



Collage of nursing

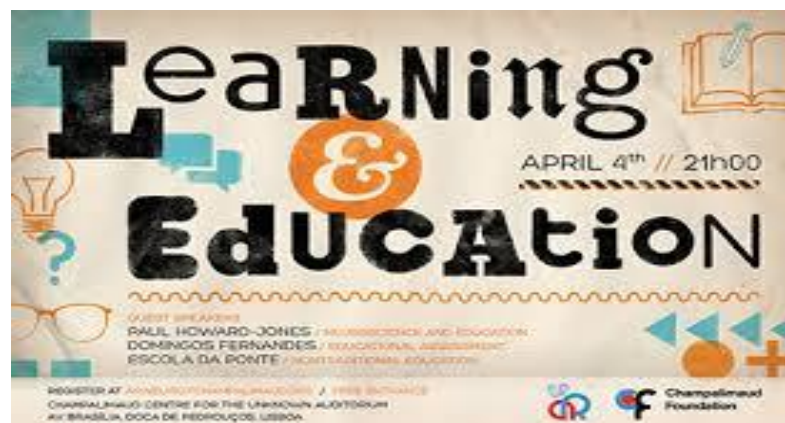


King Saud University

Nursing administration & education dept

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Principles of learning & Education ***NUR 315***



1435- 36H- 2014- 15 G

Associate prof. Dr. Fatma Baddar

Ph.D.N., M.Sc.N., B.Sc.N.

Nursing Administration & Education Dept.

Principles of Learning and Education Course

Module One

Lecture (1)

Overview of Education in Health Care



Module One :Learning Objectives

1. Recognize trends affecting the healthcare system in general and nursing practice in particular
 - 1.1. Identify the purpose, benefits, and goals of patient and staff education.
 - 1.2. Compare and contrast the education process to the nursing process.
 - 1.3. Identify reasons why patient and staff education is an important duty for professional nurses.
 - 1.4. Discuss barriers to education and obstacles to learning

Trends Affecting Health Care

The need for nurses to teach others and to help others learn will continue to increase in this era of healthcare reform. With changes rapidly coming in the system of health care, nurses will find themselves in increasingly demanding, teaching being a major aspect of the nurse's professional role. So Nurses must have a basic prerequisite understanding of the principles, practice, and process of teaching and learning to carry out their professional responsibilities with efficiency and effectiveness. The focus of teaching efforts by nurses was not only on the care of the sick, but also on educating other nurses for professional practice.

Purpose, Benefits, and Goals of Patient and Staff Education

Current and continuously improving patient and staff education programs are an integral part of today's system of healthcare delivery to the public.

The purpose of patient education is to increase the competence and confidence of clients for self-management.

Nursing goal is to support patients through the transition from;

- Being invalids to being independent in care;
- Being dependent recipients to being involved participants in the care process; and
- Being passive listeners to active learners.

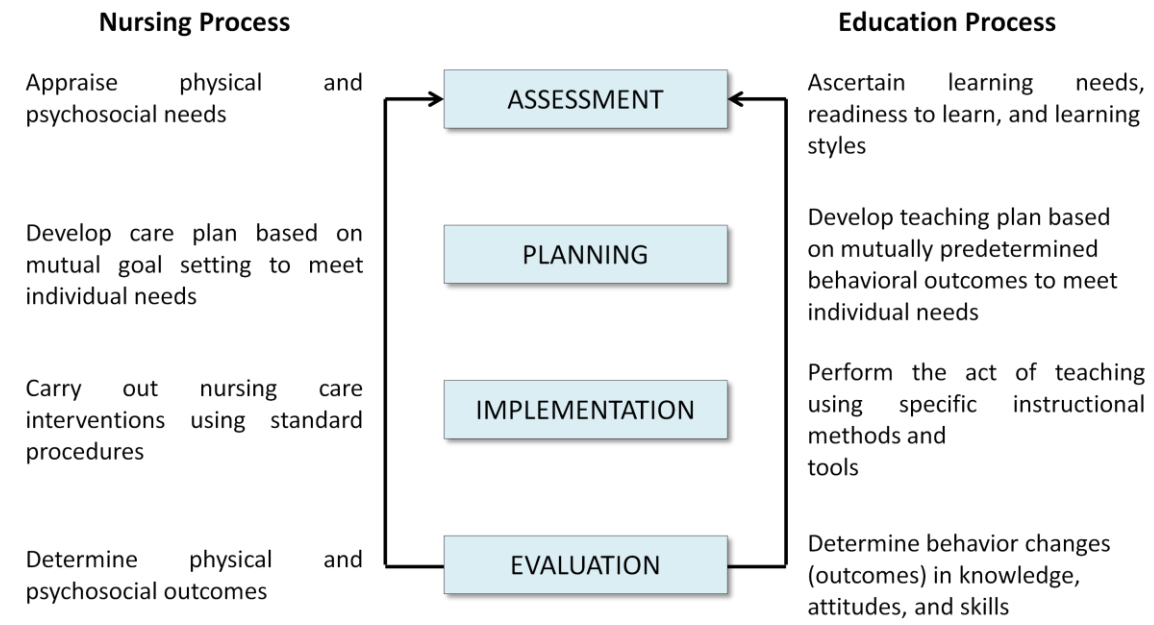
Patient education has demonstrated its potential to:

- Increase consumer satisfaction
- Improve quality of life
- Ensure continuity of care
- Decrease patient anxiety
- Effectively reduce the incidence of complications of illness

- Promote adherence to healthcare treatment plans
 - Maximize independence in the performance of activities of daily living
 - Energize and empower consumers to become actively involved in the planning of their care
- The Nurse educator role has a great impact on their relationship with patients and their job satisfaction
 - **In turn, the educator role of nurses ;**
 - Enhances their job satisfaction when they recognize that their teaching actions have the potential to forge therapeutic relationships with patients, allow for greater patient-nurse autonomy.
 - Increase their accountability for practice, and create change that really makes a difference in the lives of others

The Education Process Defined

The education process is a systematic, sequential, planned course of action consisting of two major interdependent operations, teaching and learning. This process forms a continuous cycle that also involves two interdependent players, the teacher and the learner. Together, they jointly perform teaching and learning activities, the outcome of which leads to mutually desired behavior changes. These changes foster growth in the learner and, it should be acknowledged, growth in the teacher as well. Thus, the education process should always be a participatory, shared approach to teaching and learning. The education process has always been compared to the nursing process—rightly so, because the steps of each process run parallel to one another, although they have different goals and objectives. The education process, like the nursing process, consists of the basic elements of assessment, planning, implementation, and evaluation.



Role of the Nurse As Educator

- Nurses act in the role of educator for a diverse audience of learners—patients and their family members, nursing students, nursing staff, and other agency personnel.
- Despite the varied levels of basic nursing school preparation, legal and accreditation mandates have made the educator role integral to all nurses
- Nurses function in the role of educator as:
 - The giver of information
 - The assessor of needs
 - The evaluator of learning
 - The reviser of appropriate methodology
- The partnership philosophy stresses the participatory nature of the teaching and learning process.

