TEACHING METHODOLOGY

TEACHING AND LEARNING METHODOLOGIES

This unit is designed to help you and other health professionals to become effective teachers who will facilitate learning for their students and patients

This unit is composed of six sections:
Section One: Historical Background, Trends in and Principles of Education in Kenya.
Section Two: Teaching and Learning Processes in the Health Professions.
Section Three: Teaching and Learning Methodologies.
Section Four: Curriculum Design and Development.
Section Five: Instructional Media and Teaching Aids.
Section Six: Evaluation of Student Performance.

Unit Objectives

By the end of this unit you will be able to:

- Outline the historical background and trends of education in Kenya
- Describe the principles of teaching and learning
- Explain the teaching and learning process including the traditional and innovative process
- Describe and apply various teaching and learning methods
- Explain the process and components of curriculum development
- Select and apply appropriate instructional media and teaching aids
- Evaluate learners using appropriate student performance assessment methods

SECTION 1: HISTORICAL BACKGROUND, TRENDS IN AND PRINCIPLES OF EDUCATION IN KENYA

Introduction

Welcome to section one of this unit, which will deal with the historical background, trends in and principles of education in Kenya.

Objectives

By the end of this section you will be able to:

- Outline the historical background of education in Kenya
- Outline the influence of educational trends on nursing education
- Define learning
- Outline the general principles of learning
- List the principles and conditions for adult learning
- Explain the basis for the three groups of theories of learning
- Explain the principles of teaching
- Relate the principles of teaching to learning

The History of Education in Kenya

Education is as old as mankind and learning takes place in various ways. Individuals are at different levels of learning at any given time and education influences the way people behave in different circumstances.

It is important for you to know the level of the learners' education so as to be able to select an appropriate teaching strategy. Education has developed steadily since independence with specific commissions looking at education systems periodically and making recommendations for approval. These are the commissions that recommend changes in the education systems that you see today, like the 8-4-4 system and university education for nurses.

Before the coming of the Europeans to Kenya, most learning took place through the oral narration of events passed down from older generations. Formal learning in schools, including reading and writing, came with the arrival of the Europeans, especially the British, who also introduced the English language. Education was seen as a vehicle for development. Many African learners began to take formal education seriously and many children went to school to be able to learn and communicate effectively.

At independence, the need for educated Kenyans to take over from the colonial authorities became urgent. To provide direction, specific commissions were set up to investigate ways of improving education to fight ignorance, disease and poverty (Ominde Report: 1964). Several other reports were compiled including the Appleton (1995), Angwenyi (1995), and Lloyd and Blane (1996) reports.

There are generally more boys than girls accessing education in Kenya. The government has made concerted efforts to increase enrolment of girls in both primary and secondary schools. The restructuring of secondary schools is highlighted in a number of reports, including those by Mackay (1981), Mungai (1987) and Koech (1999). These reports are available for further reading in your library. Various commissions have also been set up to look into educational matters in relation to the government's vision for the country's socio-economic development.

Influence of Educational Trends on the Development of Nursing Education

Before independence, many people went to traditional healers and herbalists for treatment. The colonialists, through the Imperial British East Africa Company (IBEA), from 1895-1901 were involved in the creation of a medical department. This department was meant to oversee the health care of the members of the colonial community, but eventually spread to encompass colonial employees and members of the wider community.

Influence of Educational Trends on the Development of Nursing Education

In 1927, a form of 'on the job training' in nursing for Africans was put in place. Trainees were taught reading, writing, arithmetic and hygiene (Ndirangu: 1992). Formal training of dressers started in 1929. Following this, several systems emerged. These included:

- Nursing Council Ordinance (1949)
- Kenya Registered Nursing (1952)
- Kenya Enrolled Nursing (1959)
- Kenya Registered Midwives (1965) in Ngara
- The current Kenya Medical Training College in Nairobi

Following the implementation of these courses, the government realised the need to develop a comprehensive and multipurpose nursing programme in order to address primary health care issues. This occurred long before the Alma Ata Declaration of Primary Healthcare in 1978.

Several qualification courses emerged. These included the Kenya Enrolled Community Health Nurse (1966) and the Diploma in Advanced Nursing at Nairobi University (1968). The latter was the government's response to the need for skilled manpower in nursing to take over senior administrative positions after the colonialists had left (Musandu: 1989). Other courses included:

- Kenya Registered Community Health Nurse (1987).
- Bachelor of Science in Nursing at Baraton University (1987).
- Bachelor of Science in Nursing at the University of Nairobi (1992).
- Bachelor of Science in Nursing at Moi University (1998).
- Masters in Medical Education at the Kenya Medical Training College (KMTC), Nairobi (1999) in conjunction with Dundee University.

Dundee University and KMTC prepared nurses in Bachelors and Masters Degrees in nursing through distance learning.

These changes and developments in nursing education were brought by the improving trends of basic education, particularly for women in the country. Finally, continuing education enables health workers to keep abreast of the advancing technology and the thinking or expectations of people and communities.

Conversion courses for ECN/EN/EM to registered level have gone on for many years. With the increase in demand, it was deemed necessary to establish distance learning programmes to enable more people to continue their education while still providing services to their patients.

Principles of Learning and Teaching

Learning

Learning is a process resulting in some modification in the way of thinking, feeling or doing by the learner.
Learning can also be defined as 'a process of acquiring new habits, knowledge and skills which enable students to do something that they could not do before' (Cox and Ewan, 1998)

Example
At a Maternal and Child Health (MCH) clinic, mothers are taught the importance of immunisation. One mother had previously ignored this advice and lost a number of children due to measles, a preventable disease.
She shared her loss with a nurse who encouraged her to attend a child welfare clinic regularly for advice on the care of her baby. A few years later, she was a proud mother of a five-year old enrolled in the preprimary unit.
She was now in the frontline, advising others to get their children immunised.

In the example given, lack of knowledge regarding principles of education led to the problems cited in the case.

Principles

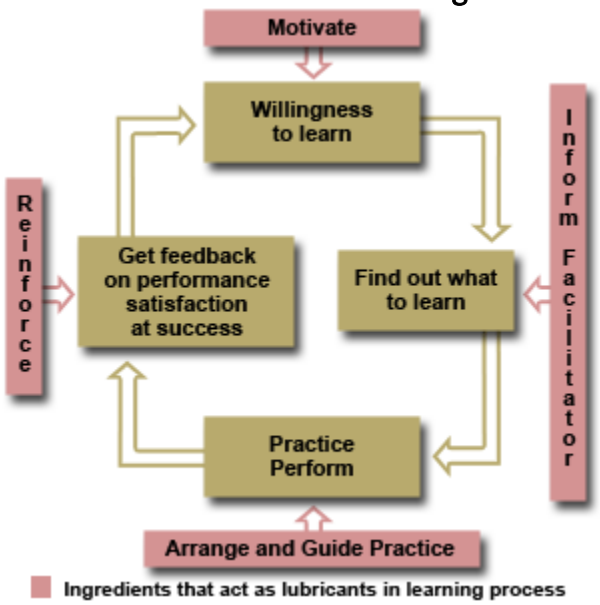
Principles are rules, laws, truth or facts about something. Principles arise as a result of repeated experience, leading to a deeper understanding of ideas on the processes of teaching and learning. These situations and experiences have tested certain theories in the learning environment.
These theories, in turn, have an influence on the development of principles. These hypotheses or theories explain why and how people learn or don't learn.

Principles of learning

There are four ingredients of particular importance in a learning situation. These include motivation, information, practice and feedback. These ingredients act as a lubricant for learning. It has also been pointed out that students learn using the following principles of learning:

- Students learn what is relevant and useful.
- Students learn when the material is presented in a logical, sequential order.
- Students learn when they are actively involved.
- Students learn when they receive feedback on their performance.

Model for the Process of Learning and Functions of Teaching



Characteristics of Learning

Several important characteristics of learning can be observed in a teaching and learning situation. These revolve around a situation that:

- Produces a behaviour change in the learner.
- Leads to change that is gradual, adaptable and selective.
- Results from repetitive practice and experience.
- Is not directly observable, it is abstract.

This means that there are activities the learner must do in order to learn. For example, learners listen to somebody or to a sound. They talk to each other, observe activities, watch a practical example, perform under instructions and are able to repeat an action following a demonstration.
Other important characteristics, also referred to as conditions for learning include the following three as outlined below.

Feedback and Evaluation
Learning is a consequence of experience from repetitive acts. People need to be able to check what they are learning, try it out for themselves and correct mistakes. This is related to motivation and it produces a sense of satisfaction from the lesson when the learner realises that they can also perform.

Practice and Repetition
Learning evolves from competence through repetition. This applies both to skills and knowledge. Learning is something that people do or participate in doing.
As the saying goes, 'practice makes perfect'.

Systematic Approach
Learning is easier if it is organised systematically. It should start from the known to the unknown. As you teach, you should relate the new information to the old information that the learner already knows.

The more the learner participates and feels involved, the more they learn. When learners cooperate and collaborate, they learn better and can help others to learn.

Principles and Conditions for Adult Learning (Andragogy)
Adults learn differently from children. The art of helping adults to learn is called andragogy while the art of helping children to learn is referred to as pedagogy.

Which principles of adult learning can you list?
Principles and conditions for effective adult learning include:

- Individual pace.
- Active learning.
- Integrated learning.
- Cumulative learning.
- Learning for understanding and application of knowledge.
- Relevant and useful learning.
- Interest for learning.
- Progression in learning.
- Open minded, reflective and critical learning.
- Respect for teachers and students.

The Basis and Foundation of the Theories of Learning
There are 3 main schools of thought in the theory of learning.

1. Cognitive Theories
These theories originated from a group of scholars who studied the ways in which knowledge is acquired, stored, correlated and retrieved. Cognitive theorists believe that knowing is a mental process that results in one being aware of a situation or project. Let's now look at several of these theorists in turn.

a) B. S. Bloom

He proposed three domains of learning. These were:

- Affective domain, that is, concerned with attitudes.
- Cognitive domain, that is, concerned with knowledge.
- Psychomotor domain, that is, concerned with muscular and mental activities.

