connects educational goals and goals achieved
Example		
A learner got 25 out of 30	The learner's grade is fair	The learner needs to focus on X and Y parts of the educational objectives, the teacher needs to work more on or develop the Z part of the teaching objective.

Principles of Assessment

Principles of assessment serve as guidelines to ensure that a test is useful, appropriate, effective, and credible. Since assessment is a crucial and integral part of learning and teaching, it is important that these general principles serve as guidance in determining the level of accomplishments of learners during the learning process and at the end of the learning. These principles, therefore, reinforce what we think is important in creation, selection, administering, measuring, assessing, and evaluation. The principles of assessment must therefore translate into our classroom practices. These principles include:

1. Principle 1 - Assessment should be valid
 - Validity ensures that assessment tasks and associated criteria effectively measure learner attainment of the intended learning outcomes at the appropriate level.
2. Principle 2 - Assessment should be reliable and consistent
 - There is a need for assessments to be reliable and this requires clear and consistent processes for the setting, marking, grading, and moderation of assignments.
3. Principle 3 - Information about assessment should be explicit, accessible and transparent.
 - Clear, accurate, consistent, and timely information on assessment tasks and procedures should be made available to learners, staff, and other external assessors or examiners.
4. Principle 4 - Assessment should be inclusive and equitable

- As far as is possible without compromising academic standards, inclusive and
 - equitable assessment should ensure that tasks and procedures do not disadvantage any group or individual.
5. Principle 5 - Assessment should be an integral part of programme design and should relate directly to the programme aims and learning outcomes.
 - Assessment tasks should primarily reflect the nature of the discipline or subject but should also ensure that learners can develop a range of generic skills and capabilities.
 6. Principle 6 - The amount of assessed work should be manageable
 - The scheduling of assignments and the amount of assessed work required should provide a reliable and valid profile of achievement without overloading staff or learners.
 7. Principle 7 – Assessment must incorporate technology and use multiple tasks and methods.
 - That is, formative and summative assessments should be included in the assessment procedure to ensure that the purposes of assessment are adequately addressed. Assessment must also use technology.
 8. Principle 8 - Timely feedback that promotes learning and facilitates improvement should be an integral part of the assessment process
 - Learners are entitled to feedback on submitted formative assessment tasks, and on summative tasks, where appropriate. The nature, extent, and timing of feedback for each assessment task should be made clear to learners in advance.
 9. Principle 9 - Staff development policy and strategy should include assessment
 - All those involved in the assessment of learners must be competent to undertake their roles and responsibilities.

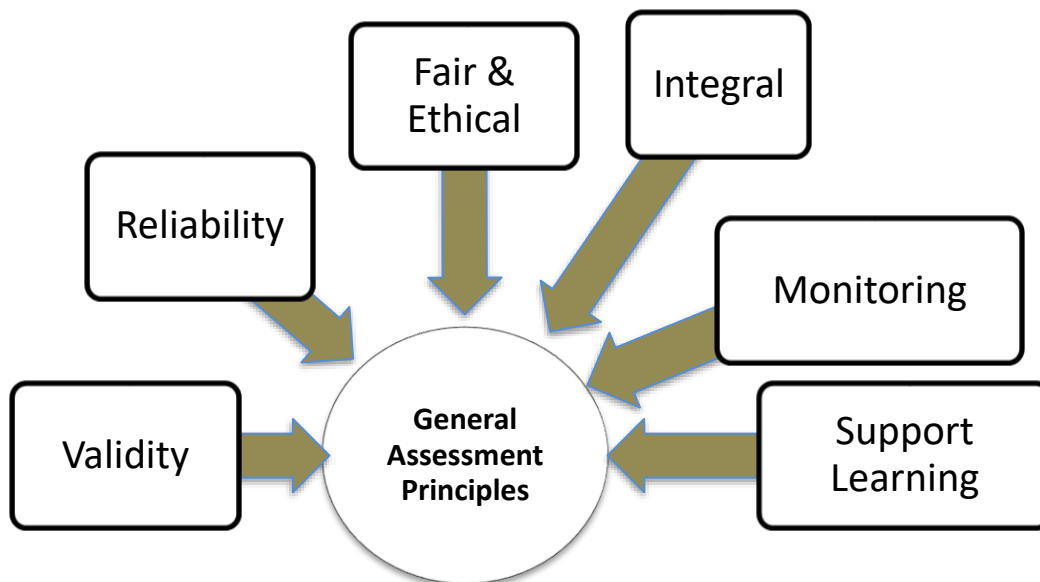


Figure 9: General Assessment Principles

Qualities of Assessment Results

An assessment is a process through which learners can share their educational experiences. For a test to be a good tool for measuring learners' knowledge and skills, it should have the following characteristics that are essential for the success of any test.

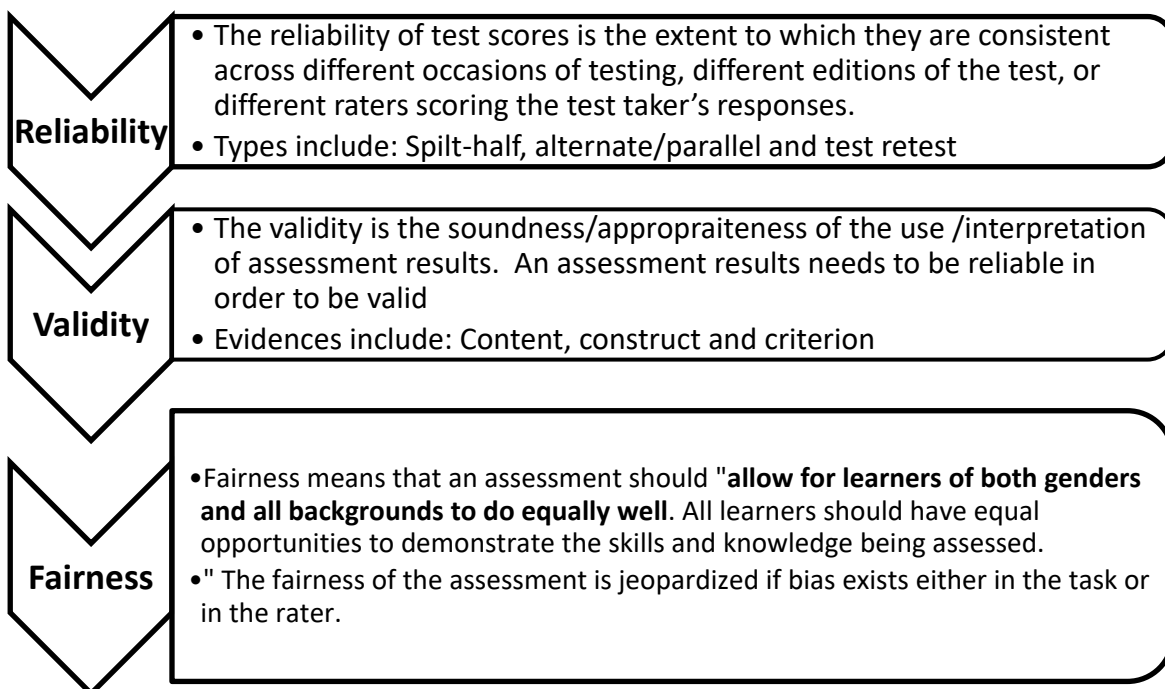


Figure 1.3: Qualities of Assessment Results

How to establish test quality in teaching and learning

1. For all assessments: To achieve test quality in terms of consistency within each learner (not that they always do the same, but that they consistently try to show what they know), validity, and fairness, the teacher should:

- Encourage learners to perform their best
- Match the assessment difficulty to the learners' ability levels
- Have scoring criteria that are available and well understood by learners before they start the assessment

2. For objective assessments like multiple-choice tests: For consistent performance from item to item, the teacher should:

- Have enough items
- Allow enough time for learners to complete the test

3. For papers, essays, and projects: For accuracy of rater (examiner) judgment and consistency across forms (prompts or assignments), the teacher should:

- Have clear enough directions for learners that all are likely to produce work you can score
- Have a systematic scoring procedure
- Have multiple markers (scorers) when possible

Take Note:

Remember as educators, part of our job is to assess what our learners know and don't know (so that we can help them learn the things that they don't know). We can't really know our learners if we don't assess them through reliable procedures or instruments. So, teachers, how reliable and valid are the inferences you're making about your learners based on the scores from your classroom assessment?