Barriers to Teaching

Barriers to teaching are those factors impeding the nurse's ability to optimally deliver educational services. **Major barriers include:**

- lack of time to teach

- inadequate preparation of nurses to assume the role of educator with confidence and competence
- personal characteristics
- low-priority status given to teaching
- environments not conducive to the reaching-learning process
- doubt that patient education effectively changes outcomes
- inadequate documentation system to allow for efficiency and ease of recording the quality and quantity of teaching efforts

Obstacles to Learning

Obstacles to learning are those factors that negatively impact on the learner's ability to attend to and process information.

Major obstacles include:

- limited time due to rapid discharge from care
- stress of acute and chronic illness, anxiety, sensory deficits, and low literacy
- functional health illiteracy
- lack of privacy or social isolation of health-care environment
- situational and personal variations in readiness to learn, motivation and compliance, and learning styles
- extent of behavioral changes (in number and complexity) required
- lack of support and positive reinforcement from providers and/or significant others
- denial of learning needs, resentment of authority and locus of control issues
- complexity, inaccessibility, and fragmentation, of the healthcare system

Principles of Learning and Education Course

Module One

Lecture (2) Introduction to Learning and Teaching



Learning Objectives

1. Appreciate importance of learning and teaching in nursing profession.
2. Understand the differences between auditory, visual and kinesthetic learners
 - 2.1. Discuss learning style principles
 - 2.2 Differentiate between auditory, visual and kinesthetic learners
 - 2.3. Motivate students through identify their learning style by using learning styles survey tool
3. Understand the principles of learning and teaching process in order to act as an effective facilitator in achievement of group tasks.
 - 3.1. Define key terms of learning and teaching.
 - 3.2. Differentiate learning and teaching.
 - 3.3. Comprehend learning and teaching process
 - 3.4. Compare classical versus active learning
 - 3.5. List principle of learning and teaching

Importance of learning and teaching in nursing profession.

When someone asks what it is that a nurse does, the most common answer is that a nurse is trained and licensed to care for the sick. One aspect of nursing that is performed daily and rarely acknowledged is teaching. Nurses are known for their ingenuity, sixth sense, and ability to do many tasks at once, but they rarely are recognized as educators or given the time or training to take on the large responsibility of educating the public. This course has put together a comprehensive, consolidated view of teaching and learning principles and how nurses students can use these concepts to their future educational role.

Effective education offers a balance of theoretical and practical experiences to help learners develop competencies that are essential for their entering a healthcare profession and continuing to develop professionally throughout their careers. Broad social, cultural, historical, and political forces interrelate to form and shape teaching and learning, and thus the essential competencies that learners must develop. Because the needs of healthcare consumers are diverse, education should focus on preparing healthcare providers who can function in a variety of roles, including the key roles of clinician, communicator, educator, counselor, administrator, and manager.

Learning Style principles:

Six Learning Style Principles that must be consider by both educator and learner for effective learning and education process;

1. Both the style by which the teacher prefers to teach and the style by which the learner prefers to learn can be identified.
2. Educators need to guard against relying on teaching methods and tools which match their own preferred learning styles.
3. Educators are most helpful when they assist learners in identifying and learning through the their own style preferences.
4. Learners should have the opportunity to learn through their preferred style.
5. Learners should be encouraged to diversify their style preferences.

6. Educators can develop specific learning activities that reinforce each modality or style.

Learning Styles:

The three most common types of learning styles are visual, auditory, and kinesthetic. To learn, we depend on our senses to process the information around us. Most people tend to use one of their senses more than the others. Through this lesson, you will be able to determine which of these learning styles you rely on the most.

Visual Learners: *learn by seeing and looking.*

- Take numerous detailed notes
- Tend to sit in the front
- Are usually neat and clean
- Often close their eyes to visualize or remember something
- Find something to watch if they are bored
- like to see what they are learning
- Benefit from illustrations and presentations that use color
- Are attracted to written or spoken language rich in imagery
- Prefer stimuli to be isolated from auditory and kinesthetic distraction
- Find passive surroundings ideal

Auditory Learners: *learn by hearing and listening*

- Sit where they can hear but needn't pay attention to what is happening in front
- May not coordinate colors or clothes, but can explain what they are wearing and why
- Hum or talk to themselves or others when bored
- Acquire knowledge by reading aloud
- Remember by verbalizing lessons to themselves (if they don't they have difficulty reading maps or diagrams or handling conceptual assignments like mathematics).

Kinesthetic learning style: *learn by touching and doing.*

- Need to be active and take frequent breaks
- Speak with their hands and with gestures
- Remember what was done, but have difficulty recalling what was said or seen

- Find reasons to tinker or move when bored
- Rely on what they can directly experience or perform
- Activities such as cooking, construction, engineering and art help them perceive and learn
- Enjoy field trips and tasks that involve manipulating materials
- Sit near the door or someplace else where they can easily get up and move around
- Are uncomfortable in classrooms where they lack opportunities for hands-on experience
- Communicate by touching and appreciate physically expressed encouragement, such as a pat on the back

➤ **Application**

Take the learner style survey and identify your own learning style

Glossary for teaching and learning

☒ **Academic program:**

A series of courses that have both theoretical and practical components and are designed to prepare students as a specific category of healthcare provider. Academic programs typically involve several years of study, allowing time and opportunities for students to develop essential competencies that encompass essential knowledge, skills, values, and behaviors.

☒ **Syllabus:**

The design document for a course, providing a summary of all the basic information about a course (e.g.. course objectives, student assessment methods).

☒ **The education process :**

Is a systematic, sequential, planned course of action consisting of two major interdependent operations, **teaching and learning**. This process forms a continuous cycle that also involves two interdependent players, the **teacher and the learner**. Together, they jointly perform teaching and learning activities, the **outcome** of which leads to **mutually desired behavior changes**. These changes foster **growth in the learner** and, it should be acknowledged, growth in the **teacher as well**. Thus, the education process should always be a **participatory, shared approach to teaching and**

learning

☑ Teaching

Transferring or conveying knowledge, skills, and attitudes. Teaching usually refers to instruction provided through classroom activities and is often associated with pre-service education programs.

☑ Learning

Life-long process of acquiring new knowledge, skills, and attitudes, it may occur formally during a learning event or informally during personal reading or study.

☑ Active Learning:

A communication technique that helps stimulate open and frank exploration of ideas and feelings and establish trust and rapport with students.