According to Bloom, there are levels of learning that a learner must go through, starting from the basic existing knowledge to the highest level possible, that is, from simple to complex. The teacher should cater for the relevant levels of the learner. Learning skills involve a certain amount of knowledge and appropriate attitudes for their proper performance.

b) D.P. Ausubel

Ausubel emphasised that learning should start from the known to the unknown and from simple to complex. He noted that new information fits into existing knowledge like a key fits into a lock. For example, a child is taught how to cook ugali after learning how to make uji. The initial steps of this process include lighting a fire, measuring an amount of water in a cooking pot and bringing it to boil. This is followed by mixing an amount of flour into a thin paste, adding it to the boiling water and then stirring for a specified time until the uji is ready. In the case of ugali, the process starts in the same way, except that the flour is put directly into the boiling water and stirred constantly into a thick paste. Thus, once the child knows how to prepare uji, they will not need to learn the initial stages of how to bring the water to a boil, but will only need to learn what is different in the preparation of ugali, that is, that the flour is stirred in directly in the boiling water.

c) J. Bruner

Bruner recommended discovery learning. The teacher provides problems for the learners to solve on their own and the resources with which they must do so.
The learner must have adequate information about the resources, that is, their functions and use. This is an innovative approach that reminds the learner they can learn if they want to, and that in problem solving, there are many ways to approach a situation.

2. Behaviorist Theories

Some of the main behaviorists of the 1920s included Thorndike, who looked at learning objectives to direct goal, Pavlov who studied the conditioning reflex, punishment and reinforcement and Watson who was interested in active participation, that is, learning by practice. You will now look at several other theorists in more detail.

a) B.F. Skinner

According to Skinner's theory, it is possible to increase the probability that learning will occur and behaviour will be shaped in the direction the teacher wants, if the behaviour is rewarded. In order to maintain the strength of that behaviour, reinforcement by continued rewards is necessary. To be effective, the reinforcement must be immediate, and should be positive rather than aversive. Successive steps in the learning process should be as small as possible, each successful act being followed by a reward.

Skinner's research was based on a study of the behaviour of rats and pigeons. It has been mainly applied to young children and has not been very successful with adult learners. The process of programmed learning is based on this theory.

b) R. M. Gagne

Gagne categorised learning into different domains so that the different conditions for learning and assessment could be planned accordingly. The domains identified by Gagne are motor skills, verbal information, intellectual skills, cognitive strategies and attitudes. Gagne's approach is a useful one as it helps in planning effective learning experiences. For example, skills cannot be imparted unless students are given the opportunity to practice under supervision and are given feedback on their performance. By identifying these areas, the teacher can plan content for knowledge, skills and attitudes and assess the learners appropriately.

Gagne insisted that skills could not be learnt unless students were given opportunities to practice under supervision. He also added that students must be given feedback on their performance. His contributions are related to what is referred to as cognitive theory.

3. Humanistic and Social Theorists

a) Carl Rogers

Rogers provided a learner-centred view of learning. His main propositions were that:

- All humans have a natural potential and desire to learn.
- Learning occurs when the student perceives relevance related to their own purposes.
- Significant learning is acquired through doing.
- Learning is more effective when the learner is responsible for choosing their direction, discovering resources and formulating problems.
- Most learning is self initiated and involves the whole person, including their feelings as well as intellect.
- Self evaluation is a basic skill that is necessary for effective mature learning.
- Learners should retain a continuing openness to change.

Rogers' approach significantly contributed to adult learning principles.
The use of small groups' discussion, where the teacher is a guide and a friend, rather than leader, has become increasingly popular. It is based on Rogers' philosophy.

b) Abraham Maslow

Traditional teaching and learning has concentrated on force-feeding prescribed knowledge and has neglected to encourage the development of the student as a person with a role in society. According to Maslow, education should help students to look within themselves, and from this self knowledge, develop a set of values which will guide them in their working life.

Maslow emphasises the importance of learning for self enhancement rather than simply for utility. This view is relevant to adult learners who decide to continue with their education out of interest, rather than in order to gain extra degrees or qualifications. Implicit in this approach is the importance of the individual in deciding what to learn and how to learn it.

Conditions That Make the Environment Conducive to Learning

Learning is encouraged in an atmosphere that:

- Encourages people to be active
- Emphasises the personal nature of learning
- Accepts that difference is desirable
- Recognises people's right to make mistakes
- Tolerates imperfection
- Encourages openness of mind and trust in self
- Makes the individual feel respected and accepted
- Facilitates discovery
- Puts emphasis on self evaluation and cooperation
- Permits confrontation

Conditions under which one learns best

You learn best when:

- You know what your goal is.
- You are motivated by the relevance of these goals to your personal/professional needs.
- You work in small tutorial groups.
- You can alternate between personal study and work in a small tutorial group.
- You are in an active situation, with responsibility and a specific objective.
- You are in an enhancing environment (calm, good staff/student relations, competent teaching staff, lively atmosphere).
- You are able to work at your own pace.
- You are able to put what you have just learnt into practice (repetition).

- The learning will help you solve a problem.
- You have opportunities for formative self evaluation and critical review by others (peer criticism).
- You are exposed to different types of stimuli (visual, extended listening summary, review).
- You face the challenge of being evaluated or tested.
- You know how to inform/instruct others.
- You are able to have outside contacts (travel, conferences).

Teaching

Teaching is an interaction between the teacher and the learner under the teacher's supervision in order to bring about expected changes in the learner's behaviour. It is important for you to know the educational level of the learner in order to be able to select the most appropriate method and language for teaching.

Reasons for Teaching

There are many reasons for wanting to teach. You may want to assist learners to:

- Acquire, retain, comprehend and be able to use knowledge.
- Understand, analyse, synthesise and evaluate.
- Achieve skills at a certain level.
- Establish habits which are helpful for their development.
- Develop certain attitudes.

Methods or Approaches used when Teaching

There are several approaches that can be used when teaching. Generally, a teacher talks to learners. However, the teacher should also:

- Talk with learners
- Let the learners talk to each other
- Show learners how to perform certain tasks
- Allow learners to practise and supervise themselves

As you can see, the learner is kept busy or occupied under the supervision of the teacher.

Principles of Teaching

There are several principles of teaching.

1. **Active Learning**

   As a teacher, you should encourage learners to actively participate during teaching and learning sessions. You can do this in many ways:

   - Give students activities to perform.
   - Ask questions.
   - Set problems or projects.
   - Give feedback. Tell learners how well they are doing. Show or tell them how they could have done better.

2. **Clarity**
   Make your teaching as clear as possible. You can do this by speaking audibly, writing neatly and selecting your visual aids carefully and appropriately to convey a meaning to the learner.

3. **Mastery**
   Ensure mastery by continuously assessing the learners as well as assessing them at the end of courses.

4. **Individualise**
   Vary teaching methods. This allows you to take into account the individual differences of the learners.

5. **Motivate**
   Motivate your learners by making sure that your teaching is interesting, relevant and rewarding to the learners.

Planning for Teaching

Planning is very important. It involves 6 key elements. These are:

Decision Making

In decision making, the teacher must make key choices regarding:

- What the learner should learn. This can be done by preparing learning objectives.
- The content, which should be arranged in sequence or progression. Appropriate learning activities and teaching methods should be selected.
- The amount of time to be allocated to different learning activities, assessment procedures and methods to be used.
- Identification of resources needed for teaching. Learners should be informed about the teaching plan.
- Evaluation, which should be carried out both for teaching and learning.

Communication

Communication is a major principle in both teaching and learning. If a teacher cannot communicate, learning becomes a problem.
The teacher can use various methods to ensure effective communication. The teacher can:

- Explaining to and advise the learner
- Help the learners exchange ideas
- Provoke the learners to think
- Use varied teaching techniques
- Detect whether the learners understand and take appropriate measures

Resources

Adequate resources must be provided to ensure effective teaching and learning. The resources must be prepared and obtained before teaching starts. To ensure that resources are available, a teacher can:

- Request all required resources in advance.
- Prepare, select or adapt educational materials (hand outs, exercise books) for the session.
- Arrange learning experiences, especially those that provide opportunities to practice skills, for example, field visits.
- Arrange for learners' attachments and projects.
- Involve other health service personnel in teaching the learner.
- Arrange access to materials, such as libraries, audiovisual programmes and microscopes.

Counseling

Teaching and learning can be difficult for both the teacher and the learner. The teacher should provide support to the learner.
The teacher should:

- Show the learner that they care
- Listen and attempt to understand their student
- Help the learner to identify their options so as to make decisions
- Provide advice and information that helps the learner

Assessment

Teaching and learner assessments must be planned and incorporated into all teaching and learning activities. Assessments guide teachers on what should be taught next and the depth of what should be taught. The teacher can plan for assessments in many ways.
The teacher can:

- Design assessments that measure how much the learner will have learnt.
- Use the assessment to guide the learner's learning.
- Use the assessment to give feedback to the learner.
- Use the assessment to decide whether the learner is competent to provide health care.
- Encourage the learners to self assess and assess others.

Continuing Self Education

Continuing education is vital for all health professionals because of the rapid increase in knowledge as well as the rapid changes in technology that characterise the world today. Learners perceive the teacher as a resource for information, skills and advice.
Therefore, you as a teacher must stay informed through self education. This means that you should know the subject matter that is to be taught and where to find relevant information. You should also know the health care delivery systems and any other relevant resources that are locally available.

The learners should be able to see you as a model for continuing learning.

Learning styles

Learning styles can be classified into 3 learning styles. These are:

- Dependent learning
- Collaborated learning
- Independent learning

Select a teaching style to suit the content that you are going to teach. It should be possible for a teacher to match a learner's style to a trainer's role.

Balance Between Theory and Practice

As a teacher, you must seek to maintain a balance between theory and practice. This will help you to consider the total time available and how it is to be spent in the course. You need to give more time to learning rather than teaching. Skills are best learnt through practice. Practical sessions need more time to reinforce skill learning and application of theory to practice.

Ask yourself the following questions from time to time to chart your progress. How important is this skill to the learner? Is it too complex to be understood? Is it too complex to be mastered?

SECTION 2: TEACHING AND LEARNING PROCESSES IN THE HEALTH PROFESSIONS

Introduction

This section will deal with the teaching and learning processes in the health professions.

Objectives

At the end of this section you will be able to:

- Explain what the teaching and learning process entails.
- Distinguish between traditional and innovative teaching and learning processes.
- Describe and prepare a lesson plan.
- Explain and apply micro teaching skills.
- Explain and apply innovative teaching skills (super skills) appropriate for adult learners.

Traditional Teaching Process

Based on what you have learnt about the learners, the learning environment and the factors that motivate people to learn, you should be able to prepare the content of what you want your learner to know, plus the accompanying skills and attitudes. Before you begin to teach, you will have to identify the topic and content.
This topic may be identified in relation to a problem or a need you may have noted in the community following a community diagnosis. All this information is contained in the curriculum.