Key Ideas in Session One

- Assessment is the systematic basis for making inferences about the learning and development of learners.
- Principles and Qualities of Assessment results include:
 - Reliability: Consistency of test results
 - Validity: Accuracy of use and interpretation of test results
 - Fairness: The consideration of learner's needs and characteristics, and any reasonable adjustments that need to be applied to take account of them.

Reflection

<ol style="list-style-type: none"> i. In which ways has your learning of assessment connected with what you already know ii. In which ways have your knowledge and understanding of assessment been broadened or extended? iii. What challenges or questions do you have based on the ideas and information presented?

Discussion

1. What is the difference between assessment and evaluation?

Scenario 1 Scenario			
Discuss the following scenarios by identifying the Measurements (M), Assessment (A), and Evaluation (E) tasks.			
Scenarios	M	E	A
1. A teacher says one of the learner's heights is 180cm and asks her to sit at the back			
2. A teacher reported that a learner's achievement in Economics is 50% and therefore a learner's achievement in 'Economics is satisfactory.			
3. A learner told her friend that the size of a classroom is 4mx3m and she reported that the classroom is too small for 40 learners.			
4. One of the learners in the class is 4 years old			

<p>5. Two learners study in the same class, in the first test they obtain 50 and 70 marks respectively in English in the second test both obtain 80 marks. Now in the second test scores, achievement in English is the same yet the teacher stated that the rate of progress of one of the learners is comparatively better than that of all.</p>			
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Reflection

Reflection: Review the following scenarios and respond appropriately either through discussions or by reflecting on your individual response. For each scenario think about how the principles of assessment can be applied or are reflected in the assessment practice:

1. A teacher in a school conducts a Shakespeare play in a classroom of 49 learners with low proficiency under 15 minutes of preparation time.
2. Learners are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills.
3. Learners are given multiple essay sets. Assessors grade the first essay on each learner's paper before grading the second essay. This allows the evaluator to apply the same set of criteria at a time. Which principle suits the situation?
4. A teacher was teaching a class of mixed abilities. She prepared her materials by adapting it to suit the different levels of the ability of her learners.
5. A teacher conducted a jigsaw-ready session that allows all learners to participate and contribute. Choose the right principle that agrees with the statement.

Session 2: Purpose of Assessment

This session uses the understandings gained from Session 1 as building blocks to translate the principles into practice by exploring the why of assessment. It is important that teachers understand why we assess learners and who the key stakeholders are. This will inherently inform assessment practices by ensuring that the assessment principles are actual living documents.

Learning outcome

By the end of this session, the participant will be able to:

- Explain the purposes of assessment in terms of assessment of, as, and for learning
- Differentiate among the three purposes of assessment

The Why? and the Who? of Assessment

When participating in any learning experience it is important to know how they are progressing during the learning experience and to also determine what they can do with their knowledge, understanding, and skills. It is also important especially these days to determine what *soft skills* or *dispositions* they have also developed over time. This presupposed that the learning outcomes are clear and have also been communicated to the learners. The data/ information from the measurements, assessments and evaluation are ultimately necessary and useful for a few reasons some of which are:

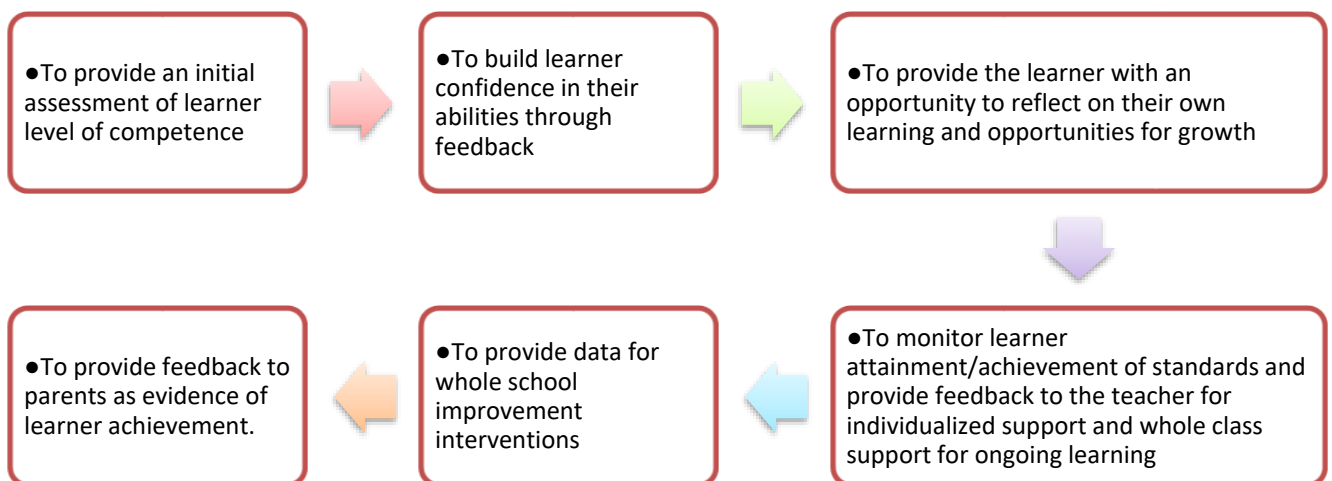
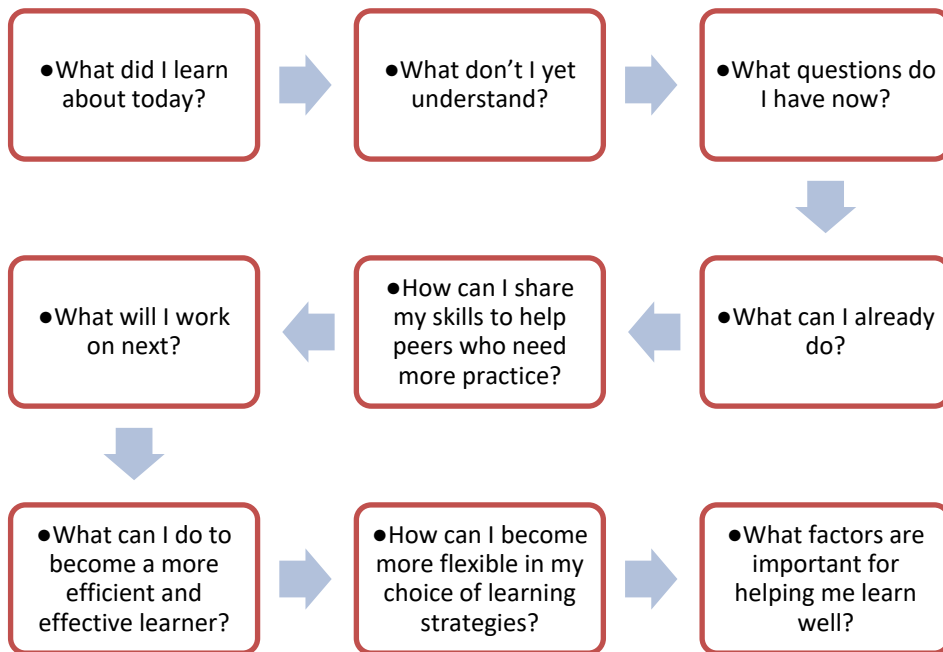


Figure 9: Reasons of Assessment data

Why is the assessment being conducted?

When you give **learners** the opportunity to be actively involved in assessing their own learning then they are using assessment as learning. **Assessment as learning gives learners the chance to self-assess, think, and develop their affective skills, and monitor their own progress.** Learners can answer questions like



This type of assessment is **formative** as it is intended to help the learner determine their strengths and areas for improvement through feedback from peers or their teacher.

Who will be assessed?

- i. All Learners
- ii. Individual learners e.g., a learner who is receiving remedial support
- iii. Groups of learners e.g., learners who have a special need, need remediation

What will be assessed?