☑ Clinical learning

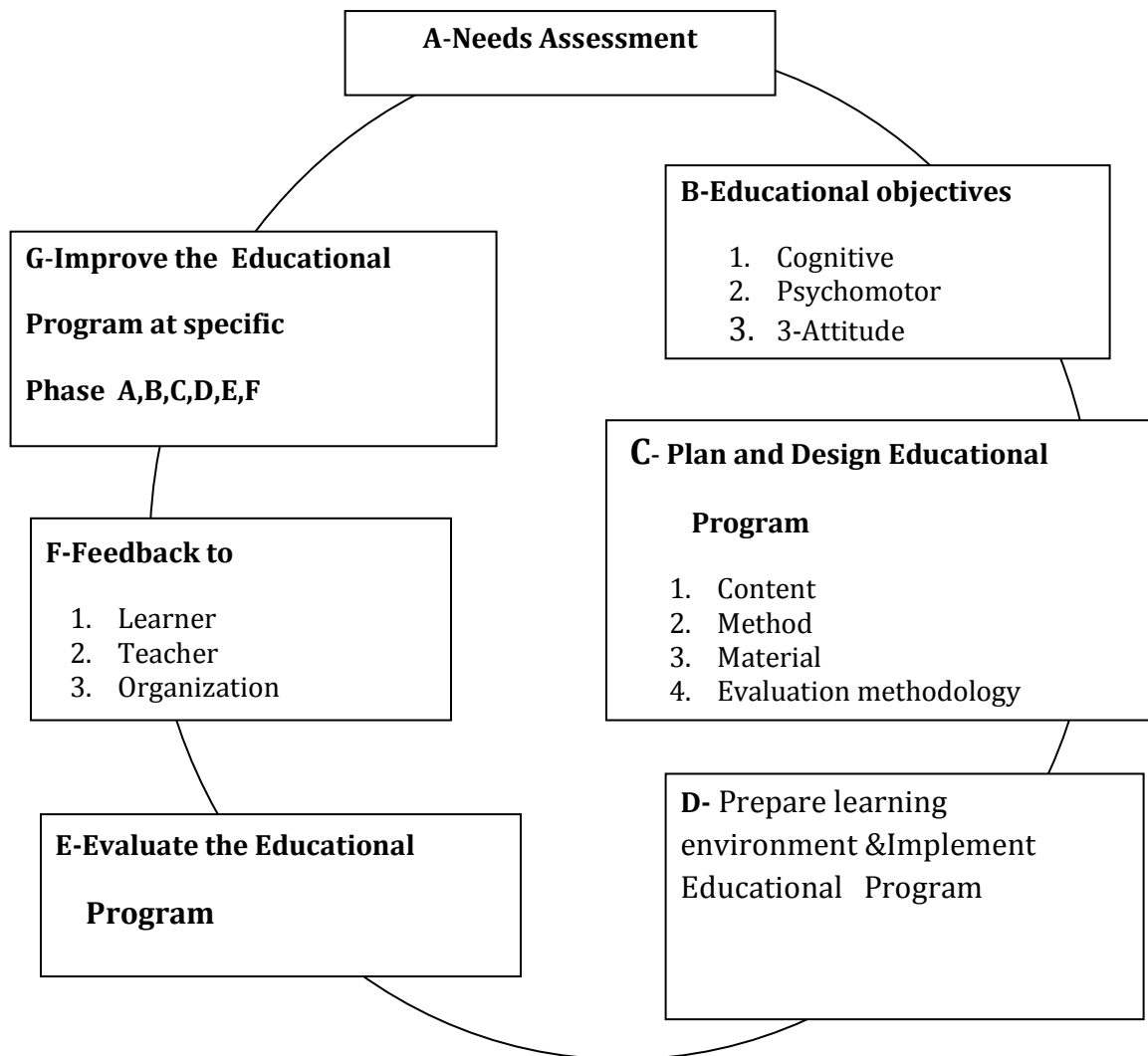
- **Clinical practice:** A learning method, essential for developing healthcare delivery skills, that allows students to practice skills in the clinic. Clinical practice helps prepare students for the roles and responsibilities they will hold in their profession. It provides opportunities to integrate knowledge, skills, and attitudes.
- **Clinical Simulation:**

A simulation that presents the learner with a carefully planned, real or hypothetical patient management situation. Clinical simulations are an excellent method for developing cognitive or clinical decision-making skills. The learner interacts with persons and things in the environment, applies previous knowledge and skills to respond to a problem, and receives feedback about those responses without having to be concerned about real-life consequences.

☑ Competency:

The ability to perform a skill correctly and according to a specific standard (often presented in the form of a performance checklist)

Learning and education process:

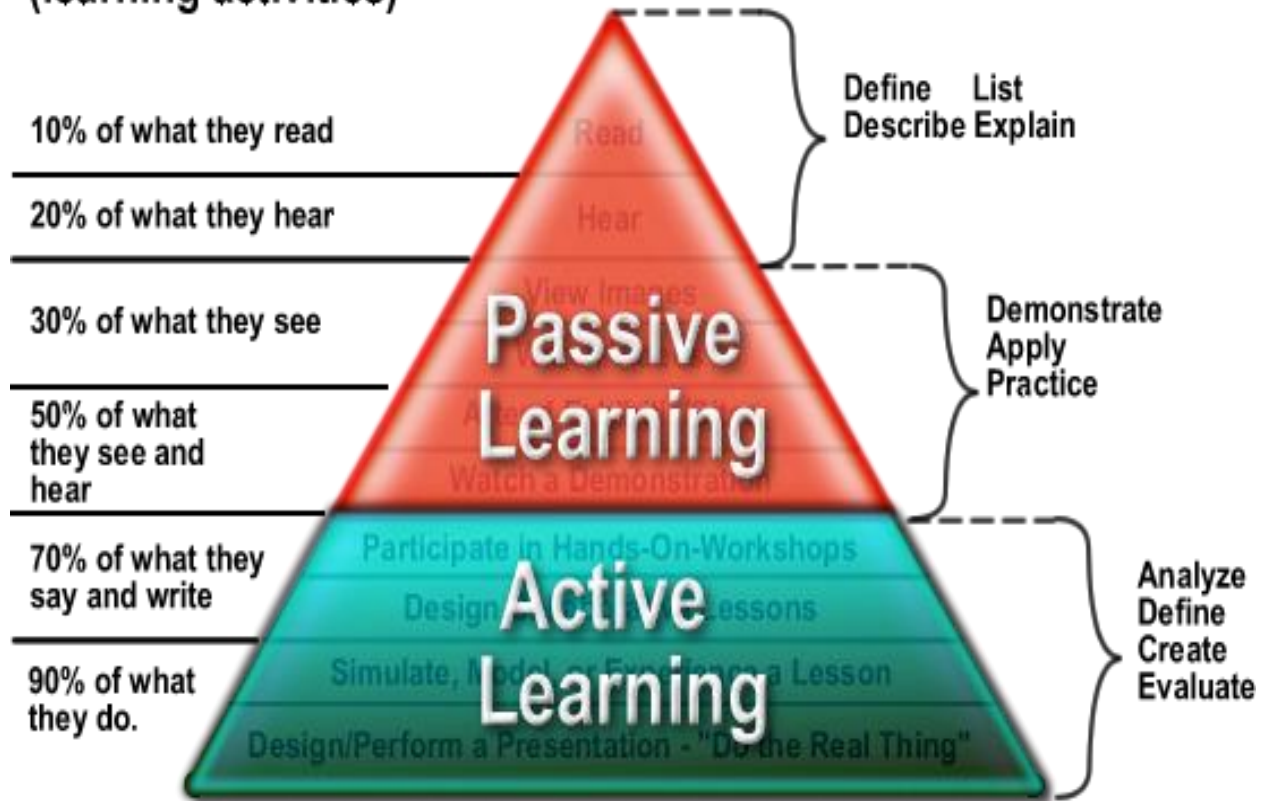


Adult learning

✓ Figure 1.2 Classical versus active learning

People generally remember...
(learning activities)

People are able to...
(learning outcomes)



In classical teaching the teacher being the center of attention in the classroom . In contrast, active teaching represents a fundamental shift from the teacher being the center of attention to the student being the center of attention.