A curriculum is developed from the broad objectives of a syllabus.
In this section, you will be introduced to the process that will enable you to select a learning experience, and to properly prepare and deliver it to your learners.
In order for you to be able to go to a classroom, a laboratory, a clinical setting or a field practical site to teach, it is necessary for you to first of all identify the exact area to be taught in a curriculum.

You should define the subject matter or the topic you will teach and the specific objectives and contents to be covered. Depending on the allotted time, you have to make a lesson plan and implement it. This is the process that an effective teacher follows.

Lesson Plan

After you identify your content and accompanying skills and attitudes, you will develop a teaching plan. This plan is also referred to as a lesson plan.

A lesson plan is a written description used in a teaching and learning situation to guide the teacher to systematically present the subject matter in a logical, interrelated and integrated way such that learning is reinforced and enhanced.

Factors to consider when making a lesson plan

Before you plan a lesson ask yourself the following questions:

- Who are your learners?
- What is the learner's entry behaviour? In other words, what is their educational level?
- What is their background? How is it related to what you plan to teach?
- What shall you teach?
- What are your objectives for teaching this topic?
- Which teaching methods shall you choose?
- How best shall you motivate the learners in their own learning?
- In what activities will you engage the learners in order for them to understand the objectives and perform?
- What resources do you need?
- How shall you monitor the progress of your teaching?
- How shall you check that the lesson was a success?

Example of a Lesson Plan	
The following is an outline of a simple lesson plan	
• Topic……	HIV/AIDS
• Time……	9.00-11.00am
• Venue……..	10/01/06
• Student/learners……	Lecture Theatre II
• Activities……	Lecture and Discussion
• Teaching aids……..	By students

TIME	OBJECTIVE	CONTENTS	TEACHING METHOD	TEACHER'S ACTIVITY	STUDENT ACTIVITY	TEACHING AIDS	EVALUATION
9:00-9.05	Overview on previous topics	• Signs of dehydration. • Types dehydration	Lecture/discussion	Ask questions	Ask/answer questions	Chalk board	Question and answer.
9.05-9:20	Describe composition of ORT	• Water • Salt • Sodium chloride • Sugar	Lecture/discussion	Show the students; let each touch the constituents.	▪ Ask questions ▪ Touch constituents.	▪ Water ▪ Sugar ▪ Chalkboard ▪ Flipchart	Question and answer.
9.20-9:45							

You should always assess your teaching during and at the end of the lesson!

Micro Teaching Skills

Effective implementation of a good lesson plan in traditional teaching processes requires the teacher to apply special skills known as micro teaching skills.
This is done by developing specific teaching skills within a small group of students as the audience in a simulated situation, instead of suddenly being faced with a large number of students, which can be threatening.

Micro teaching involves self assessment and recognition of one's weaknesses and strengths. When used with peers, they act as both learners and evaluators of the teacher's performance.

In all institutions of higher learning, there are 6 teaching skills commonly taught. They are referred to as micro teaching skills.

Micro teaching skills consist of:
1. **Set induction**, which is the skill of appropriately introducing a topic or starting a lesson and capturing the learner's attention.
2. **Stimulus variation**, that is, the skill of varying focus movements, speech and content delivery to retain the learner's attention.
3. **Reinforcement**, which is the technique of rewarding students to promote good behaviour and attention.
4. **Questioning**, that is, the technique of using questions to promote interaction with learners to hold their attention.
5. **Use of examples and explanations** that promote learning.
6. **Closure**, that is, helping learners achieve 'mental' closure of a learning session in ways that help them to remember what they learn, for example, by encouraging students to summarise what they have learnt.

Innovative Teaching Processes

In traditional teaching and learning processes, the emphasis is on the teacher and how they facilitate learning for the students. In the innovative educational processes, the burden of learning shifts to the learner. The teacher is transformed into a facilitator.

Innovative teaching & learning process

In the innovative teaching and learning process, the teacher, like in the traditional process, must identify the area to be taught, define the subject and topic as well as the objectives and content to be learnt from a curriculum. These aspects of the teaching and learning process are inescapable for all teachers.

Problem Based Learning

Problem-based learning (PBL) is a curriculum development and delivery system that recognises the need to develop problem solving skills as well as the necessity of helping students to acquire necessary knowledge and skills (Stephen et al 1993).

For innovative teaching learning methods such as Problem Based Learning (PBL), the teacher must, therefore, develop tutorial problems which will be used to guide the achievement of the objectives as stated in the curriculum. The teacher will also produce a booklet, which contains those problems, as they will be used in teaching the course. In addition, the teacher will also develop a tutor guide to be used by the facilitator of the course, which must contain the solutions and useful tips for guiding the learner.
Innovative learning processes are best described after the tutorial booklet and tutor guides have been developed. After these have been developed, a tutor can then provide a copy of the booklet to each student and have a copy of the booklet and tutor guide for themselves.
Innovative processes are, therefore, more difficult during preparation but easier during tutorials and actual course delivery. Once in the tutorial room, the tutor can follow any one of the following processes to conduct the tutorial with the students.

The Three Step PBL Tutorial (ABC) Process

In the three step PBL tutorial process, students have to go through the following three steps with the guidance of a tutor.

Tutorial 1

Read through the problem, define terms, clarify concept, analyse problem and set learning objectives. Solve any problem (if possible at this point), for example, on a Monday. Students identify their own learning objectives (SOLO).

Self Directed Learning (SDL)

Self Directed Learning (SDL) means that the students study and look for information on their own. They may do this on Tuesday, Wednesday and Thursday in preparation for the tutorial session on Friday.

Tutorial 2

This is the second tutorial during which students do the presentation of gathered information, solution of problems and synthesis. This might, for example, take place on a Friday.

The Seven Step PBL Tutorial Process

In the seven steps PBL tutorial process, students follow these steps.

Step One: Clarify terms and concepts not readily comprehensible
Step Two: Define the problem
Step Three: Analyse the problem
Step Four: Draw a systematic inventory of the explanations inferred in step three
Step Five: Formulate learning objectives
Step Six: Collect additional information outside the group (SDL)
Step Seven: Synthesise and test the newly acquired information

The Ten Step PBL Tutorial Process

There is also a ten step PBL process.
Sometimes, it is not possible to conclude a tutorial in the three or the seven steps. In such cases, students may have to follow the ten step PBL tutorial process, which consists of the following steps:

Step One Clarify terms and concepts not readily comprehensible
Step Two Define the problem
Step Three Analyse the problem
Step Four Draw a systematic inventory of the explanations inferred in step three
Step Five Formulate learning objectives
Step Six Collect additional information outside the group (SDL)
Step Seven Synthesise and test the newly acquired information
Step Eight Draw inventory of unresolved issues in groups

Step Nine Second self directed learning (SDL)
Step Ten Meet again and synthesise the newly acquired information

The Fifteen Step PBL Process

The fifteen step PBL process was developed and used at the Moi University, faculty of health sciences. It is organised in the following manner:

First Tutorial

Step 1 Group organisation : Introductions.
: Selection of chairman.
: Selection of scribe.
Step 2 Reading through the problem (aloud).
Step 3 Identifying the problem.
Step 4 Defining the problem.
Step 5 Raising learning issues.
Step 6 Resolving issues based on prior knowledge.
Step 7 Organisation of the unresolved issues.
Step 8 Developing learning objectives from the organised, unresolved issues.

First Self Directed Learning (SDL)

Step 9 Information gathering from all available resources.
Step 10 Students meeting alone, under their chairman, to collate information and identify the objectives based on information that is so far not available.

Second Tutorial

Step 11 Discussion of available information to check for correctness and completeness.
Step 12 Identification of objectives so far not addressed, with a view to identifying the resources from which to obtain information.

Second SDL Period

Step 13 Information gathering on difficult objectives.
Step 14 Final collation of information and solving of the problem (students meeting alone under their chairman).
Step 15 Identifying areas that are difficult to understand and seeking help, for example, overview (if necessary) or seminar.

Of all these various processes, the major steps are encompassed in the three step process. This simply presents a problem to the learner, gives them time to do self directed study and enables them to discover and present their solutions. All of this is done with the help of the tutor.

Super Skills of Innovative Education

Do you remember the six micro teaching skills covered earlier in relation to traditional teaching? You will now cover modern innovative teaching and learning skills. They are commonly referred to as super skills and are most appropriate for adult learners. Super skills, which bear the acronym FAGIPW, emphasise that a tutor ought to:

Super Skills of Innovative Education

Thus, the tutor should not simply stand up and lecture their students for hours. They should enable the students to study and, during tutorials, should freely participate in the students' learning under
their tutorship.

The traditional and innovative teaching and learning processes thus call for the use of different skills. An effective teacher should be aware of them.

SECTION 3: TEACHING AND LEARNING METHODOLOGIES

Introduction

This section deals with teaching and learning methods you can use to ensure effective learning for your students and patients.

Objectives

By the end of this section you will be able to:

- Describe the various teaching and learning methods.
- State the advantages and disadvantages of the teaching and learning methods.
- Explain how knowledge, skills and attitudes can be taught
- Outline clinical teaching.
- Distinguish traditional from innovative teaching and learning methods.
- Outline the changing roles of tutors and students in innovative teaching and learning methods.

Teaching and Learning Methods

Traditional Teaching Methods

Traditional methods include among others lectures, demonstrations, practicals, role-plays, fieldwork, clinicals, projects and small group discussions. You will look at the innovative methods later in greater detail. For now, you will start with the traditional methods.

Practicals

A practical lesson is where students perform tasks. These practicals could also be performed in their future working areas. Practicals have many advantages and a few disadvantages.

Advantages

- It provides a better understanding of the lecture content
- It leads to creativity on the part of the student
- It is effective for stimulating independent thought and changing attitudes
- It is a good way of achieving a desired level of competence for the student
- It provides immediate feedback on the performance of the teacher
- It provides for the individual student to be helped by the teacher
- It provides an opportunity for development
- Interpersonal relationships between teachers and students

Disadvantages

- It is not an economical way of using manpower and resources.
- It takes time to carry out practical work.
- It needs administrative staff for preparation and maintenance of materials.
- It requires special accommodation arrangements for students, that is, closer to the area where the practical will take place.

Lecture Method

A lecture is a lesson given orally by a teacher.