- Learner progress in
- i. Skills
 - ii. Knowledge
 - iii. Understanding
 - iv. Dispositions of ongoing learning

Comparison of AoL, AfL and AaL

	Assessment Of Learning	For Learning	As Learning
Type	Summative	Formative	Formative
What	Teachers determine the progress or application of knowledge or skills against a standard.	Teachers and peers check progress and learning to help learners to determine how to improve.	Learner takes responsibility for their own learning and asks questions about their learning and the learning process and explores how to improve.
Who	Teacher	Teacher & Peers	Learner & Peers
How	Formal assessments used to collect evidence of learner progress and may be used for achievement grading on grades.	Involves formal and informal assessment activities as part of learning and to inform the planning of future learning.	Learners use formal and informal feedback and self-assessment to help understand the next steps in learning.
When	Periodic report	Ongoing feedback	Continual reflection
Why	Ranking and reporting	Improve learning	Deeper learning and learning how to learn
Emphasis	Scoring, grades, and competition	Feedback, support, and collaboration	Collaboration, reflection, and self-evaluation

Key Ideas for Session Two

- Assessment **as** Learning: Occurs when learners reflect on and monitor their progress to inform their future
- Assessment **for** Learning: Occurs when teachers use inferences about learners' progress to inform their teaching.
- Assessment **of** Learning: Occurs when teachers use evidence of learners learning to make judgments on learner achievement against goals and standards

Reflection

Discuss and identify the appropriate purpose and rationale of assessment for the following tasks.

Examples of assessment tasks	Type of Assessment (AoL, AaL, AfL)	Rationale
Class Test		
Research Tasks		
Project Work		
Presentations (Oral/ written)		
Groupwork		
Research Proposals		
Class exercise		

Discussion

Assessment is an essential and integral part of the teaching and learning process.

How important is this statement based on the understanding of the Principles and Nature of assessment?

Session 3: Forms of Assessment

There are two ways of assessing learners namely formative assessment and summative assessment. In this session, we will explain the difference between these two types of assessment, outline some methods of evaluation, and assess why both are essential to learners' development.

Learning outcomes

By the end of this session, the participant will be able to:

- Distinguish between formative and summative assessment
- Explain the essentials of these assessments for learners' development.

Formative and Summative Assessment

Formative Assessment	Summative Assessment
<p>i. Is intended to collect data on learner's learning and progress in a way that gives both the learner and the teacher feedback and relevant information while teaching and learning are ongoing.</p> <p>ii. Formative assessments can be administered before, during, or after a lesson.</p> <p>iii. Formative assessments can inform the teacher on the need to reteach or reinforce a post-learning experience/ outcome.</p>	<p>i. It could be administered at the end of teaching a unit, topic, or level in learning progression such as midterm, end of term or end of the year.</p> <p>ii. The expectation is that at this point, new topics or content will be introduced.</p> <p>iii. In some rare cases, summative assessment could be formative in determining how new learning should and would be approached.</p> <p>iv. Assessment at this stage could be the norm-referenced or criterion reference</p>

Examples:	
<ul style="list-style-type: none"> i. Pop quizzes ii. Reading checks iii. Learning games iv. Homework v. Discussion questions vi. Music rehearsals vii. Reflection paragraphs 	<ul style="list-style-type: none"> i. Graded tests ii. Research reports iii. Structured essays iv. Portfolio projects v. Book reports vi. Final exams vii. Recitals or concerts viii. Standardized tests ix. Science projects

Importance of formative assessment for learning

Formative assessment is a flexible and informal way of assessing a learner's progress and their understanding of a certain subject matter. It may be recorded in a variety of ways, or may not be recorded at all, except perhaps in lesson planning to address the next steps.

- Formative assessment helps learners identify their strengths and weaknesses and target areas that need work.
- It also helps educators and governors recognise where learners are struggling and address problems immediately.
- At a school level, school leaders use this information to identify areas of strength and weakness across the institution, and to develop strategies for improvement.
- As the learning journey progresses, further formative assessments indicate whether teaching plans need to be revised to reinforce or extend learning.

Importance of summative assessment for learning

In the current education system, standard-driven instruction plays a significant role. Summative assessment, therefore,

- provides an essential benchmark to check the progress of learners, institutions, and the educational program of the country.
- Summative assessment contributes largely towards improving the curriculum and overall curriculum planning.
- When summative assessment data indicates gaps across the board between learner knowledge and learning targets, schools may turn to improved curriculum planning and new learning criteria to assess and improve their school attainment levels.

Differentiation in assessment

Differentiated assessment involves teachers considering different types of assessment strategies and ways learners can demonstrate their understanding to cater to different learning needs, interests, and abilities ensuring fairness, equity, and inclusion. Differentiated assessment may consider the differences between individual learners, such:

- The current level of understanding and ability
- Prior learning experiences
- Motivation and engagement with learning
- Interests and talents
- Learning preferences

How is differentiated assessment different from other assessments?

1. Is part of effective planning	4. Focus on how learners learn	7. Is central to classroom practice
1. Develops the capacity for self (and peer) assessment	5. Recognizes all educational achievement	8. Is a key professional
2. Promotes understanding of goals and criteria	6. Help learners know how to improve	9. Is sensitive, constructive, and fosters motivation

Teachers who practice differentiation in the classroom may:

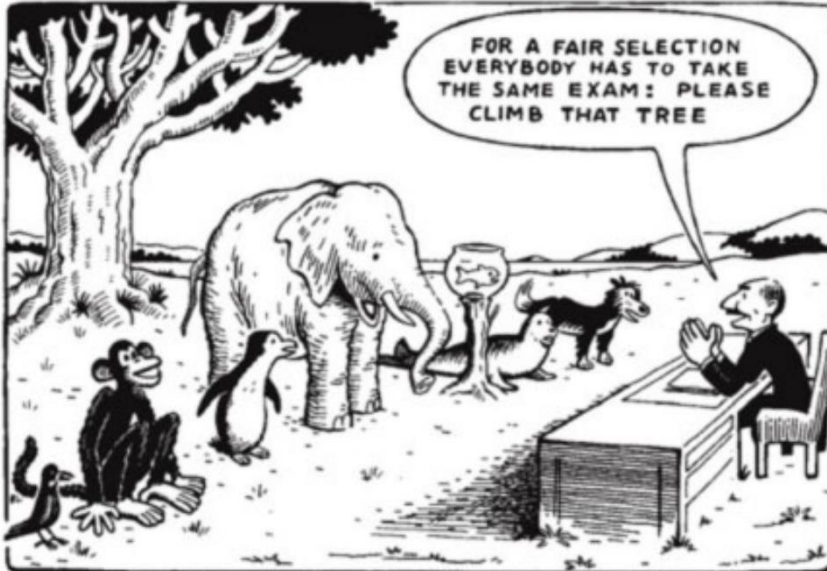
- Design assessment based on learners' learning styles.
- Group learners by shared interest, topic, or the ability for assignments.
- Assess learners' learning using formative assessment.
- Manage the classroom to create a safe and supportive environment.
- Continually assess and adjust lesson content to meet learners' needs.

Key Ideas in Session Three

- Formative assessment forms part of the instructional process which helps teachers modify teaching methods and future lessons based on needs to improve learning.
- Summative assessment determines what learners know at a particular point in time/ end of a learning session to improve the overall school performance.
- Differentiated assessment is an ongoing process through which teachers gather data before, during, and after instruction from multiple sources to identify learners' needs and strengths

Reflection

What do you think this image is trying to get at based on what you have learned about assessment? **Discuss**



source: <https://historyof.place/wp-content/uploads/2016/12/slorach.jpg>

Discussion

- What are some of the ways to differentiate assessment to meet varied learner needs in the classroom?
- Why is assessment important in differentiation learning?
- How can teachers differentiate assessments?

Scenario. Application of Differentiated Assessment

For each scenario that follows, consider the following conditions, and respond:

- Is it differentiation?
 - Why or why not? What would make it more differentiated?
 - What would a highly accomplished differentiating teacher do in the situation?
1. In the same 30 minutes, advanced learners get 25 math problems while struggling learners are assigned only five. A learner who seems to mix up decimal places and place values in his math problems is asked to do his work on graph paper, even on tests, thereby keeping his numbers clearly within their columns. The teacher raises or lowers what she expects of learners regarding the grade level curriculum based on their developmental level, and she adjusts her assignments

for them accordingly.