Difference between Classical & active learning strategies

Classical teaching strategies	Active learning strategies
View learning as the transmission of information from the teacher to the student.	Active learning requires that students to engaged and to be active in the learning process.
The instructor is the primary source of knowledge, and lecture is the primary form of transferring knowledge.	The instructor serves a coach or facilitator, guiding students through activities, but letting the students take control of the learning event itself.

Value of active learning

Boylan (2002) support the value of active learning as the most effective teaching technique for adult learning because it :

- Increases motivation of adult
- Increases student involvement in their own learning
- Develops higher level thinking skills
- Increases student and peer evaluations of faculty

Active teaching follows seven principles (Weimer, 2002):

Principle 1: Teachers Do Learning Tasks:

- Organizing the content
- Generating the examples
- Asking the questions
- Answering the questions
- Summarizing the discussion
- Solving problems
- Constructing diagrams

Principle 2: Teachers Do Less Telling; Students Do More Discovering

- Stop telling students everything and hold them accountable for knowing or asking.

Principle 3: Teachers Do More Design Work

- Effective assignments and activities:

Principle 4: Faculty Do More Modeling

- Demonstrate for students how an expert approaches a learning task.

Principle 5: Faculty Do More to Get Students Learning from and with Each Other

- Use collaborative and cooperative groups for learning.

Principle 6: Faculty Work to Create Climates for Learning

- Create an environment of student accountability.

Principle 7: Faculty Do More with Feedback

The application of these principles can support a shift in the classroom from superficial surface learning to transformative deep learning. Surface learning (classical) focuses on the identification, memorization, and recall of facts and surface levels information. Deep learning (active), in contrast, emphasizes developing the cognitive constructs that link learning with existing knowledge, focuses on the understanding of complex processes of why and how, develops knowledge that is generalizable to other contexts and situations. Surface learning is frequently short term, knowledge gained for the test or class. Deep learning yields long lasting mental constructs.

Principles of Learning and Education Course**Module Two**

Lecture (3) Determinants of Learning

Learning Needs assessment and Adult Learning



Unit Two Learning Objectives

1. Identify the three components of what is known as determinants of learning
2. Describe the steps involved in the assessment of learning need
3. To identify key steps in the needs-assessment process
4. To select appropriate methods to gather data
5. To develop questions for selected needs-assessment techniques
6. To apply the needs-assessment process to specific situation.

Assessment of the learner includes attending to the three determinants of learning:

* **Learning Needs**

(WHAT the learner needs to learn)

* **Readiness to Learn**

(WHEN the learner is receptive to learning)

Can be defined as the time when the learner demonstrates an interest in learning the information necessary to maintain optimal health or to become more skillful in a job.

* **Learning Style**

(HOW the learner best learns)

Defined as the way the learners learn, taking into account cognitive, affective, and physiological factors that affect how learners perceive, interact with and respond to the learning environment.

A- WHAT is Needs Assessment?

It is the process of:

1. Identifying the training need which is defined by the gap between the actual and the desired level of performance (the gap between desired and actual knowledge, skills, and attitude)
2. Determining the cause, extent, and appropriate solutions for performance problems.
3. Providing the basis for the training design which is determined by the training needs

B- WHY Needs Assessment: (purpose)

- 1- Gives the justification (reason) for program development
- 2- Determines causes of poor performance

- 3- Ensures that the solutions(s) to performance problems address the real issue(s) and effectively focuses the appropriate resources, time, and effort toward a targeted solution.
- 4- Provides a basis of measurement .It is a baseline against which to measure results or changes..
- 5- Determines desired training outcomes by identifying
 - The knowledge, skills, and attitudes that must be addressed during the training.
- 6- Determines content and scope of training by identifying:
 - What type of training necessary to achieve results (workshop, self-study, or on the-job?)
 - What should be included in the program
 - How long the training program should be
 - When the training program should be
 - Who the target audience should be
 - Where the training program should be
 - The depth of content and experience required in the program
 - The degree of urgency for the program.

C- Needs Assessment Process

a- Whom to assess?

The people assessed depend on the goal and the required depth of the assessment.

- *Senior Management*
- *Human Resource Personnel: provides documents: related to performance evaluation of target population*
- *Customers (patients): provides data that can help pinpoint specific deficiencies, gaps between desired and actual behavior.*

b- How to Conduct the Needs Assessment

Step One: Identify Problem or Need

- Define the AIM (major goal) the training program should meet. It must state the desired performance or behavior and be measurable, observable, realistic, and “fixable.” Ex: Safety training to o reduce the staff accidents

Step Two: Determine Needs-Assessment Design.

To determine the true causes, not just the symptoms of the problem or need, employ several tools and techniques.

1. Choose data-collection methods on the basis of their appropriateness to the problem.
2. Assess advantages and disadvantages of methods

Step Three: Collect Data

Many methods are available for conducting a needs assessment. Many factors will determine which methods to select (time, cost, and #of people involved...).

➤ *Common Data-Collection Methods and Tools*

- Interviews

To get to the heart of the matter right away, ask a question that begins with “how” or “what” such as, “what would help you do your job better?”

- Questionnaires and Survey Instruments.

They save time, Yield more accurate information because they have been tested for validity and reliability.

- Observation

It involves a trained person observing others on the job. Observations are often used to validate information gathered by other methods such as interviews or questionnaires.

▪ **Needs assessment techniques**

Needs assessment techniques

1. **Discussion.** Ask learners what they need to learn
2. **Brainstorming.** Ask learners to identify all the specific situations in their life where they still have difficulty in a given tasks .
3. **Writing.** Have learners write about their goals and where they feel they need to improve them
4. **Interviews.** Have students interview each other about their goals and needs. Make a handout with a list of questions for them.
5. **Checklists.** Have learners fill out a checklist as to what they can do well and what they feel they need to learn more about.

Step Four: Analyze the Data

- Sort information into categories
- Do a statistical analysis. Look at the data in terms of mean (the average, calculated by adding all the values and dividing by the number in the group), mode (the number that occurs most frequently), and median (the middle number in a numerical listing) or percentages.
- Clarify and define the real problems.
Identify priorities, the needs assessment will probably result in a long list of training needs.