Advantages

- It is economical in the use of time
- Appropriate for large groups
- Use of a single lecture theatre
- Allows for the use of experts in delivery of content by expert

Disadvantages

- Some students may be left behind
- Poor student involvement
- Impersonal
- No respect for individual pace
- Does not help students learn how to solve problems

Field Visit

Learners are taken to the actual area where activities are taking place, for example, a factory, school, water treatment plant so that they are able to see and relate to what they have learnt on the specific topic. The field visit may include some practicals.

Advantages

- It provides the actual experience. Some things cannot be learnt in school.
- Students can observe and participate in the use of theory.
- Provides for creative and independent thought on the part of the student.
- Provides an opportunity for developing interpersonal relationships between students, teachers and field staff.
- It can help promote competence.
- Provides time for questions and discussion.
- Information comes from multiple sources.

Disadvantages

- It is not an economical way of using manpower and resources.
- It creates administrative problems in arranging programmes.
- It may confuse students because there is usually a wide gap between theory and practice.
- If it is not well supervised, learning potential may be lost and it may turn into a social event.

Demonstration

A specific learning task is performed by the teacher while students observe and learn.
This method is mainly used to show learners how to perform. The demonstration should be repeated by the learners to ensure that they have understood. This method has several advantages and disadvantages.

Advantages

- It provides an economical way of using manpower and materials.
- It provides audio-visual observation of the subject.
- Students understand the subject matter better after seeing a demonstration.
- It may be a good means of teaching where resources are readily available.
- It provides a way of pacing a student's way of learning.
- It can provide a wide range of knowledge in a limited time.

Disadvantages

- It is a one-way learning process from instructor to students.
- Students are just passive observers as it may not provide for activity on the part of the students.
- It may not provide the necessary repetition depending on the individual's pace of learning.
- It has little regard for students' individual differences.
- There is no immediate feedback to the instructor on what has been learnt.
- It is relatively ineffective for achieving competence unless students are given opportunities to practise.

Individual Learning

There are several advantages and disadvantages to the process of individual learning.

Advantages

- Students can work at their own individual pace.
- Students can learn at the time and place of their choice.
- Students can request teaching whenever necessary.
- Students can omit parts they already know.
- Teachers can prepare a standardised body of information.
- The method can provide for creativity and independent thought on the part of the student.
- It can help achieve the desired competence.
- It can provide immediate feedback to the teacher.
- Students' performance does not decline with time.
- Students learn how to express themselves clearly.

Disadvantages

- It is an uneconomical way of using resources.
- The programmed materials have to be maintained.

- It needs administrative staff.
- Information usually comes from a single source and may lead to a one way learning process.
- No teamwork and interpersonal relationships between students.
- It takes time to prepare materials for individual learning.
- It has no regard for the students' individual differences.

Seminar or Workshop

A seminar is a session headed by a teacher, a trained senior student or an enthusiastic student from the class, where an assigned subject is discussed. The subject has to be prepared beforehand and presented by the student. The other students will then discuss, criticise and comment on the material presented. The teacher should be available to be consulted by the group. This is important as the students may need to confirm factual information with the teacher.

Advantages

- It promotes interpersonal relationships between students.
- Students can learn a lot from each other.
- It allows for teamwork and personal flexibility.
- Teachers can encourage full participation by all students.
- It provides creativity and independent thought on the part of students.
- It provides immediate feedback of knowledge gained.
- It facilitates exchange of ideas.
- It trains students to work independently in preparing papers for presentation.
- It provides greater control of communication between students and teachers.

Disadvantages

- It is not an economical way of using manpower unless senior students act as supervisors and teachers are only called in as consultants.
- It is too slow to cover more than a limited amount of subject matter.
- It may suffer from interruptions.
- It cannot provide the repetition necessary for individual needs.

Tutorial

A tutorial is a discussion session between a teacher and a small number of students.

The smaller the number of students, the more effective the tutorial is. The number of students in a tutorial should not be more than eight. However, the best teacher to student ratio is 1:1.

A tutorial must not be a mini-lecture given by the teacher. The teacher should talk as little as possible and encourage the students to think and learn independently.

Advantages

- Communication of knowledge is two-way between teacher and students.

- It provides personal contact between students and teachers and provides activity for the student.
- Teachers can give full attention to individual differences between students.
- It provides an opportunity for detailed discussion of students' work.
- It provides immediate feedback for both teacher and student.
- It encourages the creativity of the learner, including the application of the knowledge and problem solving.
- The learner tends to regard knowledge as an open system. It is relatively effective in changing attitudes.
- It provides a better understanding of the lectures.

Disadvantages

- It is not an economical way of using manpower
- It moves too slowly and covers only limited subject matter
- Students need to do some work on the subject beforehand
- It cannot provide the repetion necessary depending on the individual
- The instructor or an active student may dominate it
- It is liable to interruptions

Project

A project is an assignment given to an individual learner, a pair of learners or a group of learners in which they carry out a piece of independent work on a particular topic. The learners have to organise the assignment and prepare a written report to submit to the teacher.
A project may be relatively simple, for example, to be carried out within a week, or it may be more complex, for example, to be carried out over a period of several months or even a year.

Advantages

- It provides activities and calls for creativity on the part of the student.
- It encourages initiative in the student.
- It encourages learners to be independent.
- Learners can work at their own pace.
- It may provide opportunities for interpersonal relationships between learners and people from other departments.
- The results of a project provide feedback of students' progress to the teacher.

Disadvantages

- It takes time to carry out a project.
- Learners may find that the project adds too much to their workload.
- It creates administrative problems in arranging programmes.
- Unless sufficient time is allowed, the learners may produce a superficial report.

Small Group Discussion

Small group discussion is an appropriate technique for encouraging learners to analyse, synthesise and evaluate the knowledge that they acquire (higher order cognitive skills).

For example, they may choose to look into the causes of a disease or a custom practised within a community. A group discussion can be instructor-centred or learner-centred (Refer to the unit on Community Diagnosis for Focus Group Discussion).

Advantages

- Allows sharing of resources within the group, that is, there is shared commitment to learning. Learners help each other with difficult points.
- Provides learners with opportunities to interact with the instructor and fellow learners.
- Learners learn to evaluate the logic of and the evidence for their own and other's positions, that is, learning is through self expression and intercommunication.
- Allows learners to become active participants in the learning process rather than passive recipients of information from one source. The work motivates students to learn more.
- Provides an opportunity for the synthesis of varied experiences and data derived from lectures, laboratories, clinics and readings. The student grasps the idea of self learning without fear of failure.

Disadvantages

- Dominance of vocal and aggressive members over others in a group may hinder equal growth of all members in the learning process.
- A group discussion does not guarantee that an objective will be accomplished within a fixed time.
- The members of the group must bring to the discussion a body of information that is sufficiently broad and deep.
- Lack of planning by the group leader or the group itself concerning the agenda and specific learning objectives.
- As the size of the group increases, the efficiency and effectiveness of the method will decrease.

Simulation

This instruction method is used to enable learners to develop skills in dealing with 'real life' situations and 'problems' in a classroom setting. The use of a skills lab such as the one at the Kenya Medical Training College and the practical rooms in other centres are examples. You will have gone through objective-structured practical examination during your training and will agree that it is better to make mistakes in these practical simulations than in the real setting with real patients. There are two methods of simulation - the simulation game and simulators.

Advantages

- Simulation can create the link between the training situation and the real life situation. The more similar the stimuli in the situations, the more positive transfer there is from one to the other.
- Simulations provide a responsive environment. There is always some immediate feedback.
- Simulation is a relatively cheap method and often provides experience in a low cost model for a high cost environment.
- Simulation can minimise time. Problems of real life can be programmed in advance and dealt with over a variable length of time. The opportunity to confront real problems in hypothetical settings means subsequent problems cause less alarm, greater confidence, and less harm to all involved.
- Simulation allows learners to make their first serious mistakes in a simulated situation rather than in a real one.

Disadvantages

- Simulation techniques cannot simulate all dimensions of a real life situation.
- The planning and development time required for a simulation technique may prove to be costly.

The usefulness of simulation depends on its accuracy or true reflection of reality.

Rationale for Choosing Teaching and Learning Methods

Guideposts to Choosing an Appropriate Method

There are few guideposts to choosing an appropriate method.

Usually, the choice is primarily based on the lesson objectives. The objective is what you want your learner to be able to do at the end of the session.

The next step in choosing a teaching and learning method is to consider its practicality.
How much time does it require?
Where will the teaching take place?
How many learners are involved?
At what level are the learners?

Finally, you should gather the resources required to deliver the lesson. Whatever method you choose, keep in mind that effective learning should always be fun. By gathering resources in advance, you will be sure that your simulators are functioning well and can be manipulated to suit the learning environment.

Teaching Skills

There are different types of teaching skills. Cognitive skills refer to knowledge application, while thinking skills, refer to the ability to make decisions, choose appropriate alternatives and exercise caution. Finally, psychomotor skills relate to the use of the hands, the ability to do things or perform procedures.
There are several methods used for teaching skills. These include:

- Describing the skill.
- Explaining the reason and stages in performing it.
- Demonstrating the skill.
- Performing the skill correctly with an explanation of what you, as the expert, are doing.

When teaching skills, practice is essential!

Encourage the learner to practise the skill through projects, simulations, job experience, fieldwork, workshops, laboratory case studies, ward rotation and apprenticeship.

Innovative Teaching and Learning Methods

All of the methods discussed in the previous section fall in the category of what are referred to as traditional teaching methods. Some of these methods, however, have been improved in implementation to be referred to as modern or innovative methods. These include:

- Problem Based Learning (PBL).
- Self Directed Learning (SDL).
- Small Group Tutorial (SGT).
- Community Based Education and Service (COBES).
- Computer Aided Education (CAE).
- Student-centred, Problem-Based, Integrated, Community-Oriented, Electives and Systematic (SPICES).

Of all the innovative methods mentioned, the best known is probably PBL. In this method, instead of hours of lectures and demonstrations by the teacher, a problem is used to guide student learning using the innovative teaching and learning process (steps 3, 7, 10, 15) previously outlined. All that is needed to guide learning is a tutorial problem. Students then follow the steps as guided by their tutor and achieve the intended learning outcomes.

Tutorial Problem

What does a 'problem' in PBL mean?

A problem may mean any of the following:

- A problem that is clinical, theoretical, research based or related to real life.
- An idea.
- A situation.
- An event.

- An outbreak of disease or disaster.
- A newspaper cutting.
- A list of objectives.