2. English Language learners get a lower order thinking task than the rest of their class. A learner keeps re-doing an essay to improve his grade, but he seems to disregard the advice the teacher gives him on each attempt. He makes a few cosmetic changes and re-arranges some words, but there's no substantive change. He and the teacher are getting frustrated at his lack of progress. The teacher takes the grade as is and hopes next year's teacher will be more successful.

Discussion: Indicate whether these tasks are Formative or Summative in Nature

Statements	F/S
<ol style="list-style-type: none">1. Let learners write quizzes for their peers, complete with answer keys.2. Have learners keep a journal from the perspective of a minor character in a book. Check entries periodically.3. Assign a budget for a character at the end of a novel unit based on any expenses incurred throughout the book.4. Have learners create a multimedia poster (or one-pager) that incorporates ideas from the entire unit.5. Encourage learners to depict a scientific process, complex plot, historical event, or mathematical concept in graphic novel format.6. Hand out individual whiteboards and have learners draw emojis that demonstrate how they feel about what they're learning or how much they are enjoying the lesson.7. Ask learners to write down their favourite quote from last night's reading assignment and to explain what it means.8. Assign a song project in which learners change the lyrics of their favourite songs to demonstrate their knowledge of a concept from the unit or course.9. Let learners design a board game that depicts a process or event, complete with challenges and creative details.10. Play a fun vocabulary or spelling game instead of a quiz.	

Session 4: Test construction, administration, scoring, and giving feedback

Most classroom assessment involves tests that teachers have constructed themselves. It is estimated that mostly teacher-made tests are used in a typical classroom per year which results in perhaps billions of unique assessments yearly worldwide. This session seeks to equip participants with competencies for constructing, administering, and scoring teacher-made tests as well as providing effective feedback.

Learning outcomes

By the end of this session, the participant will be able to:

- Describe how a test plan is used in test development to align the test to the content domain and learning objectives.
- Write and critique test items that match given learning objectives and depths of knowledge and that follow the item writing guidelines.
- Score and provide effective feedback

General Tips to Test Construction

1. **Start with your learning outcomes.** Choose objective and subjective assessments that match your learning outcomes and the level of complexity of the learning outcome.
2. **Use a test blueprint (Table of Specification-ToS).** A test blueprint is a rubric, document, or table that lists
 - a. the learning outcomes to be tested,
 - b. the level of complexity, and
 - c. the weight for the learning outcome (see sample).

Content	Cognitive Emphasis			Total (Content)
	Knowledge & Comprehension	Application & Analysis	Synthesis & Evaluation	
Main Topic	%	%	%	%
Sub-Topic 1	-	Item Format @ Mark each	Type of Exam @ Mark each	%
Sub-Topic 2	Type of Exam @ Mark each	Type of Exam @ Mark each	-	%
Total (Cognitive Emphasis)	%	%	%	%

Source: adapted from Alias (2005)

A blueprint will make writing the test easier and contribute immensely to test validity. Note that Bloom's taxonomy can be very useful with this activity.

3. **Let your learners know what to expect on the test.** Be explicit; otherwise, learners may make incorrect assumptions about the test.
4. **Word questions clearly and simply.** Avoid complex questions, double negatives, and idiomatic language that may be difficult for learners, especially multilingual learners, to understand.
5. **Have a colleague or instructional assistant read through (or even take) your test.** This will help ensure your questions and exam are clear and unambiguous. This also contributes to the reliability and validity of the test
6. **Assess the length of the test.** Unless your goal is to assess learners' ability to work within time constraints, design your exam so that learners can comfortably complete it in the allocated time. A good guideline is to take the exam yourself and time it, then triple the amount of time it took you to complete the test or adjust accordingly.
7. **Write your test key (scoring guide/marking scheme) prior to learners taking the exam.** The point value you assign to each question should align with the level of difficulty and the importance of the skill being assessed. Writing the exam key enables you to see how the questions align with instructional activities. You should be able to easily answer all the questions. Decide if you will give partial credit to multi-step questions and determine the number of steps that will be assigned credit. Doing this in advance assures the test is reliable and valid.
8. **Design your test so that learners in your class have an equal opportunity to fully demonstrate their learning.** Use different types of questions, reduce or eliminate time pressure, allow memory aids when appropriate, and make your questions fair. An exam that is too easy or too demanding will not accurately measure your learners' understanding of the material.

Characteristics of test items/ questions, and how to choose which to use

Including a variety of test types in an exam enables the test constructor to better leverage the strengths and overcome the weaknesses of any individual item type. Multiple choice questions are popular for their versatility and efficiency, but many other question types can add value to a test. Some points to consider when deciding which, when, and how often to use a particular question type include:

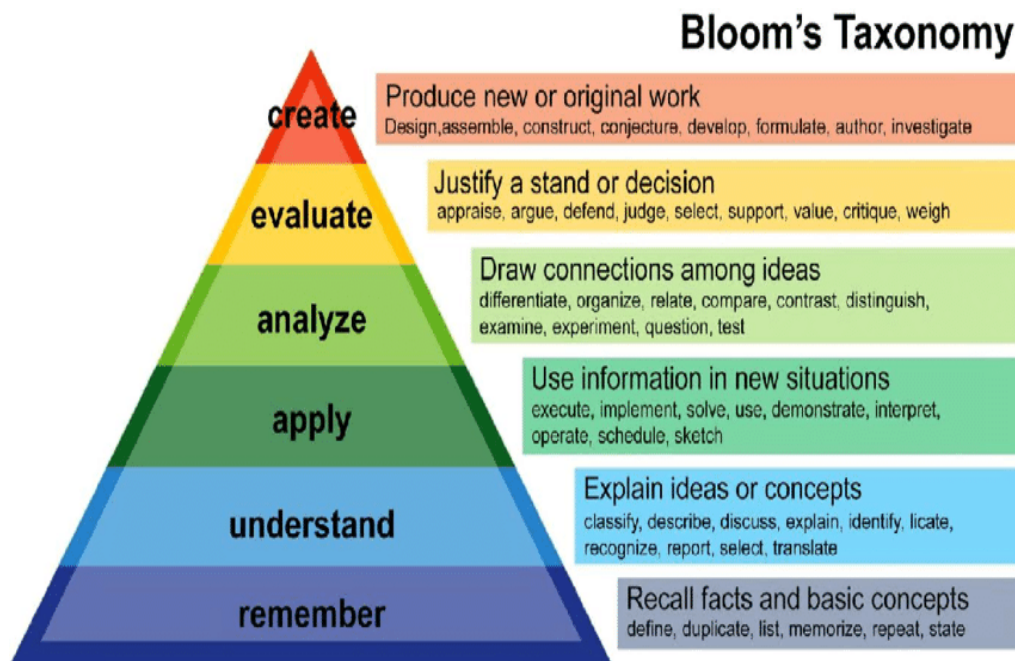
- i. *Workload:* Some questions require more front-end workload (i.e., time-consuming to write), while others require more back-end workload (i.e., time-consuming to mark).
- ii. *Depth of knowledge:* Some question types are better at tapping higher-order thinking skills, such as analysing or synthesizing, while others are better for surface-level recall.

- iii. *Processing speed:* Some question types are more easily processed and can be more quickly answered. This can impact the timing of the test and the distribution of learners' efforts across different knowledge domains.

All test items should:

- i. Assess the achievement of learning outcomes for the unit and/or course
- ii. Measure important concepts and their relationship to that unit and/or course
- iii. Align with your teaching and learning activities and the emphasis placed on concepts and tasks
- iv. Measure the appropriate level of knowledge
- v. Vary in levels of difficulty (some factual recall and demonstration of knowledge, some application and analysis, and some evaluation and creation)

Bloom's Taxonomy



Bloom's Taxonomy by Vanderbilt University Centre for Teaching

Figure 4.1: Bloom's Taxonomy with action verbs

Assessment Formats

Participants should note that basically, there are two general categories for test items namely:

- A. Objective type test
- B. Subjective type test

Differences between Objective and Subjective Test Items

Objective type items	Subjective or essay items
<p>Learners select the correct response from several alternatives or supply a word or short phrase answer. These types of items are easier to create for lower order Bloom's (recall and comprehension) while still possible to design for higher order thinking test items (apply and analyse).</p> <p>Objective test items include:</p> <ul style="list-style-type: none"> i. <u>Multiple choice</u> ii. <u>True-false</u> iii. <u>Matching</u> iv. <u>Completion/Fill-in-the-blank</u> <p><i>Objective test items are best used when:</i></p> <ul style="list-style-type: none"> i. The group tested is large; objective tests are fast and easy to score. ii. The test will be reused (must be stored securely). iii. Highly reliable scores on a broad range of learning goals must be obtained as efficiently as possible. iv. Fairness and freedom from possible test scoring influences are essential. 	<p>Learners present an original answer. These types of items are easier to use for higher order Bloom's (apply, analyse, synthesize, create, evaluate).</p> <p>Subjective test items include:</p> <ul style="list-style-type: none"> i. <u>Short answer essay</u> ii. Extended response essay iii. Problem solving iv. Performance test items (these can be graded as complete/incomplete, performed/not performed) <p><i>Subjective test items are best used when:</i></p> <ul style="list-style-type: none"> i. The group to be tested is small or there is a method in place to minimize marking load. ii. The test is not going to be reused (but could be built upon). iii. The development of learners' writing skills is a learning outcome for the course. iv. Learner attitudes, critical thinking, and perceptions are as, or more, important than measuring achievement.