➤ ***Needs are prioritized based on the following criteria***

- **Mandatory:** Needs that must be learned for survival when the learner's life or safety is threatened
- **Desirable:** Needs that are not life-dependent but are related to well-being
- **Possible:** Needs for information that are “nice to know” but not essential or required because they are not directly related to daily activities or the particular situation of the learner

Based on an analysis of the data, make your recommendations for specific **major solvable problems with suggested interventions.**

Step Five: Provide Feedback

Design an action plan or strategies, and communicate your conclusions and recommendations to key personnel.

- Developing an action plan

After your proposal has been approved, map out a plan for the design, development, and delivery of the program(s) including learning outcomes or objectives. Include specific action items with a time line and appropriate task assignments.

Module Two
Developing Instructional design
Lecture (4) Educational plan



Unit (3) Learning Objectives

At the end of this unit the student should be able to:

1. Analyze the principles of learning in order to design learner oriented units of instruction.

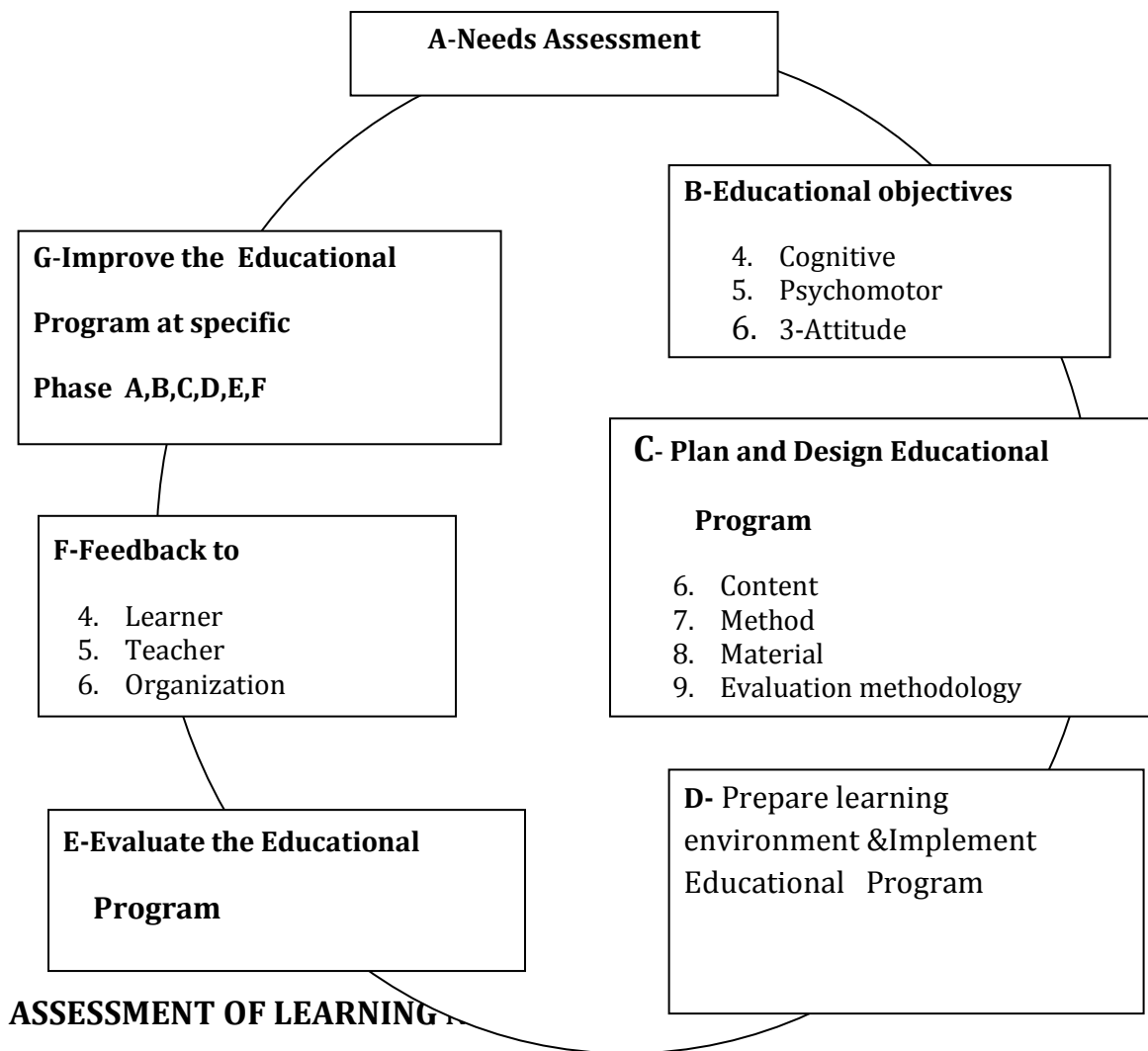
- 1.1. Comprehend meaning of instructional design and learner needs assessment
- 1.2. List component of educational process
- 1.3. Assess Learners needs for a given unit of instruction
- 1.4. Compare educational objectives
- 1.5. Appreciate how objectives guide teaching
- 1.6. list characteristics of quality educational objective
- 1.7. list components of educational objective:
- 1.8. write educational objective for a given unit of instruction
- 1.9. Differentiate domains of educational objectives
- 1.10. Relate action verbs for each domains
- 1.11. Recognize levels for each domains
- 1.12. Select an objectives for each domains for a given unit of instruction.

▪ **What is Instructional Design?**

Instructional design aims at giving decisions regarding the following aspects of the study:

- What will be accomplished ? (learning outcomes)
- What will be presented ? (content)
- How content will be communicated ? (methods and media).
- When content will be communicated ?(time of conducting &duration)
- Where content will be communicated ?(place or setting of conducting; theoretical and/or practicum)
- Who will do it? (assigned person; teacher, student, other

Figure 1.1.Educational process



Importance of Assessment of learner needs

- It is the first step in the instructional design process
- Serves as an objective way of uncovering human performance problems or potential problems.
- It is “A gap between what people know, do or feel and what they should know, do or feel to perform competently or to prepare for additional responsibility.
- It help teachers to develop a good sense of what would be beneficial for their learners to know or to do to perform competently

Example 3.1 : Needs assessment for developing management program

MANAGEMENT SKILLS AND TECHNIQUES

The purpose of this questionnaire is to provide the facilitator of this program with insights into your current skills and knowledge about the subject of managing others. By knowing what new skills and knowledge you would like from the program, the facilitator will be better able to meet your needs.

Name: -----

Current Position: -----

Bank: -----

City, State: -----

1. Previous positions held:
2. Formal education beyond high school:
3. What management courses, workshops, or seminars have you attended?
4. Briefly describe the responsibilities of your current position:
5. How long have you managed or supervise others?
6. How many people do you directly supervise or manage?

EDUCATIONAL OBJECTIVES



Once learning needs have been identified, the objective of the educational program should be stated

Definition of objectives:

Desired changes of the behavior or desired outcome which the teaching-learning process is meant to achieve)

Or

Objectives are statements that describe what the students will know and be able to do after completing the course.