Innovative methods are often used in combination with other methods to facilitate student learning. The SPICES method, which is also a curriculum development strategy, has several characteristics that distinguish it from traditional teaching and learning methods as illustrated in the following table.

Characteristics of the SPICES Method	
'SPICES' Approach Vs	Traditional Approach
Student centred	Teacher centred
Problem based	Information gathering
Integrated	Discipline based
Community oriented	Hospital based
Electives	Standard programme
Systematic	Apprenticeship based or opportunistic

The main advantage of the innovative methods is that the responsibility for learning is placed on the learner's shoulders. In the process of learning, the learner develops many skills, which gradually transform them into an independent learner. The learning skills they develop include:

- Problem solving skills
- Communication skills
- Clinical reasoning skills
- Self directed learning skills
- Emotional/social support skills
- Thinking skills
- Team work
- Continuing education skills

The only disadvantages of innovative educational methods are their resource-intensive nature and the need to have many tutorial rooms to accommodate the small groups of students instead of the traditional huge lecture hall.

Teaching Attitudes

Can attitudes be taught?

Attitudes are rather vague things and are hard to define or explain. They are influenced by one's values and feelings. Despite these problems, you have to try to teach your learners how to acquire the right attitudes to enable them to assist and care for patients.

An attitude is a tendency to behave or think in a certain way, for example, having respect for ideas that other people have. Certain attitudes are formed or changed during training. Attitudes can be taught by providing information to shape ideas through lectures, films, stories, providing live examples and so on. In the latter, the teacher acts as a model by letting the learner take part in a role-play.

- Kindness
- Willingness
- Accuracy
- Empathy
- Dedication
- Honesty
- Patience
- Respectfulness
- Gentleness

There are several ways in which you can provide experiences for learners to develop the right attitudes. For example, seeing a patient suffering from a particular disease touches the feelings of the learner, who may feel sorry for the patient, and may later internalise the situation by imagining themselves in a similar situation. The learner makes a resolution to avoid such a situation and learns how to advise and react towards such patients with empathy.

You can also organise small group discussions with seven to twelve participants with specific objectives. You can also provide role-play exercises where learners act the part of different people or patients to reveal some of the feelings involved.
In summary, you can best teach attitudes by providing:

- Information to shape attitudes, for example, facts about AIDS.
- Examples or models to shape attitudes (advertising goal).
- Experience to shape attitudes, for example, opportunities to work in a hospital.
- Discussion to shape attitude, for instance, by sharing your own opinions.
- Role plays, for example, playing the role of doctor, nurse or patient.

The Role of the Tutor in the PBL Process

In the innovative teaching and learning processes, the tutor plays even more roles than the teachers in the traditional teaching methods. These roles include having to:

- Establish rapport.
- Explain goals, objectives and functions.
- Explain procedures and roles of students and tutor in PBL.
- Focus attention.
- Keep the ball rolling.
- Encourage active participation.Referring back questions, comments, suggestions to group.

- Intervene in conflict situations.
- Reinforce group discussions.
- Control the group.
- Distribute and redirect questions.
- Probe further, if necessary.
- Encourage analysis, synthesis and evaluation of problem (data).
- Encourage students to develop qualities of individuals in group.

More roles

- Intervene to keep the group and the discussion on track and stimulate thinking by encouraging hypothesising.
- Maintain continuity and focus.
- Encourage students to review and redefine explanations.
- Encourage students to make connections, that is, link concepts and principals with processes and so on.
- Encourage evaluation of achievements.
- Encourage students to summarise discussions.
- Encourage students to act as a change agent in the group.
- Give solutions.
- Process helper.
- Resource linker.
- Catalyst.
- Encourage group interaction, reinforcements and agreement.
- Act as gate keeper.
- Assist students to go through the process of PBL.
- Assist students to understand their abilities and limitations.

The Role of the Student in the PBL Process

The student in the PBL process plays more roles than the student in the traditional teaching and learning methods. Such roles include:

- Active participation, which includes listening, contribution to the discussion and asking questions.
- Carrying out analysis, synthesis and evaluation of the whole learning process.
- Making connections, linking concepts and applying principles.
- Reviewing and redefining explanations.
- Evaluating achievements.
- Summarising at various stages.
- Acting as a change agent, that is, as a solution giver, process helper, resource linker and catalyst.

Clinical Teaching

Clinical teaching is teaching in the clinical or practical setting, similar to the environment within which the learner will practice in future.

What is nursing?

The answer to this question has been provided elsewhere in this module. Earlier on, you identified that your learner is going to be a nurse. Since you have already covered the methods of teaching, you will now highlight the issues that affect the quality of work (nursing) in this section.

Virginia Henderson (1958) states that 'the unique function of the nurse is to assist the individual (sick or well), in the performance of those activities contributing to health, to recovery (or to a peaceful death) that they would perform unaided if they had the necessary strength, will or knowledge.'

Essentially, nursing is nurturing people back to optimal health. It involves specific tasks or skills each of which can be split up into specific activities to complete a task. The task or skill has content, information or knowledge that explains its purpose, that is, what it is for? and how it should be done?
In clinical teaching, you want your learner to put that knowledge into action. You want your student to get involved with the patient. Involvement brings in emotions and feelings. Nursing is 'caring'. It is here that you must teach the learner to empathise. They can nurture and care without getting carried away by the effects of the illness or situation through empathising. Empathising helps the learner to get involved and yet stand apart enough to carry out the necessary professional activities.

No learning can take place until certain basic needs have been met. You need to ensure that the physical needs of the learner have been met for them to concentrate. For example, if the learner is wearing uncomfortable shoes on duty, you need to advise them of the importance of wearing comfortable shoes.
You may offer alternative solutions or refer the student to somebody who can help them directly. You may not be in a position to do much but the fact that you showed concern will move your learner. The learner also needs to feel that they belong, which is a good way to boost self-esteem. The learner needs to feel welcome. It is important that you establish a good working relationship. A warm smile and a few encouraging words will go a long way to make your student feel settled.
When the basic needs mentioned previously get fulfilled, your learner will want to learn at a higher level and exercise mastery of the skills. At this point, you should find out the relevant learning situations available in the clinical setting. Give the students the necessary support to remain successful and encourage them to look for other learning situations on their own.
While nursing, the nurse shares the triumphs, sense of achievement, and sadness of the bereaved who have lost a loved one, or the amputee, or the young with a terminal disease.

Nursing is giving hope and support toward recovery or relief from discomfort, or toward a peaceful, dignified death.
Hope and support will help the patient regain confidence and self reliance.
Throughout this process, confidentiality must be maintained to enhance the trust of the patient.
As the learner carries out procedures, they need to learn how to contain personal negative feelings, for example, contempt, revulsion of unpleasant sights or aversion.
Above all, the learner must learn how to maintain their integrity and the professional code of ethics and etiquette (see module one of this programme for more information).
This is necessary because the student will be learning how to protect their patient from malpractice and negligence.

How do you ensure that you are providing quality nursing care?

Mastery of the theory is important because it gives you the foundation.
Scientific knowledge adds appropriate technical skills and encourages you to develop the right attitudes. The result is the development of sound clinical judgment, which is the sign of an experienced nurse.

Role of a Clinical Teacher

As you plan to teach in a clinical setting, ask yourself the following questions:

- Is the learner performing safely, kindly and with confidence?
- Is the learner aware of the reason for each procedure?
- Is the patient the focus of the procedure?
- Is the demonstration enabling the learner to link with the theory covered earlier?
-

As a clinical teacher, you therefore should be:

- A skilled, experienced nurse concerned with the maintenance and improvement of standards of patient care.
- Concerned to help your learner to develop their potential as a nurse.
- Able to gain satisfaction from caring for patients.
- Able to gain satisfaction from teaching, especially individuals and small groups.
- Keen to create a favourable environment for learning.
- Alert to the opportunities available for facilitating learning in the clinical situation
- A model for your learner.

SECTION 4: CURRICULUM DESIGN AND DEVELOPMENT

Introduction

Curriculum Design and Development
This section focuses on curriculum design and development.

Objectives
By the end of this section you will be able to:
- Define a curriculum
- Describe the components of a curriculum
- Explain factors that influence curriculum development
- Describe three approaches to curriculum development
- Outline the process of curriculum development

Curriculum
A curriculum is a description of all that takes place in an educational institution from the first to the last day of training. A curriculum has been likened to a racecourse and it entails all the activities and the events, which take place from the first event to the very last. A curriculum is also the document in which all the activities, transactions and the events of a training programme are described.

A curriculum can also be defined as a programme of study.

Components of the Curriculum
The following are important components of a curriculum.

a) **A Statement of Justification**
Gives the justification/rationale and philosophy of the training programme and why the programme is required.

b) **Resources**
An outline of the physical, administrative and financial requirements for the course. It is also a description of the minimal facilities in terms of buildings, equipment and personnel.

c) **Entry Requirements**
Description of the entry requirements for the students and methods of selection.

d) **Educational Goals and Objectives**
Describes the goals and educational objectives of the course

e) **Content**
This is what will be covered in a course according to the stated objectives.

f) **Learning Experiences**
Are intended to be descriptions of the teaching and learning methods to be employed during the educational programme.

g) **Programme**
Outlines a logical sequence of events.

h) **Duration**
Specification of how long each unit or learning block should last.

i) **Assessment**
Outlines methods of continuous evaluation, final certification, remedial activities and referral of failed candidates.

j) **Course Descriptions**
Highlights the title, unit, course objectives, course content and code for each course taught in the programme.

Factors Influencing the Development of a Curriculum

There are several factors that influence curriculum development.

Academic Factors

The teachers who teach the main subjects of a discipline often borrow from their past experiences and merge them with the current trends of the discipline. For example, you now have more nurse graduates who are prepared in advanced nursing practices and you can introduce content that was not included before. Thus, theories of nursing, trends, research and so on that were only taught in higher nursing programmes at university level previously are now incorporated into your curriculum. The new content is designed to make you a more effective practitioner in the provision of quality health care.

Social Factors

What is taught has to reflect what is current within the contemporary society. This means it has to be relevant to the needs of the local people socially and culturally. For example, with the advent of AIDS, this new topic has had to be included in the content. The topic bears a lot of importance to human existence and is emphasised in all branches of health care and development.