What Are Test Administration Principles?

Test administration principles are guidelines (i.e., a set of policies and procedures) that outline how standardized assessments should be distributed and administered. These guidelines exist to increase validity, ensure test security, and safeguard the fair and reliable results of exam scores.

Proper administration of assessment tools is essential to obtaining valid or meaningful scores for your test takers.

Administering Guidelines Before, During, and After Assessment

Responsibilities		
Before	During	After
<p>Test Conditions</p> <ul style="list-style-type: none"> i. Manage printing of the test if test takers are large in number ii. Manage photocopy from a proper/new machine iii. Use good quality of the paper and printing iv. Retain original test in your own custody v. Be careful while making sets of the test (staple different papers carefully) vi. Manage confidentiality of the test 	<p>Physical Environment</p> <ul style="list-style-type: none"> i. Provide easy, comfortable, and proper seats ii. Provide a proper system of light, temperature, air, and water. iii. Clarify all the rules and regulations of the examination centre/hall iv. Rotate distributions v. Remind the learners to check their copies <p>Psychological environment</p> <ul style="list-style-type: none"> i. Maintain a positive attitude for achievement ii. Maximize achievement motivation iii. Equalize advantages to all the learners iv. Monitor learners 	<ul style="list-style-type: none"> i. Collect and account for all test materials and documents, both used and unused. ii. Count through candidates' scripts to ensure their number corresponds with the names on the examination attendance register. iii. Make marking scheme (Scoring/Rubrics) available iv. Make scoring/rubrics very clearly. v. Review the marking scheme after the assessment

	continuously v. Minimize distractions vi. Give time warnings properly	
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Scoring and giving feedback

A scoring guide for assessment, usually in the form of a matrix or grid, is a tool used to interpret and grade learners' assessment against criteria and standards. Scoring guide are sometimes called "marking scheme", "rubric", or "scoring guides". Scoring guides can be designed for any content domain.

Benefits of Assessment rubrics:

1. provide a framework that clarifies assessment requirements and standards of performance for different grades.
2. enable very clear and consistent communication with learners about assessment requirements and about how different levels of performance earn different grades.
3. They allow assessors to give very specific feedback to learners on their performance.
4. when learners are involved in their construction, encourage them to take responsibility for their performance
5. when used for self-assessment and peer assessment, make learners aware of assessment processes and procedures, enhance their meta-cognitive awareness, and improve their capacity to assess their own work
6. can result in richer feedback to learners, giving them a clearer idea where they sit in terms of an ordered progression towards increased expertise in a learning domain.
7. by engaging colleague teams in rubric-based conversations about quality, help them develop a shared language for talking about learning and assessment.
8. help assessors efficiently and reliably interpret and grade learners' work.
9. systematically illuminate gaps and weaknesses in learners' understanding against criteria, helping teachers target areas to address

Feedback

Feedback is any response regarding a learner's performance or behavior. It can be verbal, written, or gestural. The purpose of feedback in the assessment and learning process is to improve a learner's performance. It is essential that the process of providing feedback is a positive, or at least a neutral, learning experience for the learner. Negative feedback can discourage learner effort and achievement. Teachers have the distinct responsibility to nurture a learner's learning and to provide feedback in such a manner that the learner does not leave the classroom feeling defeated.

Characteristics of Effective Feedback

1. Educative in Nature

Providing feedback means giving learners an explanation of what they are doing correctly and incorrectly, with the focus of the feedback on what the learners is doing right. It is most productive to a learner's learning when they are provided with an explanation as to what is accurate and inaccurate about their work. One technique is to use the concept of a "feedback sandwich" to guide your feedback: Compliment, Correct, Compliment.

2. Given In a Timely Manner

When learner feedback is given immediately after showing proof of learning, the learner responds and remembers the experience about what is being learned more positively. If we wait too long to give feedback, the learner might not connect the feedback with the learning moment.

3. Sensitive to the Individual Needs of the Learner

It is vital that we take into consideration each individual when giving learner feedback. Our classrooms are full of diverse learners. Some learners need to be nudged to achieve at a higher level and other needs to be handled gently so as not to discourage learning and damage self-esteem.

4. Answers the for Questions

Effective teaching and learning have shown that learners want to know where they stand regarding their work. Providing answers to the following four questions on a regular basis will help provide quality learner feedback.

- i. What can the learner do?
- ii. What can't the learner do?
- iii. How does the learner's work compare with that of others?
- iv. How can the learner do better?

Feedback is one of the most powerful influences on learning and achievement, but this impact can be either positive or negative." - Hattie & Timperley, 2007

Key ideas in Session Four

- Designing tests involves the planning, preparing, administering, scoring, statistically analyzing, and reporting results of tests
- Score the essay test when you are physically sound, mentally alert and in an environment with very little or no distraction.
- Feedback improves learner confidence, motivation to learn and ultimately, a learner's attainment.

Reflection

Examine the items below and identify the flaws(errors).

1. Technical advances in farm equipment; a. encourage urbanization because fewer people live on farms b. higher food prices c. revolutionized the industry d. never occurs rapidly e. both a and c d. none of the above.
2. All the following are correct procedures for putting out a fire in a pan on the stove except:
 - A. Do not move the pan.
 - B. Pour water into the pan. ***
 - C. Slide a fitted lid onto the pan.
 - D. Turn off the burner controls.
3. Suppose you are a mathematics professor who wants to determine whether your teaching of the unit on probability has had a significant effect on your learners. You decide to analyse their scores from a test they took before the instruction and their scores from another exam taken after the instruction. Which of the following t-tests is appropriate to use in this situation?
 - A. Dependent samples.
 - B. Heterogeneous samples.
 - C. Homogeneous samples.
 - D. Independent samples.

Self -Assessment

- i. Prepare a table of specification (ToS) following the following guidelines:
 - a. Choose an important curriculum topic or teaching subject
 - b. List the key content areas in that topic or subject. Show (in percentage terms) the relative importance of each key area.
- ii. Compare your key content areas and associated relative importance with one or more persons attempting this exercise.

UNIT 5: CLINICAL TEACHING

Teaching can be fun and challenging at the same time. Imagine entering a classroom of about 40 learners with varying learning needs with all of them requiring your assistance. Even if you have learned all the theories about teaching and classroom management, this experience can be overwhelming as a first-time teacher.

Therefore, the clinical teaching sessions are to help you focus on developing the teaching competencies by teaching your peers with your tutor(s) present to give you expert guidance before and after the teaching. The clinical teaching sessions will enable you to build your confidence while honing your teaching skills before you find yourself in a regular classroom to teach.

Clinical teaching will take place from the 2nd week of teaching to the 5th week. Each person will have the opportunity to teach at least two lessons within this period and receive feedback from the tutor(s) and peers on their strengths, areas of improvement and suggestions for improvement.

Learning outcomes

It is expected that after participating in this clinical teaching, you will:

- Demonstrate the knowledge acquired in the other units to prepare good lesson plans.
- Demonstrate the ability to self-reflect on lessons taught.
- Develop confidence in your teaching ability.
- Value the importance of feedback from peers and more knowledgeable others.