Goals versus Objectives

Understanding the differences between a goal and an objective can be confusing.

Goals & Objectives

Goals	Objectives
Are broad, brief statements of intent that provide focus or vision for program planning .	Are more realistic, describe targets for the program
They are write in non-specific, non-measurable verbs as; <u>learn</u> , <u>understand</u> , <u>feel</u> , <u>know</u> and usually cannot be attained.	They are write in an active measurable tense and use strong verbs like <u>plan</u> , <u>write</u> , <u>conduct</u> , <u>produce</u> , <u>they can be attained</u>

Goals & Objectives

Goals	Objectives
Global	Specific
Broad	Singular
long-term	short-term
Multi-dimensional	Uni-dimensional

How objectives guide teaching

It provides direction for selecting content, teaching strategies and develops appropriate evaluation method.(see figure 1.2)

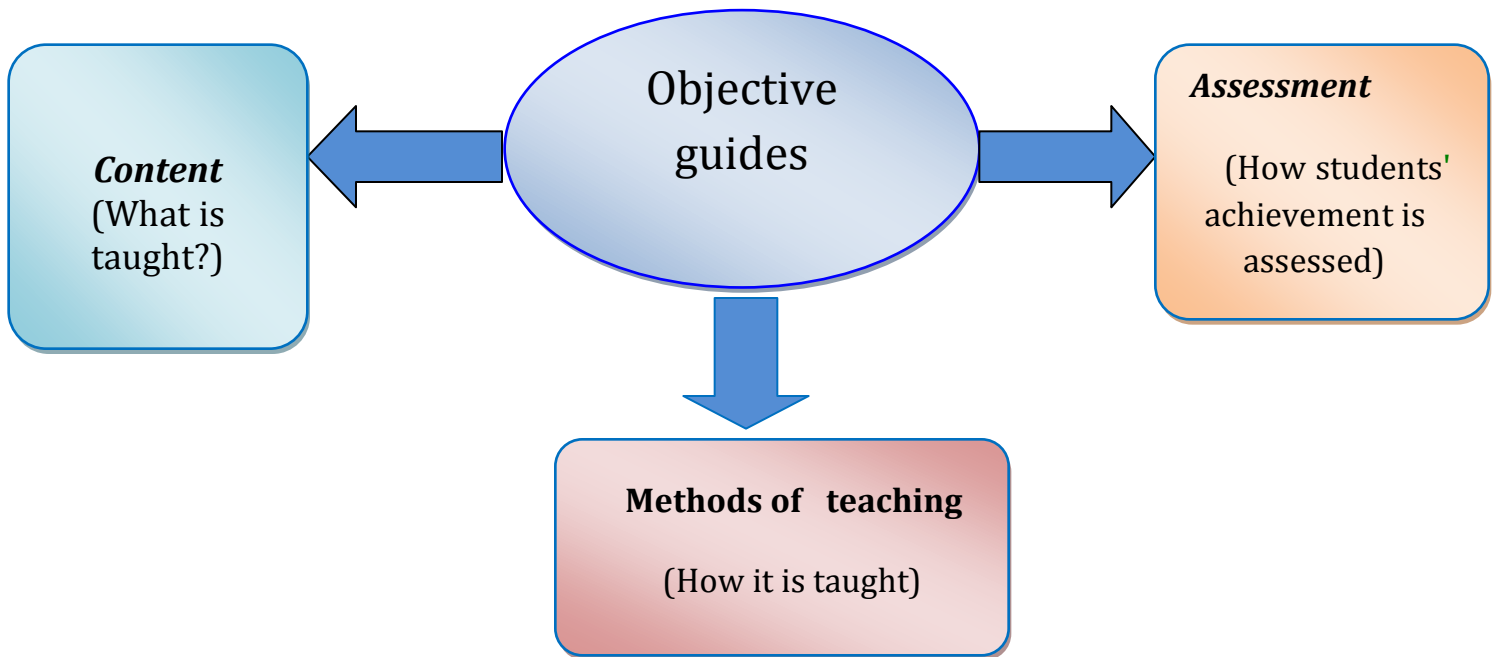


figure 1.2

Advantages to Writing Objectives

Advantages to Writing Objectives

Three Major Advantages to Writing Objectives :

- Provides basis for selection and design of instructional content, methods, and materials
- Provides learner with means to organize efforts toward accomplishing objectives
- Allows for determination as to the extent that objectives have been accomplished

▪ **Types of Educational Objectives**

Objectives are statements that describe what the students will know and be able to do after completing the course. Stating objectives is an important step in teaching and learning objectives have been classified into three types:

○ **General objectives:**

Reflect main professional functions which are broad statements and describe those objectives that the learner should be able to demonstrate at the end of the academic educational program. Example: Providing preventive and curative care to the individual and community, in health and in sickness. See also Example 1.1.

○ **Specific objectives:**

Precise professional tasks whose results are observable and measurable against given criteria. It should be stated for each course in order to reach the general objectives of the academic educational program . Specific objectives describe the performance demonstrated by the learner at the end of each course or units. **Example:** *Using the syringe to take a blood sample (5 ml) from the capital vein of an adult (criteria: absence of hematoma; amount of blood taken within 10% of the amount required; not more than two attempts).* See also Example 3.2.

In stating specific objectives; the verb will help to focus on what will be assessed For example “Students will be able **to do** research”. The verb **do** is

vague. Do you mean identify an appropriate research question, review the literature, establish hypotheses, use research technology, collect data, analyze data, interpret results, draw conclusions, recommend further research, or all of those? Each of the verbs in those statements is appropriately specific. The more specific objectives is easier to assess than the broad.

Example 3.2. Core Competency and Objectives for a Family Planning Course

Core Competency of Bachelor of Nursing BN Program

Nurses provide comprehensive, high-quality, culturally sensitive family planning services.

Course general Objective

After completion of this course, the student will be able to counsel patients about family planning methods and reduction of risk for STDs; assess, screen, and educate patients regarding family planning usage; and provide temporary methods such as condoms, and oral contraceptives and manage any side effects or complications.

Course specific Objectives

To meet this objective, students will:

1. Use effective communication techniques when counseling patients
2. Counsel patients about STD risk reduction
3. Select correct statements concerning the indications and precautions for using each of the contraceptive methods
4. Select correct statements concerning how family planning methods prevent pregnancy and their effectiveness
5. Counsel a patient interested in using a family planning method to make an informed choice
6. Perform a patient assessment, including a reproductive medical history and physical examination, when necessary⁷ and appropriate
7. Perform a pelvic examination
8. Determine suitability of the patient for each of the family planning methods

9. Provide pills, condoms, with appropriate patient instructions
10. Use recommended infection prevention practices and universal precautions in
11. the provision of family planning services to minimize the risk of spreading hepatitis B and HIV
12. Provide follow up management for each of the family planning methods, including management of side effects and other health problems

Example 3.3. Specific objectives

Broad:

Identify mental health problems in children; propose measures and participate in their application.