Economic Factors

The cost of implementation of a curriculum can determine the type of health worker trained by a given country. In developing countries, staff are often trained at a lower level of education in skills that are usually taught to university graduates in highly industrialised countries. This is because in developing countries, university education adds

a cost burden to the limited resources. Thus, for example, midwives in developing countries carry out life saving measures that are left for experts in industrialised countries.

Political Factors

Politicians or political investors can influence the numbers to be trained and even the level of training. For instance, the introduction of the quota system in the Kenyan basic education system was politically motivated with the aim that all ethnic groups might receive equal attention.

This, therefore, implies that an individual does not develop a curriculum.
It is a cooperative process in which many interested parties contribute.
Consultations must be made where possible from all people who might be involved in the development of your health curriculum. These are the people who, in one way or another, exert influence directly or indirectly or decide what activities should be involved, including the style of implementation of the curriculum. These people fall into two categories: internal and external participants. You will now look at the first category.

Internal Participants in Curriculum Development

Internal participants in curriculum development include individuals from professional associations, ministries of health and education, boards of examinations, administrators of the training institutions, teachers and students. This group of participants is, therefore, called internal because they are directly involved in the curriculum and so have a greater impact on its development. They develop the curriculum, teach it and evaluate the curriculum and the students.

External Participants in Curriculum Development

The external participants constitute the second category. Although are not directly involved in curriculum development, they are either beneficiaries of the product, service or provide resources to facilitate its implementation or may liase within the institution in various ways. As such, they can easily influence decisions made by the internal group. This group comprises the community, business, industry and non governmental organisations. When consulted properly, these two groups ought to produce a curriculum that enables the desired change in health care services.

Major Approaches to Curriculum Development

There are several approaches to curriculum development.

Subject-centred Approach

This is carried out by subject specialists, who determine the subdivision of content and the methods and timing of instruction.

Integrated Approach
This approach attempts to integrate or combine in a meaningful way, disciplined knowledge to impact wholesome learning for student application.

Competency-based Approach
It aims at identifying professional competencies required and the teaching required to achieve these competencies.

These approaches, as outlined by Ngatia (Afya Journal 1986) have advantages and disadvantages. The subject-centred approach, for instance, emphasises the acquisition of disciplined knowledge rather than its application. In the integrated approach, knowledge can be wholesome and meaningful but integration can fall short of adequate vertical and horizontal integration. The competency-based approach is preferred for professional training by most curriculum developers.

Developing a Curriculum
Throughout modules one and three and particularly in units one and two of module three, you looked at the community health profile needed to identify community health needs. The steps included conducting a survey or community diagnosis to specify the community's priority needs. After data collection, the next step was to organise the information into a report to give feedback to relevant groups for a follow up health action in response to the identified needs.

Your next task is to describe what activities the graduates of the programme will perform with respect to meeting the required health needs. This should be summarised in a job description.

The next step is to determine what knowledge, attitude and skills graduates will need to acquire to enable them perform those tasks. This is known as task analysis.
Very briefly, a curriculum, therefore, must contain the following components:

- Objectives
- Content
- Teaching methods
- Assessments
- Entry requirements
- Programme schedule

What other components would you add to the above list?
Mutema, Kangethe and Naweya (1999) outlined a simple ten-step method of developing a competency-based curriculum that has been found useful in the development of any curriculum.

The Process of Developing Competency-Based Curricula

Ten Steps to Competency-Based Curriculum Development	
Step 1	Identification of health problems or needs.
Step 2	Identification of professional roles and functions.
Step 3	Performing task analysis on professional roles and functions.
Step 4	Development of educational goals and objectives on the basis of professional functions and task analysis.
Step 5	Identification and selection of subject matter or content to be learnt.
Step 6	Identification of teaching and learning methods.
Step 7	Identification or selection of learning resources.
Step 8	Identification of assessment tools to determine learner performance.
Step 9	Curriculum implementation.
Step 10	Curriculum review and change.

SECTION 5: INSTRUCTIONAL MEDIA/ TEACHING AIDS

Introduction

This section focuses on instructional media or teaching aids, which are used to enhance learning.

Objectives

By the end of this section, you will be able to:

- Describe projected and non-projected teaching aids
- Outline the major advantages and disadvantages of teaching aids
- Select appropriate teaching and learning sessions
- Take appropriate care of teaching aids

Learning from the Environment

What senses do we use to learn from our environment?

You learn more effectively if you use more than one of your senses. The more senses you use, the more effective your learning becomes. The senses are:

- Sight – visual.
- Hearing – audio.
- Smell – nasal.
- Taste – taste.
- Touch – tactile.
-

Modern technology enables learners to combine the use of several senses. This is achieved through the use of various types of teaching aids. There are two kinds of aids:

- Projected aids
- Non projected aids

Projected Aids

Projected aids include:

- Overhead transparency (projector).
- Kaleidoscopes.
- Films.
- Video cassettes.
- Slides.

These are powerful tools because they bring real situations close to the student. It is important that you obtain appropriate aids. However, it should be noted that they are expensive and can be difficult to maintain. Because the overhead projector is relatively cheap and easy to maintain, it is described here in detail to encourage its use in training institutions.

The Overhead Projector

This is one of the most commonly used teaching aids.
The overhead projector (OHP) projects transparencies from a horizontal table via a

prism or mirror and a lens. A bright image appears on a screen behind the teacher. The set up of the screen depends on the type of room and the size of the audience.
There are two possibilities of projection. These are:

- Projection from behind.
- Projection to the side (better viewing).

When lecturing, stand to the right or left of the projector so that you can easily point out the important areas that you want the learner to grasp. You can also view what the learner is seeing simultaneously. You are advised to expose only what you are discussing and not the whole transparency so that the learners can concentrate and take down important points. In this way, the rest of the presentation will not distract learners.

There are several points you should remember when preparing transparencies:

- Do not write too near the edge or you might lose half of the image. Leave at least an inch of margin all round.
- For more complex drawings, prepare a pencil sketch then lay the transparency over the sketch and copy onto the transparency. You can also copy a diagram from a book.
- Lettering should not be too small, about 4mm (an eighth of an inch).
- A transparency should convey one theme. Put as much information as necessary but as little as possible on a transparency. Ensure clarity and impact.
- Leave room for future alterations.
- Jot down your lecture notes on the frame of the (OHP).
- Keep the content down to ten lines with ten words per line.
- When masking, use thin paper. This ensures that the lecturer sees the whole transparency but the audience only the information that has been revealed.
- Overlays - do not use more than six build-ups or brightness will be impaired.
- Store your transparencies with care. Avoid moisture and dirt.

There are several advantages of using overhead projectors.
These include:

- You are able to face the classroom and point out features appearing on the screen easily using a pointer.
- It may not be necessary to darken the room.
- You are able to project a wide variety of materials.
- Transparencies can be used as an illuminated blackboard during the lesson. Alternatively, they can be put on top of each other showing stages of development of an idea or structure.
- You can easily trace diagrams and drawings if you require them.
- You increase your learner's curiosity by using multiple colours on the transparencies both permanent and temporarily depending on the pens and ink used.
- An overhead projector, therefore, has endless possibilities in the hands of a resourceful teacher and can be used at all levels of education.

- However, there are several disadvantages of using an OHP.
  The teacher must not stand in front of the image. The acetate sheets are expensive to obtain, but spoilt and cleaned x-ray film is a useful alternative. You should get a transparent, slightly bluish sheet that can be used in the same way as transparent acetate sheets.

Special felt pens are used for writing on the transparent sheets. If they are difficult to obtain, the glass pencils used in laboratories are a substitute. Erase with water or with spirit for semi-permanent ink.

For care and maintenance of the overhead projector and transparencies, take the following steps:

- After finishing a demonstration, do not remove the wire plug from the socket but switch off the lamp and keep the fan running until the bulb has cooled down (there is a thermostat fitted in most types of OHP).
- Keep lenses and mirrors free of dirt.
- Keep a spare bulb in stock at all times.
- Store semi permanent transparencies together with master copies of handouts in a file with the unit block or subject concerned They can then be found easily and used again the following year.

The Liquefied Crystal Display (LCD) Projector

Another projecting aid is the LCD projector and computer. In this system, material is typed into the computer and projected onto a screen.

Non Projected Aids

Non projected aids are aids that you can find within your environment. You can select these well in advance of the lesson and pre-test them before classroom use. These include the chalkboard, pictures or cartoons, flipcharts, posters, handouts and flannel boards.

The Chalkboard

The chalkboard is the most easily available, convenient and most popular teaching aid. As with all teaching aids, it requires planning in order to achieve effective learning. In planning how to use the board, ask yourself the following questions:

- Which parts of the lecture are important enough to be placed on the board?
- Which aspects of the lecture are likely to be unclear?
- Which diagrams and/or drawings can be used to explain difficult points?
- Which are the main points or steps in the lecture?
- Will the use of the chalkboard save lecture time? Do you need to use the chalkboard before the learners assemble or is it possible to use a less time consuming aid, for example, slides on the OHP?

To enhance learning while using the chalkboard, you are advised to:

- Write only the essential points and examples, like in your lesson plan outline. This helps the learner copy and fill in all other relevant information as you build up from introduction to conclusion.
- Ensure your writing is large enough to be seen by all learners. Plan the board so that information develops from one stage to the next. Remember, the board is not a scrap paper.
- Deliver the lecture to your audience and not to the board. If you have to write, lecture first, then write on the board. Stand next to the board at such an angle that you can see your learners frequently. Maintain eye contact with the class. You can make your chalkboard work more interesting for your learner by using several different techniques.

Templates

You can cut out shapes of card or plywood to outline figures, which are often needed, for example, a triangle in mathematics, oval for eggs, round for oranges and many more. These can be cut out in advance and fixed on the boards as you explain them.

Bounce Pattern

This is a thick tough paper in which a certain outline, for example, the map of a country with its regions has been punched out along the outline. Hold the paper against the blackboard and flicker a chalky duster along the perforated line. When the paper is taken away, lines of dots appear which you can join to produce the desired drawing.

Semi Permanent Line

Use soft chalk soaked in a sugar solution to draw on the board. The drawing can be wiped off with a damp cloth.
These can be in the form of slides, photographs, picture drawings, line drawings or cartoons. Good and appropriate pictures are sometimes difficult to obtain or prepare.

Hints on preparing good pictures, even for non artists, are described in Chapters 11 and 12 of 'Helping Health Workers Learn' by D. Werner and B. Bower (Hesperian Foundation).