Prerequisite Courses

To successfully go through this component of your preparation, you would have gone through the following units:

1. Essential Pedagogies and Professional Practice.
2. Professional Attitudes, Values and Ethics in Teaching.
3. Use of ICTs in Education.
4. Assessment Practices in Schools

Learning to Teach

Teaching is an intentional act. This means you must be purposeful in everything you do such as before, during and after teaching. Here are some guiding questions as you prepare to teach (before phase).

1. At the end of the lesson, what knowledge, skills, values and attitudes (learning outcomes) do I expect my learners to acquire and/or develop (lesson objectives/standards)?
2. What do learners already know that can support the new learning (relevant previous knowledge)?

3. In what order will the key learning outcomes be sequenced (sequencing)?
4. How many lessons will I need to accomplish my lesson objectives knowing the learners' characteristics (sequencing and timing)?
5. How will I manage the diversity in learner needs in the classroom (GESI)?
6. What teaching-learning materials including technology will be needed to ensure the successful implementation of the lesson(s) (TLRs)?
7. How will I determine whether the learners have learned what I expected them to know and be able to do (assessment)?
8. How does this lesson prepare the learners for the next lesson (sequencing – how do lessons fit together)?

Answering these questions will help you plan for a successful lesson as you anticipate how the lesson is likely to unfold in the classroom.

During Lesson

A good teacher constantly monitors the teaching-learning process to identify what works and what aspects may require modification. It is therefore common to see good teachers make changes to their lesson plan such as changing their instructional strategy in response to what is happening in the classroom.

Here are some guiding questions at this phase of teaching:

1. How are the learners engaging with the various activities? Enjoying or disengaged?
2. What can I do differently to re-engage those learners who appear disinterested? How about those who appear not to be sufficiently challenged?
3. How can I reword the task so that learners know what is being asked of them?

Post- Lesson

Teaching does not end with the ringing of the bell that signals a change in a lesson. The good teachers engage in post-lesson reflections aimed at understanding how successful the lesson was. This is a crucial skill to have so that you continually learn from your teaching so you find ways to improve on what works well, what is not working so well and what the next steps should be. Here are some guiding questions as you engage in the post-lesson reflection:

1. What was/were my lesson objective(s)?
2. What worked well in this lesson? What is my evidence?
3. What did I do that led to that success?
4. What did not work well? Why did it happen that way?
5. What will I do the same or differently if I am to teach this lesson again? Why?

Scenario

A teacher always boasts that everything is in his head and so does not need to revise or research before going to the classroom to teach. On this day, he quickly realised that what he expected the learners to know was non-existent because they could not answer any of the initial questions posed. Also, after a few minutes into the main lesson, some of the learners started saying 'non-sylla', 'consider our age', 'we do not know anything about this topic'. This teacher ignored the learners' feedback and continued teaching only to observe during the marking of the class exercise that most of them did not do well.

Guiding questions

1. Why was the teacher's lesson not so successful?
2. What must the teacher do differently next time of teaching?

Key Ideas

1. Learning plan is important for successful teaching-learning. Failing plan is planning to fail.
2. Learning planning helps ensure sequential development of lessons.
3. While teaching, learners give us feedback which can help improve our teaching and possibly adopt new approaches.
4. Reflection is critical and should be carried out throughout the lesson

Reflection

What have you learned about the importance of planning before going to the classroom to teach?

Assessment Plan

Assessment for the clinical teaching will be summative (using a scoring rubric) and formative (Reflective Journal). You are expected to teach at least twice during the training period, about 15 – 20 minutes lesson, followed by post-lesson discussions for about 10 – 15 minutes. Your tutor(s) will score you during the clinical teaching along some pre-determined competencies.

Following your teaching, your tutor(s) and your peers will give you some feedback on what worked well and areas of improvement after you have been given the first opportunity to reflect on your teaching.

Also, you will be expected to keep and produce a reflective journal (Reflective Journal (RJ)). The RJ will help you document your learning by responding to the following prompts any time you teach.

Here are some guiding questions as you engage in the post-lesson reflection:

1. What did I learn from my teaching today?
2. What will I do the same or differently if I am to teach this lesson again? Why?

Materials and Resources

1. Bound notebook to write all lesson notes
2. Clinical Teaching Supervision Form A
3. Comments Form B
4. Relevant teaching and learning resources

ACKNOWLEDGEMENT

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Contributors

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APPENDIXES

ICT use in the classroom: Making the most of ICT

Instruction: In groups complete the table

Type of technology	Do you have access?	Know how to use?	How do you use this form of ICT in your work as a teacher?	How could this be used by a teacher in their own work or in the classroom?
Mobile phone				
Camera				
Video camera				

Type of technology	Do you have access?	Know how to use?	How do you use this form of ICT in your work as a teacher?	How could this be used by a teacher in their own work or in the classroom?
Hand held recording device				
Radio				
Laptop computer				
Tablet computer				

Type of technology	Do you have access?	Know how to use?	How do you use this form of ICT in your work as a teacher?	How could this be used by a teacher in their own work or in the classroom?
Projector and screen (or white wall)				
Television				
Computer room with 20 desktops or laptops				

Type of technology	Do you have access?	Know how to use?	How do you use this form of ICT in your work as a teacher?	How could this be used by a teacher in their own work or in the classroom?
20 tablet computers for use in class				
Desktop computer				
Interactive white board (SMART board)				

Type of technology	Do you have access?	Know how to use?	How do you use this form of ICT in your work as a teacher?	How could this be used by a teacher in their own work or in the classroom?
Access to the internet				

OER CYCLE ACTIVITY SHEET

Instruction: In groups complete the table

IDENTIFY Learning Need	SELECT OER	ADAPT OER	ENACT Use with learners	EVALUATE Evidence from practice	share

APPENDIX A

General Guidelines for Item Writing

1. Select the type of test item that measures the intended learning outcome most directly.
2. Write the test item so that the performance it elicits matches the performance in the learning task.
3. Write the test item so that the test task is clear and definite
4. Write the test item so that it is free from non-functional material
5. Write the test item so that irrelevant factors do not prevent an informed student from responding correctly
6. Write the test item so that irrelevant clues do not enable the uninformed student to respond correctly
7. Write the test item so that the difficulty level matches the intent of the learning outcomes, the age group to be tested, and the use to be made of the results.
8. Write the test item so that there is no disagreement concerning the answer
9. Write the test item far enough in advance that they can be later reviewed and modified as needed
10. Write more test items than called for by the test plan

APPENDIX B

Guidelines for Writing Multiple-Choice Items

1. Design each item to measure an important learning outcome
 2. Present a single formulated problem in the stem of the item (EG 1)
 3. State the stem of the item in simple, clear language. (EG 2, EG 3)
 4. Put as much of the wording as possible in the stem of the item. (EG4, EG 5)
 5. State the stem of the item in positive form, whenever possible (EG 6)
 6. Emphasize negative wording whenever it is used in the stem of an item (EG 7)
 7. Make certain that the intended answer is correct and best. (EG8, EG 9)
 8. Make all alternatives grammatically consistent with the stem of the item and parallel in form. (EG 10, EG 11)
 9. Avoid verbal clues that might enable students to select the correct answer or eliminate an incorrect alternative. (EG 12, EG 13, EG 14, EG 15, EG 16, EG 17)
 10. Make the distractors plausible and attractive to the uninformed. (EG 18)
 11. Vary the relative length of the correct answer to eliminate length as a clue. (EG 19)
- Avoid using the alternative “all of the above”, and use “none other above” with extreme caution. (EG 20)
 - Vary the position of the correct answer in a random manner. The options should be arranged as simply as possible to avoid giving clues. It is preferable to list them in some order below the stem (alphabetically if single a word, in ascending or descending if numerals or dates, or by the length of response).
 - Control the difficulty of the item either by varying the problem stem or by changing the alternatives (make the more homogeneous).
 - Make certain each item is independent of the other items in the test.
 - Use an efficient item format (when typing).
 - Follow the normal rules of grammar (eg. question mark – capital).
 - Break or bend any of these rules if it will improve the effectiveness off the item.