More specific:

- Determine the priority mental health problems in children of his own health sector.
- Coordinate health, administrative and educational resources available for dealing with mental health problems in children (particularly those

❖ **Class Activity. Matrix checklist 1.1 (10 minutes)**

Quality or characteristics of specific educational objective

Application of SMART at all goals and objectives will promote a strong program or project that are directed to the outcome . SMART means:

- **Specific:** The objective must be clearly defined. *“What exactly are we going to do, with or for whom”?*
- **Measurable:** The objective must be measured and the measurement source is identified. If the objective cannot be measured, the question of funding non-measurable activities is discussed and considered relative to the size of the investment. All activities should be measurable at some level. *“Is it measurable & can WE measure it”?*
- **Achievable** : The objective must be realistic given the market conditions, time period, resources allocated, etc. *“Can we get it done in the proposed timeframe/in this political climate/ for this amount of money”?*

- **Realistic or relevant:** The objective must be directly supports the outcomes of the program agency.” *Will this objective lead to the desired results”?*
- **Timely:** The objective must be stating clearly when the objective will be achieved “*When will be accomplish this objective”?*

Components of educational objective

Well-written and carefully worded objectives is an essential element to restrict the conditions and terms under which the objectives are met. Well-written objectives contains three components:

Objective = Conditions + Performance + Criteria

Learning objectives should specify both an observable behavior and the object of that behavior. Each course objective should include the following four Components of information:

○ **Condition (When)**

When to demonstrate the knowledge or perform the skill ie: the condition under which the behavior will be expected to occur. Course objectives should specify when the student should demonstrate the expected level of knowledge or skill, ie: After completing this module, after completing this course, after completing this clinical rotation, after completing this lesson.

○ **Performance (Who , what)**

The course objective states the person who will demonstrate competency. This will usually be the student or trainer. This is the heart of the course objective. It describes what the learner will be able to do at the end of instruction and be acceptable to the instructor as a

proof that learning has occurred. The statement should begin with an action verb, for example after completing of maternal child health course the student will:

- Assist with a normal childbirth
- Assess and classify the sick child
- Administer the chosen family planning method
- Provide counseling and testing services for people with HIV/AIDS

○ **Criteria (How)**

Quantitative or qualitative criteria against which learner's performance will be measured to determine successful learning, a course objective may or may not include an evaluation criterion. This is a description of **how well** the performance must be demonstrated, or the performance standard. This evaluation component is known as the objective's standard or criterion of performance.

Example 3.4: Components of an objective

At the end of their field research(**Condition (When)**), students will be able to write a research paper(**Who ,Performance (What)** in the appropriate scientific way (**Criteria, How**)

Table 10–1 THE FOUR-PART METHOD OF OBJECTIVE WRITING

Condition (Testing Situation)	Who (Identify Learner)	Performance (Learner Behavior)	Criterion (Quality or Quantity of Mastery)
Without using a calculator	the student	will solve	5 out of 6 math problems
Using a model	the staff nurse	will demonstrate	the correct procedure for changing sterile dressings
Following group discussion	the patient	will list	at least two reasons for losing weight
After watching a video	the caregiver	will select	high-protein foods with 100% accuracy

OR

Components of educational objective contains four components as following

- A—Audience e.g. (student)
- B----Behavior (action verb) e.g calculate the intake and output for the burn patient
- C—Condition (When, under what circumstances) e.g. after attending the discussion about
- D—Degree (how much, to what extent, criteria of evaluation) e.g. Correctly

Principles of Learning and Education Course

Module Three

Developing Instructional design

lecture (5) Educational plan. Cont,



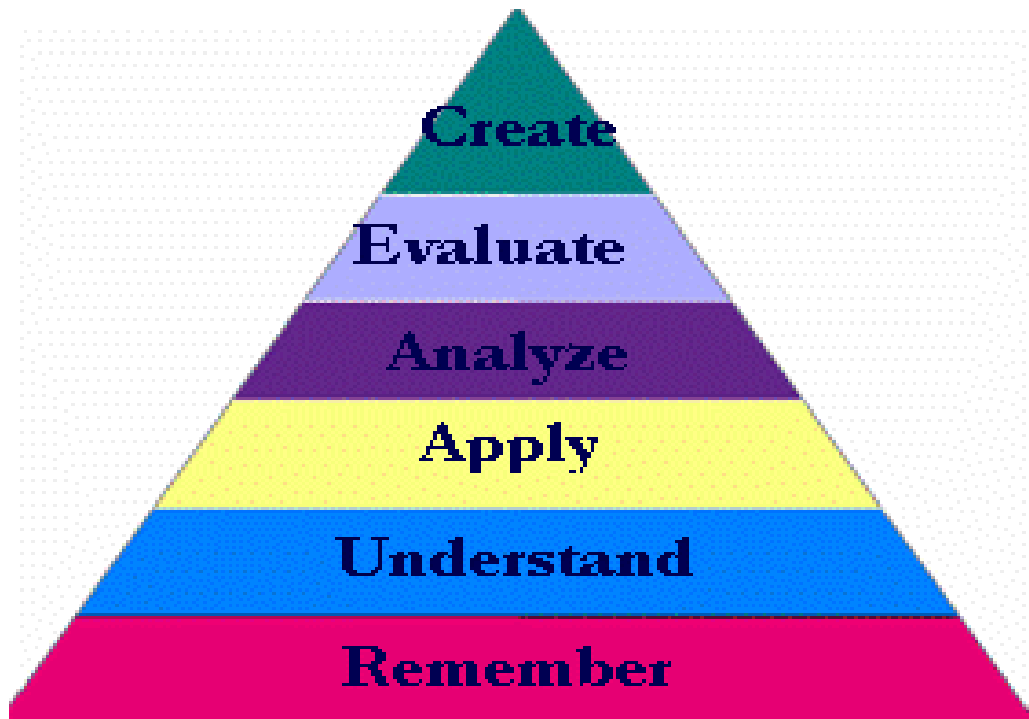
- **Taxonomy(classification) of objectives**

The original purpose of the **Taxonomy of Educational Objectives** was to provide a tool for classifying instructional objectives. The Taxonomy is hierarchical (levels increase in difficulty/sophistication) and cumulative (each level builds on and subsumes the ones below). The levels, in addition to clarifying instructional objectives, may be used to provide a basis for questioning that ensures that students progress to the highest level of understanding

Objective is defined according to type (domain category) and level of complexity (simple to complex). Behavioral objectives can be defined according to the type of learning domains in to :

1. Cognitive—the “thinking” domain
2. Affective—the “feeling” domain
3. Psychomotor—the “skills” domain

1. COGNITIVE—THE “THINKING” DOMAIN



**Bloom's learning domains
I- Cognitive Domain**

Bloom's learning domains

I- Cognitive Domain


Evaluation	judges the value of information
Synthesis	builds a pattern from diverse elements
Analysis	separates information into part for better understanding
Application	applying knowledge to a new situation
Comprehension	understanding information
Knowledge	recall of data