Flipchart or Cards

You will have used these before, for example, when preparing a demonstration for a nutrition lecture in a maternal child health (normally referred to as MCH) clinic. Flipcharts or cards are cheap and easy aids to prepare. They can be made from butcher paper, old calendars, paper boxes, manila paper and so on. The pictures can be drawn by somebody else or traced from a book. The pictures should be labelled in legible handwriting. When labelling remember:

- To use thick felt pens.
- To use different colours for emphasis.
- To write in lower (small) case letters, not capitals.
- Not to write too much.

When making a presentation using flipcharts, do not read the chart as you talk. As you prepare the lesson or the materials for teaching, make notes at the back of the flipchart to guide your discussion. This way you can secretly read your notes as you teach and still face the audience.

Posters

Posters take longer to prepare than flipcharts. They may consist of words, pictures, or a mixture of both. Unlike flipcharts, posters are usually single leafed. Posters need a lot of planning and testing before use. They can be prepared for two types of viewers:

- For a mixed (heterogeneous) audience, for example, on a street for the general public.
- For a captive audience, for example, in a class.

When a poster is being prepared for a heterogeneous audience, it should deliver the message at a glance. When preparing a poster, remember to make it simple, use simple language and avoid difficult words or slang and put as little as possible on the poster.

The Real Thing or Object

The best teaching aid is 'the real thing'. For instance, it is much better to teach mothers how to wash a baby by using a real baby rather than a doll. A live baby cries and kicks whereas a doll does not. The mothers need to see and learn how to handle an active, lively, small baby kicking and splashing in water.

Each mother can then do a return demonstration with their own baby as you observe and reassuringly respond to their concerns. You will agree that this is a very good example of teaching the mother/learner how to wash a baby.

Try as much as possible to use 'the real thing' in your lessons. Your first thought should be, is it possible for you to demonstrate 'the real thing' to your class in this lesson? If this is not possible, you should then think of other teaching aids that are simulations of the real thing. The closer the simulation to the real thing, the better the teaching aid is. This is an important consideration in helping the learner to internalise and later transfer the impression they get to the real thing. It also helps the learner to acquire the right attitudes and find the right expressions to use from the start.

Handouts

Can you remember asking for notes from your teacher? They are an example of a handout. Handouts are written papers given out by teachers to students. They act as guides for work to be done, or references to be looked up. They help remind students of the main points to remember from a learning experience. You should not use them as substitutes for manuals, texts and references. A handout is both a visual aid to learning and an addition to private study.

The purpose of the handout is to help you to:

- Indicate objectives of the lesson exercise. Ask yourself what is it for? Who is it for? Is it needed?
- Indicate the relevance and define the area to be covered.
- Provide additional theoretical information.
- Provide a stimulus to further thinking.
- Give instructions for practical work. The instructions should be specific and complete.

Your handout, therefore, should:

- Set out the structure of a lesson to promote attainment of the objectives
- Benefit learning
- Provide an infrastructure for the topic
- Emphasise a framework for interaction between the facilitator and learner
- Help the learner to receive detailed information
- Guarantee the accuracy of the transferred information

You should take care while designing or preparing handouts so as not to reproduce a textbook. The following guidelines are useful when preparing a handout:

- Your introduction should relate the new material to the learner's past experience.
- You need to summarise the major ideas.
- You should use major and minor headings.
- You should leave space between paragraphs and sections for learners to make notes.
- You need to simplify your expressions.
- You should label your illustrations, tables and graphs appropriately. A series of diagrams building up to a complete concept may be more helpful than one detailed diagram.
- You are advised to put questions and exercises within the text to stimulate thinking.
- Your content, language and spelling should be accurate.
- The statements should be consistent with other text or manuals which the learners use.
- Your handouts must be clear and arranged in a logical order with good arrangement of headings, words and diagrams on the page.

The Flannel Board

This is the device of choice for teaching villagers.
All rural educators should know how to use it.
It is based on the fact that materials with rough surfaces tend to adhere to each other. If flannel cloth is not available, alternatives can be found. The board is put in front of the class, sloping slightly backwards.
Cards with a rough surface, for example, sand paper can be placed on the board in the desired position.

The cards can be moved or taken down at will.
Make cards in large print or written words, for instance, newspaper cuttings, photographs or dissected posters.

Advantages of the Flannel Board

- It tells a story in which you can see things happen
- It has strong colours that please
- The pictures are large enough and can be seen from a distance
- The pictures are mostly things that people are familiar with
- It arouses interest and questions

Disadvantages of the Flannel Board

However, there are also several disadvantages associated with the method. These include:

- Barazas are usually too big for flannel pictures to be seen from the back.
- When flannels are used in open air, the wind may blow the flannel graphs away.
- The apparently miraculous way in which the picture sticks to the board is a distracting novelty.
- *Even the best designed teaching aid cannot replace practical work with patients and the community.*

How do you store your teaching aids?

Good, durable teaching aids can be reused. Keep your teaching aids neatly in a resource learning kit (cupboard/store). Each item should be labelled clearly for easy access. Maintain an inventory of the various aids in stock. When you lend out items the borrower should sign for them. On their return, you should check the condition of the items first before storing them. This is to ensure that you keep readily usable items in your resource centre or cupboard

Storage of Specific Aids

Maps and charts are stored while rolled up. To avoid long searches, their titles should be written on the back and then stored in a way that they can easily be seen.
Slides are best kept in hanging files with a list of contents on the filing cabinet.
Overhead transparencies and master copies of handouts are put in a master file together with other material on that particular unit.
The master copies are numbered corresponding to the number of the stencils and stored in or near the stencil room. These are filed in either alphabetical or numerical order.
When a handout is needed, the master copy is retrieved and the handout reproduced.
Handouts need to be regularly updated with current information. Models, samples and specimens can be stored in the library permanently.

How to Use Teaching Aids

The following steps will ensure that you use teaching aids appropriately:

- Select the teaching aids to suit the lesson.
- Preview the teaching aids to ensure they convey the message you want.
- Plan how and in what order you intend to use your teaching aids, you could number them in pencil.
- Present your teaching aids appropriately and give adequate explanation.
- Evaluate your teaching aids with the same class.

Selecting the Teaching Aid

As the teacher, ask yourself the following questions:

- Do you need an aid of any kind?
- Will an aid help you achieve your objective or make the lesson more effective?
- If the answer is yes, what kind of teaching aid is best suited to your purpose?
- Is the chosen aid available or does it have to be borrowed or constructed? What are the alternatives?

Previewing and Evaluating the Teaching Aids

Preview your teaching aids before use to avoid unpleasant surprises.
During your preview, plan for explanations or comments you may wish to make during the presentation of the lesson. Ask yourself the following questions:

- Will the aid help achieve the objectives?
- Does the aid focus on one main idea?
- Is the aid depicting a real situation?
- Does it stimulate the imagination of the learner?

Planning

In your plan, you should:

- Introduce the subject in a stimulating and interesting way to arouse curiosity.
- Describe the main body of the lesson. This is the chief vehicle for transferring information.
- Recapitulate, that is, restate or repeat the lesson in summary to assist in consolidation of knowledge.

Having determined the role of the teaching aid, the learner's mind must be prepared to obtain the maximum benefit from the aid.
Tell your learner what to look for as you explain and comment where necessary.

Presenting a Teaching Aid

Your students see you as an expert. You should check the mechanical equipment to ensure that it is in working condition.
If you are working with a community on a field trip, make sure you have obtained consent from the involved persons (see Community Diagnosis module).

Evaluating the Teaching Aid

Evaluation refers to the process of looking back at what has been done to see whether the set out objectives have been met and to what extent. After presenting your teaching aid, answer the following questions:

- Was the presentation successful?
- Did the aid achieve its purpose?
- Was the objective reached?

You can find out the answers to these questions through:

- Discussion with the learner
- Asking and answering questions from the learner
- Questionnaires and assignments to be completed by the learner
- Weekly test

Having considered all these factors, you are now in a position to use the aid.
It is the aim of the lesson that should dictate the type of aid to be used.

SECTION 6: EVALUATION OF STUDENT PERFORMANCE

Introduction

This section deals with the sensitive issue of evaluating student performance.

Objectives

By the end of the section, you will be able to:

- Explain the concepts of assessment and evaluation and why these are important in learning.
- Explain the interrelationship between the four major aspects of evaluation.
- Outline how to assess knowledge, skills and attitudes using different assessment tools and methods.

The Concept of Assessment and Evaluation

Performance assessment is a measure of assessment based on authentic tasks such as activities, exercises or problems that require students to show what they can do. The results of the assessment can then be used for comparison with those of other students. This is called evaluation and it can be measured.

Evaluation involves placing a value on the learner's performance in order to make a decision about the learner and the subject that was taught. It includes examining and assessing of the learner.

Assessment refers to the process of finding to what extent the learner has achieved the set objectives. This is done through examinations which are the tool or process used to determine the learners degree of learning.

Why should you evaluate the learner?

You should evaluate the learner in order to:

- Help the learner to understand themselves.
- Help in the retention and transfer of learning.
- Motivate the learner.
- Predict the level of the learner's future performance.
- Judge the learner's achievements.
- Monitor the learner's progress for the purpose of providing feedback.
- Determine teaching effectiveness.
- License the practice of a profession.
- Identify the weak and strong areas of a course.
- Grade and rank students.
- Gauge the reputation of school performance.
- Protect society, that is, inform the community of the extent to which graduates constitute a potential danger.

There are 2 types of evaluations. You shall now look at each of these in detail.

Formative Evaluation

When you were a student and had to learn how to perform a certain task, you were allowed to do it in small sessions.
The ward in-charge would check to see whether you were on the right track and probably comment and show you the next step to take. This is similar to formative evaluation.

Formative evaluation is progressive, that is, the learner and learning are evaluated on a continuous basis. It provides feedback on the strengths and weaknesses of the learner. It is performed frequently, that is, after small units of learning.

Why do you think formative evaluation is useful?

It gives an early diagnosis of the learner's problems during the learning process, which enables corrective measures to be taken.
There are several examples of formative evaluation. These include placement testing or pre-testing, which are conducted for the purpose of gauging to what extent the learner possesses the skills and abilities needed to begin instruction. This also helps to determine whether the student has already mastered some of the material that is set to be taught. This way, you can alter the content of the lesson.

You should place the learner at the appropriate level of the programme. At the end of a module, identify the learner's successes or failures and make the appropriate adjustments in instruction and learning. Use the placement test as a diagnostic test to identify severe learning problems.