APPENDIX C

Checklist for Evaluating Multiple-choice Items

SN	STATEMENT	YES	NO
1	Is this type of item appropriate for measuring the intended learning outcome?		
2	Does the item task match the learning task to be measured?		
3	Does the stem of the item present a single, clearly formulated problem?		
4	Is the stem stated in simple, clear language?		
5	Is the stem worded so that there is no repetition of material in the alternatives?		
6	Is the stem stated in a positive form whenever possible?		
7	If negative wording is used in the stem, is it emphasized (underlined, bold, caps		
8	Is the intended answer correct or the best?		
9	Are all alternatives grammatically consistent with the stem and parallel inform		
10	Are the alternatives free from verbal clues to the correct answer?		
11	Are the distracters plausible and attractive to the uninformed		
12	To eliminate length as a clue, is the relative length of the correct answer varied?		
13	Has the alternative “all of the above” been avoided and “none of the above” used only when appropriate?		
14	Is the position of the correct answer varied so that there is no detectable pattern?		
15	Do the item format and grammar usage provide for efficient test taking?		

ACTIVITY SHEET A

ADVANTAGES AND DISADVANTAGES OF TEST FORMATS

KEY: TICK AS APPLIED

SN.	FACTOR	ITEM FORMATS	
		ESSAY	MULTIPLE CHOICE
1	Measures learner's ability to select organize, synthesize their ideas and express themselves clearly		
2	Discourages bluffing		
3	Potential diagnostic value		
4	Answers can be deduced by the process of elimination		
5	Can be quickly marked		
6	Can be marked by a machine or an untrained person		
7	Scoring is reliable		
8	Answers depend on language fluency		
9	Provides for good item bank		
10	Takes relatively little time to prepare		
11	Measures higher thinking skills		
12	Able to test a large part of the syllabus		
13	Measures learner's ability to apply in different situations		
14	Is able to cover many objectives		
15	Can measure originality and creativity		

(Adapted from Thorndike and Hagan, 1969)

ACTIVITY WORKSHEET B

KEY: REFER TO APPENDIX B

EG 1

Poor	Better
A table of specifications:	What is the main advantage of using a table of specifications when preparing an achievement test?
<ul style="list-style-type: none"> • Indicates how a test will be used to improve learning • Provides a more balanced sampling of content • Arranges the instructional objectives in order of their importance • Specifies the method of scoring to be used on a test 	<ul style="list-style-type: none"> • It reduces the amount of time required. • It improves the sampling of content. • It makes the construction of test items easier. • It increases the objectivity of the test
<ul style="list-style-type: none"> • Collection of true-false statements with a common stem 	<ul style="list-style-type: none"> • The alternatives provide a series of possible answers to choose • A single problem is presented in the stem • Good diagnostic value

EG 2

Poor	Better
The paucity of plausible, but incorrect, statements that can be related to a central idea poses a problem when constructing which one of the following types of test items?	The lack of plausible, but incorrect, alternatives will cause the greatest difficulty when constructing:
<ul style="list-style-type: none"> • Short answer. • True-false. • Multiple choice. • Essay. 	<ul style="list-style-type: none"> • Short-answer items. • True-false items. • Multiple-choice items. • Essay items.
<ul style="list-style-type: none"> • Ambiguous and prevent a knowledgeable student from responding correctly • A measure of reading comprehension than of the intended outcome 	

EG 3

Poor	Better
<p>Testing can contribute to the instructional program of the school in many important ways. However, the main function of testing in teaching is:</p>	<p>The main function of testing in teaching is:</p>
<ul style="list-style-type: none"> • Loading the stem with irrelevant and, thus, nonfunctioning material. • Increases reading time and makes no contribution to the measurement of the specific outcome. • This is probably due to the teacher's desire to continue to teach the students – even while testing them. 	

EG 4

Poor	Better
<p>In <i>objective</i> testing, the term <i>objective</i>:</p>	<p>In <i>objective</i> testing, the term <i>objective</i> refers to the method of:</p>
<ul style="list-style-type: none"> • Refers to the method of identifying the learning outcomes. • Refers to the method of selecting the test content. • Refers to the method of presenting the problem. • Refers to the method of scoring the answers. 	<ul style="list-style-type: none"> • identifying the learning outcomes. • selecting the test content. • presenting the problem. • scoring the answers.
	<ul style="list-style-type: none"> • Clarify the problem further and reduce the time needed to read the alternatives

EG 5

Poor	Better
<p>Instructional objectives are most apt to be useful for test-construction purposes when they are stated in such a way that they show:</p> <ul style="list-style-type: none"> • the course content to be covered during the instructional period. • the kinds of performance students should demonstrate upon reaching the goal. • the things the teacher will do to obtain maximum student learning. • the types of learning activities to be participated in during the course 	<p>Instructional objectives are most useful for test-construction purposes when they are stated in terms of:</p> <ul style="list-style-type: none"> • course content. • student performance. • teacher behavior. • learning activities.
	<ul style="list-style-type: none"> • Economy of wording and clarity of expression are important goals to strive for. • Items function better when slim and trim.

EG 6

• A positively phrased item tends to measure more important learning outcomes than a negatively stated item. Knowing the ‘best’ method is more significant than knowing the ‘poorest method.’

EG 7

Poor	Better
Which one of the following is not a desirable practice when preparing multiple-choice items?	All of the following are desirable practices when preparing multiple-choice items EXCEPT:
<ul style="list-style-type: none"> • Stating the stem in positive form. • Using a stem that could function as a short-answer item. • Underlining certain words in the stem for emphasis. • Shortening the stem by lengthening the alternatives. 	<ul style="list-style-type: none"> • Stating the stem in positive form. • Using a stem that could function as a short-answer item. • Underlining certain words in the stem for emphasis. • Shortening the stem by lengthening the alternatives.
<ul style="list-style-type: none"> • Used when negative wording is an important learning outcome eg. Knowing when 'not' to cross the road, 'not' to mix certain chemicals 	<ul style="list-style-type: none"> • Underlined, capitalized, bold and placed near the end of the statement • The item's negative aspect will not be overlooked • It furnishes the student with the proper mind-set just before reading the alternatives

EG 8, EG 9

Poor	Better
What is the best method of selecting course content for test item?	Which one of the following is the best method of selecting course content for test items?
	<ul style="list-style-type: none"> • 'of the following' is included in the stem to allow for equally satisfactory answers that have not been included in the item.
What is the purpose of classroom testing?	One purpose of classroom testing is: (or) The main purpose of classroom testing is:
	<ul style="list-style-type: none"> • Proper phrasing of the stem also help avoid equivocal answers. An inadequately stated problem makes the intended answer only partially correct or makes more than one alternative suitable.

EG 10

Poor	Better
The recall of factual information can be measured best with a:	The recall of factual information can be measured best with:
<ul style="list-style-type: none"> • matching item. • multiple-choice item. • short-answer item. • essay question. 	<ul style="list-style-type: none"> • matching items. • multiple-choice items. • short-answer items. • essay questions.
<ul style="list-style-type: none"> • May be inconsistent in tense, article, or grammatical form. This could provide a clue to the correct answer, or at least make some of the distracters ineffective. • The article 'a' makes the last distracter obviously wrong 	<ul style="list-style-type: none"> • Prevent grammatical inconsistency by avoiding using the articles 'a' or 'an' at the end of the stem

EG 11

Poor	Better
Why should negative terms be avoided in the stem of a multiple-choice item?	Why should negative terms be avoided in the stem of a multiple-choice item?
<ul style="list-style-type: none"> • They may be overlooked. • The stem tends to be longer. • The construction of alternatives is more difficult. • The scoring is more difficult. 	<ul style="list-style-type: none"> • They may be overlooked. • They tend to increase the length of the stem. • They make the construction of alternatives more difficult. • They may increase the difficulty of the scoring.
<ul style="list-style-type: none"> • When the grammatical structure of one alternative differs from that of the others, some students may more readily detect that alternative as a correct or an incorrect response. • Students who lack the knowledge called for are apt to select the correct answer because of the way it is stated. 	<ul style="list-style-type: none"> • The parallel grammatical structure removes this clue

EG 12

(a) Similarity of wording in both the stem and the correct answer

Poor	Better
Which one of the following would you consult first to locate research articles on achievement testing?	
<ul style="list-style-type: none"> • Journal of Educational Psychology • Journal of Educational Measurement • Journal of Consulting Psychology • Review of Educational Research 	
<ul style="list-style-type: none"> • The word 'research' in both the stem and the correct answer provide a clue to the uninformed but testwise student 	<ul style="list-style-type: none"> • Such obvious clues might better be used in both the stem and an <i>incorrect</i> answer in order to lead the uninformed away from the correct answer.

EG 13

(b) Stating the correct answer in textbook language or stereotyped phraseology

Poor	Better
Learning outcomes are most useful in preparing tests when they are:	
<ul style="list-style-type: none"> • clearly stated in performance terms. • developed cooperatively by teachers and students. • prepared after the instruction has ended. • stated in general terms. 	
<ul style="list-style-type: none"> • Cause students to select it because it looks better than the other alternatives or they vaguely recall having seen it before 	

EG 15

(d) Including absolute terms in the distracters

Poor	Better
<p>Acheivement tests help students improve their learning by:</p> <ul style="list-style-type: none"> • encouraging them all to study hard. • informing them of their progress. • giving them all a feeling of success. • preventing any of them from neglecting their assignments. 	
<ul style="list-style-type: none"> • Such terms as 'always', 'never', 'all', 'none', 'only' etc are commonly associated with false statements and enables students to eliminate them as possible answers. This makes the correct answer obvious or increase the chances of guessing. • They are easily recognised as unlikely answers making them ineffective as distracters. 	

EG 14

(c) Stating the correct answer in greater detail

Poor	Better
<p>Lack of attention to learning outcomes during test preparation:</p> <ul style="list-style-type: none"> • will lower the technical quality of the items. • will make the construction of the test items more difficult. • will result in the greater use of essay questions. • may result in a test that is less relevant to the instructional program. 	
<ul style="list-style-type: none"> • The detail provide a clue • When the answer is qualified by modifiers that are typically associated with true statements (eg. sometimes, may, usually) it is more likely to be chosen 	

EG 16

(e) Including two responses that are all inclusive

Poor	Better
Which one of the following types of test items measures learning outcomes at the recall level?	
<ul style="list-style-type: none">• Supply-type items.• Selection-type items.• Matching items.• Multiple-choice items.	
<ul style="list-style-type: none">• Since the first two alternatives include the only two major types of test items, even poorly prepared students are likely to limit their choices to these two.	

EG 17

(f) Including two responses that have the same meaning

Poor	Better
Which one of the following is the most important characteristic of achievement test results?	
<ul style="list-style-type: none">• Consistency• Reliability• Relevance• Objectivity	
<ul style="list-style-type: none">• Both 'consistency' and 'reliability' can be eliminated because they mean essentially the same thing.• If two alternatives have the same meaning and only one answer is to be selected, it is obvious that both alternatives must be incorrect.	

EG 18

Poor	Better
Obtaining a dependable ranking of students is of major concern when using:	Obtaining a dependable ranking of students is of major concern when using:
<ul style="list-style-type: none"> • norm-referenced summative tests. • behavior descriptions. • checklists. • questionnaires. 	<ul style="list-style-type: none"> • norm-referenced summative tests. • teacher-made diagnostic tests. • mastery achievement tests. • criterion-referenced formative tests.
	<ul style="list-style-type: none"> • Homogeneity increases the plausibility and also calls for a type of discrimination that is more educationally significant

EG 19

Poor	Better
One advantage of multiple-choice items over essay questions is that they:	One advantage of multiple-choice items over essay questions is that they:
<ul style="list-style-type: none"> • measure more complex outcomes. • depend more on recall. • require less time to score. • provide for a more extensive sampling of course content. 	<ul style="list-style-type: none"> • provide for the measurement of more complex learning outcomes. • place greater emphasis on the recall of factual information. • require less time for test preparation and scoring. • provide for a more extensive sampling of course content.
<ul style="list-style-type: none"> • There is a tendency of the correct answer to be longer because the need to make it unequivocally correct. This provides a clue to the testwise student. 	<ul style="list-style-type: none"> • Lengthening the distracters removes length as a clue and increases their plausibility. They are also similar to the key in complexity of wording. • The relative length of the correct answer can be removed as a clue by varying it in such a manner that no apparent pattern is provided.

EG 20

Poor	Better
Which of the following is a category in the taxonomy of the cognitive domain?	
<ul style="list-style-type: none">• Critical Thinking• Scientific Thinking• Reasoning Ability• None of the above	
<ul style="list-style-type: none">• Resorted to when having difficulty in locating sufficient number of distracters• 'all of the above' makes it possible to answer the item on the basis of partial information. It becomes the correct choice when student detect two of the alternatives are correct and vice versa.• 'none of the above' may be measuring nothing more than the ability to detect incorrect answers. It is no guarantee that the student knows what is correct	

ACTIVITY WORKSHEET C: Developing the Test Blueprint (Exemplar)

		Course Objectives (Cognitive Hierarchies)						
	Content Areas	Remember	Understand	Apply	Analyze	Evaluate	Create	TOTAL
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
	TOTAL							

MODEL LESSON PLAN FORMAT FOR SHS

NAME
INSTITUTION
SUBJECT
TOPIC
R.P.K
ADVANCE PREPARATION:
OBJECTIVE(S)
REFERENCE (S)

FORM/CLASS
AVERAGE AGE
DURATION
DATE

T.I./RESOURCES	STEPS/CONTENT TIME	TEACHER - LEARNERS ACTIVITIES		CORE POINTS/MAJOR IDEAS
		TEACHER ACTIVITIES	LEARNERS ACTIVITIES	
	INTRODUCTION			
	DEVELOPMENT STEP 1			
	STEP II			
	APPLICATION			
	EVALUATION			

ASSIGNMENT:

SUBMISSION DATE:

REMARKS:

FORMAT FOR THE TERMLY SCHEME OF WORK FOR SHS

WEEK	WEEK ENDING	TOPIC	REFERENCES	TL/MS/ADVANCED PREPARATION	REMARKS

REFERENCES

Alias, N.A. and Zainuddin, A.M. (2005) Innovation for Better Teaching and Learning: Adopting the Learning Management System. *Malaysian Online Journal of Instructional Technology*, 2, 27-40

Career & Technical Education (CTE) (<https://www.skillscommons.org/>)

Chemical Engineering (<https://learncheme.com/>)

Chemistry (<https://chemcollective.org/home>)

Computer Science, Programming (Bayes, Python, MATLAB, Java, etc. (<https://greenteapress.com/wp/>))

Definition of Curriculum (<https://hibahnaaz.wordpress.com/tag/tanners-definition-of-curriculum/>) Accessed: 25 October 2022 at 11.35 am

Engineering, Physics (<https://engineertech.org/>)

Geography (<https://www.opengeography.org/>)

Languages (<http://coerll.utexas.edu/coerll/materials>)

Physics, Physical science, Geology, Chemistry, etc. (<https://phet.colorado.edu/>)

Psychology (<https://nobaproject.com/browse-content>)

Tamakloe, E.K., Amedahe, F.K., & Atta, E.T. (1996). Principles & methods of teaching. Accra: Black Mask.

Tanner, D., & Tanner, L. (1980). Curriculum development: Theory into practice. Columbus, OH: Merrill

<https://iastate.pressbooks.pub/oerstarterkit/chapter/copyright/>

<https://oasis.geneseo.edu/>

<https://oer.deepwebaccess.com/oer/desktop/en/search.html>

<https://open.bccampus.ca/browse-our-collection/>

<https://open.umn.edu/opentextbooks>

<https://www.unicef.org/turkiye/en/cyberbullying-what-it-and-how-stop-it>

https://academics.adelphi.edu/files/2015/05/prevent_plagiarism.pdf

<https://cmsw.mit.edu/writing-and-communication-center/resources/teachers/prevent-plagiarism/>

<https://educandghana.net/new-curriculum-for-basic-schools-and-its-associated-terms-for-teachers/>) to download all subjects in the BSC and read the rationale for each subject).

<https://ges.gov.gh/wp-content/uploads/2021/08/GES-CODE-OF-CONDUCT.pdf>.

<https://libraries.wsu.edu/library-instruction/plagiarism>
<https://ntc.gov.gh/wp-content/uploads/2021/12/NTS.pdf>

<https://www.educationcorner.com/learning-theories-in-education/>
<https://www.plagscan.com/en/>
<https://www.readwritethink.org/>
<https://www.utica.edu/academic/Assessment/new/Blooms%20Taxonomy%20-%20Best.pdf>
<https://www.youtube.com/watch?v=XF34-Wu6qWU>