Summative or Terminal Evaluation

Summative or terminal evaluation is usually carried out at the end of a term, course or programme for several reasons. It enables you to award grades, certificates or licenses to the student for practice and/or select learners for a further educational programme.

A good evaluation system should include both formative and summative evaluation. Formative evaluation gives diagnostic feedback to both the teacher and the learner, while summative evaluation reveals the student's ability to integrate and apply learning.

The content evaluated is selected from the entire course work covered in the term or year with samples of all learning tasks. It should include:

- Knowledge
- Skills
- Attitudes

Assessing Knowledge

Knowledge can be assessed through use of essays, short answer tests, multiple choice questions (MCQs), true or false questions, matching tasks, fill in the blanks and oral questions.

Essays are easy to set. It is important to remember to make them valid, reliable and objective. They should ask the leaner to describe and analyse issues. Be very specific and describe exactly what the student should do. You should also prepare a marking scheme. One of the main objectives of scoring is to award the correct marks for a given test, exam or evaluation. Two types of scoring are important for you to consider.

Analytical Scoring

Analyse the correct response by making out a list of crucial points, which must appear in the answer in advance.
You should then compare the student's answer to these points and award marks for them. You should also consider integration, coordination and organisation when awarding marks.

Impression Scoring

In impression scoring, you should first analyse the correct responses as is the case in analytical scoring, then read the script to get an impression for adequacy. You should then transfer the impression into a grade. The papers (scripts) may be sorted out by quality, that is, 25% low, 50% middle, 25% high to form the normal educational curve.

Rules to be Observed When Marking Essays

Since you may have many scripts to mark, you need to organise yourself in order to be able to mark them fairly. The following points can help you achieve this:

- Arrange for independent marking of papers or at least a sample of them if the class is too large.
- Conceal the name of the student, that is, use numbers or letters.
- Grade answers question by question and not student by student.
- Discuss the answers with students to ensure learning, that is, provide feedback.

Multiple Choice Questions (MCQ)

These are questions where four or five answers are given and the student has to choose the correct or best answer. A typical MCQ question has three
parts, namely:

- The question itself or the stem
- The correct answer
- Distracters or incorrect answers

How do you choose good questions?

There are several factors to take into consideration when choosing questions. These include:

- Questions should be simple, straightforward and should relate to what was taught.
- The question should emphasise the aspects you want to teach.
- Choose good distracters.
- Do not make incorrect answers ridiculous.
- Choose distracters from among the type of mistakes the students commonly make.
- Do not make the correct answers obvious.
- See the question below for an example of a wrong and a right answer.

To improve the health of the children in your area which of the following would be the most useful in your dispensary: -

Answers:

a. Ten more staff
b. An ambulance
c. Upgrading to a hospital
d. Fridge and vaccines

Your answer would be (d) because neither (a), (b) nor (c) are possible for a dispensary. Sometimes the correct answer is obvious for other reasons. See the next example.

The best food for a young child is:

Answers:

a. Tinned milk.
b. Goat's milk.
c. Cow's milk.
d. Breast milk with extra solid food after four months.

Your answer would be (d). Here, the correct answer is much longer than the distracters and the student may choose it for that reason only. It has been made too obvious. Using common mistakes for distracters can be very effective. Here is a good example.

Assessing Skills

Skills can be assessed through the use of:

- Objective structured clinical examination (OSCE)
- Objective structured practical examination (OSPE)

For both methods, candidates pass through a number of examination stations to answers or solve various problems. Questions vary from practical skills, knowledge, application and testing of attitudes. All candidates get the same experience.

Objective Structured Practical Examination (OSPE)

Practical skills are very important components of training in all professions.
Failure in practical tests is equivalent to failure in the whole examination.
You should not allow excellence in theory to compensate for a failure in practicals.
OSPE examinations must be objective, valid and reliable. They should define the competencies a worker needs to develop in order for them to successfully perform the job. This ensures that all examiners have similar expectations.

Look for a correct diagram in a clinical case. Assess the student's skills using rating scales or a checklist. You should set short answers to practical problem solving skills questions to ensure objective assessment. In order to improve the validity of the test, you should increase the sample thus increasing the range of competencies to be tested. Draw up in advance a table of specifications to be tested on.

Objective Structured Clinical Examination (OSCE)

This is a comprehensive examination of a patient. The student spends 15 to 60 minutes with a patient and then discusses that patient with a panel of examiners (long case). The exam should be set up in the following manner:

- Brief examination of a patient followed by oral questions (known as viva voce).
- Assessment of the learner's actual work during practice using rating scales.
- Assessment of log and procedure books.
- Case record and case reports.
- Models or phantoms.

The following are stages of setting an OSPE:

- Identify topics/competencies to be tested on.
- Decide the number of stations and timing.
- Allocate topics and competencies to be tested.
- Set up instructions for examiners rating scales/check list for each station.
- List resources required for each station. These include examiners, markers and observers, patients, normal persons and simulation and room furniture, that is, beds, clocks, bells and so on.
- Allocate marks for each station.
- Allocate marks within the station, that is, for each item of the question.
- Prepare standard/model answers for the questions.

The main advantages of OSPE include:

- OSPE separates the assessment of process and product by ensuring that the student performs the procedure as they are being observed.
- Allows adequate sampling of skills.

- Allows analytic and objective observation of skills because the observed skill is quite specific.
- Can be used as quick feedback for students and teachers, especially before certification, as a revision tool.

However, OSPE also has several disadvantages.
- The process can appear impersonal
- It takes time to organise
- It can interfere with the provision of other services

Assessing Attitudes
- The student's attitude is an important ingredient in delivering a good service. By assessing this skill, a student will learn the importance of having a good attitude and will understand what is expected of them.
- Attitudes can be assessed indirectly, that is, as the candidate performs a skill. This will have to be over a long period so that your assessment is based on repetition of the same attitude over time. Assessing of attitudes should be a continuous process to give a student the chance to internalise the specific attitude.

What do you use to assess attitudes?
- Pencil and paper test questions can be set for knowledge based tests. However, simulations, allowing the observation of gestures and actions, are a better way to see the actual display of attitude.

Types of Tools
You can use a rating scale based on a table analysis (TA). There are two types of scales:
- Scale of 5-1. This should remind you of the XY forms you had to have filled in by your ward in charge. A simple satisfactory to unsatisfactory scale is another example.
- Semantic differential, that is, a scale on opposite characteristics.
  This can be used on attitudes alone. One example is given below.

Example:

Please tick where the student exhibits this behavioural characteristic.
- Keen and willing – does minimum work.
- Accepts instructions – ignores instructions.
- Polite to patients – Rude.

Set up instructions for examiners' rating scales/check list for each station. List resources required for each station including examiners, markers and observers. Allocate marks for each station and within each station, that is, for each item of the question. Prepare standard or model answers for the questions.

Developing Assessment Tools
You can develop an assessment tool by following these basic steps:
- List the objectives you wish to evaluate.
- Identify the expected learner outcomes (knowledge, attitude and skills).

- Specify the tools of assessment such as essays, MCQs, OSPE, and so on.
- Allocate marks for each objective and develop a marking scheme.
- Construct questions for the whole test.
- Arrange questions from the first to the last.

Grading

This refers to the awarding of marks, score or a value to the assignment performed. Some examples of grading include:

- Percentage of 0-100%.
- Pass or fail, good, average, excellent.
- Percentiles.
- Letter grades, that is, A, B, C, D, E or F.

Valuation of student performance is important. This is mainly because it gauges the extent to which educational objectives have been achieved and guides the teacher in deciding what steps need to be planned next to facilitate learning for the students.

EDUCATIONAL OBJECTIVE

- An **objective** is a statement describing an instructional outcome.
- An objective enables the teacher help students in learning process so that they may acquire desired knowledge ,skills and attitude necessary in provision of healthcare.
- An objective should clearly state its intended outcome not to open to ambiguous interpretation

Categories of objectives

- Objectives are grouped in **three major** domains/categories ,namely;
    - Cognitive/knowledge domain
    - Psychomotor/skill domain
    - Affective/attitudinal domain

Cognitive domain

- Cognitive domain is one given a lot of attention
- It includes objectives concerning **knowledge** or information that includes:
    - Thinking
    - Naming
    - Recognizing
    - Prediction and so on

- **Benjamin S Bloom** and his associates developed a taxonomy for this domain
- **Taxonomy** is a method of sequential classification from simple to higher levels.

They arranged this domain from simple to higher levels of learning as follows:

1. Knowledge
Ability to memorize ,recall or otherwise repeat information presented earlier

2. Comprehension
Ability to interpret or restate the information acquired on knowledge

3. Application
Ability to use the information ,theories ,principles ,laws or new situations.

4. Analysis
Ability to divide complex knowledge into it separate parts and to recognize the relationship.

5. Synthesis
Ability to bring together separate elements of knowledge to form new patterns

6. Evaluation
Ability to make judgment or appraisals based on knowledge or a given criteria.

Psychomotor Domain

- ❑ It includes the skills requiring use and coordination of skeletal muscles e.g. manipulation of tools ,operation of machines ,speaking and writing.

- **NB**-No widely acceptable taxonomy of psychomotor domain that has been developed though some suggestions have been proposed. They include:
    a. **Grossly bodily movements** e.g. arms ,shoulders ,feet ,legs e.t.c
    b. **finely coordinated movements** e.g. hands and fingers ,feet and fingers
    c. **Non-verbal communication** e.g. facial expression, gestures e.t.c
    d. **Speech behavior** e.g. producing and coordinating sound for instant foreign language or literature reading

Affective domain

It includes objectives concerned with attitudes ,appreciation ,values and emotions.

- ❑ It is classified into **five levels** as follows:

a) **Receiving**
Willingness to give attention to an event or activity
b) **Responding**
Willing to react to an event through some form of participation
c) **Valuing**
Willing to accept an event through the expression of a positive attitude
d) **Organizing**
Considers values and selects the most appropriate alternatives on their merits
e) **Characterizing by a value complex**
Acts in accordance with values he/she accepts and incorporates the resultant behavior into his/her personality

General qualities of a good objective

a) **Consistency**: conveys the same meaning each time
b) **Unequivocal**: no argument/dispute about its meaning
c) **Feasible**: can be achieved
d) **Observable**: seen to be happening
e) **Measurable**: quantified in an objective way

SMART OBJECTIVES

- ❑ **Specific**
- ❑ **Measurable**
- ❑ **Achievable**
- ❑ **Realistic**
- ❑ **Time bound.**