Cognitive Domain

Competence	Skills Demonstrated
Knowledge (Remember) Objectives written on the remembering level (<u>the lowest cognitive level</u>) requires the student to recall or recognize specific information.	<ul style="list-style-type: none"> • observation and recall of information • knowledge of dates, events, places • knowledge of major ideas • mastery of subject matter <p><i>Question Cues:</i>(verbs appropriate for objectives) list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.</p>
Comprehension (Understand) Objectives written on the understanding level, <u>although a higher level of mental ability than remembering, requires the lowest level of understanding from the student.</u>	<ul style="list-style-type: none"> • understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences <p><i>Question Cues: :</i>(verbs appropriate for objectives) summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend</p>
Application Objectives written on the	<ul style="list-style-type: none"> • use information • use methods, concepts, theories in new situations

<p>applying level require the learner to implement (use) the information.</p>	<ul style="list-style-type: none"> • solve problems using required skills or knowledge <p><i>Questions Cues: :(verbs appropriate for objectives)</i></p> <p>apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover</p>
<p>Analysis</p> <p>Objectives written on the analyzing level require the learner to break the information into component parts and describe the relationship</p>	<ul style="list-style-type: none"> • seeing patterns • organization of parts • recognition of hidden meanings • identification of components <p><i>Question Cues: :(verbs appropriate for objectives)</i></p> <p>analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer</p>
<p>Evaluation</p> <p>Objectives written on the evaluating level require the student to make a judgment about materials or methods</p>	<ul style="list-style-type: none"> • compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity <p><i>Question Cues:(verbs appropriate for objectives)</i></p> <p>assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize</p>
<p>Create</p> <p>Objectives written on the creating level require the student to generate new ideas, products and ways of viewing things</p>	<ul style="list-style-type: none"> • use old ideas to create new ones • generalize from given facts • relate knowledge from several areas • predict, draw conclusions <p><i>Question Cues: :(verbs appropriate for objectives)</i></p> <p>combine, integrate, modify, rearrange, substitute, plan, create, design, Predict, what if?, compose, formulate, prepare, generalize, rewrite, change, Construct,, Compose, Suggest</p>

2. AFFECTIVE—THE “FEELING” DOMAIN

II- Affective Domain		
	Internalizing Values	behavior which is controlled by a value system
	Organization	organizing values into order of priority
	Valuing	the value a person attaches to something
	Responding to phenomena	taking an active part in learning; participating
	Receiving phenomena	an awareness; willingness to listen

I- Affective Domain

The Affective Domain addresses interests, attitudes, opinions, appreciations, values, and emotional sets. If the teaching purpose is to change attitudes/behavior rather than to transmit/process information, then the instruction should be structured to progress through the levels of the

1. **Receiving.** The student passively attends to particular phenomena or stimuli [classroom activities, textbook, music, etc. The teacher's concern is that the student's attention is focused. Intended outcomes


include the pupil's awareness that a thing exists. Sample objectives: listens attentively, shows sensitivity to social problems. Behavioral terms: asks, chooses, identifies, locates, points to, sits erect, etc.

2. **Responding.** The student actively participates. The pupil not only attends to the stimulus but reacts in some way. Objectives: completes homework, obeys rules, participates in class discussion, shows interest in subject, enjoys helping others, etc. Terms: answers, assists, complies, discusses, helps, performs, practices, presents, reads, reports, writes, etc.
3. **Valuing.** The worth a student attaches to a particular object, phenomenon, or behavior. Ranges from acceptance to commitment (e.g., assumes responsibility for the functioning of a group). Attitudes and appreciation. Objectives: demonstrates belief in democratic processes, appreciates the role of science in daily life, shows concern for others' welfare, demonstrates a problem-solving approach, etc. Terms: differentiates, explains, initiates, justifies, proposes, shares, etc.
4. **Organization.** Bringing together different values, resolving conflicts among them, and starting to build an internally consistent value system--comparing, relating and synthesizing values and developing a philosophy of life. Objectives: recognizes the need for balance between freedom and responsibility in a democracy, understands the role of systematic planning in solving problems, accepts responsibility

for own behavior, etc. Terms: Arranges, combines, compares, generalizes, integrates, modifies, organizes, synthesizes, etc.

5. **Characterization by a Value or Value Complex.** At this level, the person has held a value system that has controlled his behavior for a sufficiently long time that a characteristic "life style" has been developed. Behavior is pervasive, consistent and predictable. Objectives are concerned with personal, social, and emotional adjustment: displays self reliance in working independently, cooperates in group activities, maintains good health habits, etc. Terms:

3. PSYCHOMOTOR—THE “SKILLS” DOMAIN

III- Psychomotor Domain		
	Origination	a learner's ability to create new movement patterns
	Adaptation	a learner's ability to modify motor skills to fit a new situation
	Complex Overt Response	the intermediate stage of learning a complex skill
	Mechanism	the ability to perform a complex motor skill
	Guided Response	the early stage of learning a complex skill which includes imitation
	Set	a learner's readiness to act
	Perception	the ability to use sensory cues to guide physical activity

▪ **Related Action Verbs to the three domains**

Below are verbs appropriate for writing objectives for the three domains.

Learning Type	Related Action Verbs
Attitude Development	Adjust, analyze , assess, choose, criticize, decide evaluate, pick, select.
Skill Development	assemble , compute , construct , copy , count demonstrate, design, develop, draw, measure operate, prepare, process, prove, record, repair solve, peak, transcribe, type, write.
Knowledge Development	Cite, compare, contrast, define, describe, detect Differentiate, distinguish, enumerate, explain Identify, list, name, quote, recite, recognize, relate Repeat, reproduce

Common Mistakes When Writing Objectives

- Describing what the instructor will do rather than what the learner will do
- Including more than one behavior in a single objective
- Forgetting to include all three characteristics
- Using performance terms subject to many interpretations and that are not action-oriented
- writing an unattainable, unrealistic objective
- writing objectives unrelated to stated goal
- cluttering an objective with unnecessary information
- making an objective too general so that the outcome is not clear

Table 10–2 SAMPLES OF WRITTEN OBJECTIVES

WELL-WRITTEN OBJECTIVES

After watching a demonstration on suctioning, the staff member will be able to correctly suction a tracheostomy tube using aseptic technique.

Following a class on hypertension, the patient will be able to state three out of four causes of high blood pressure.

On completing the reading materials provided on the care of a newborn, the mother will be able to express any concerns she has about caring for her baby after discharge.

POORLY WRITTEN OBJECTIVES

The patient will be able to prepare a menu using low-salt foods (*condition and criterion missing*).

Given a list of exercises to relieve low back pain, the patient will understand how to control low back pain (*performance not stated in measurable terms, criterion missing*).

The nurse will demonstrate crutch walking postoperatively to the patient (*teacher-centered*).

Principles of Learning and Education Course

Module Three

Lecture (6). Plan & design educational program_contents



Learning Objectives

At the end of this unit the student should be able to:

- 1. Organize learning experiences (contents) in a logical manner toward the desired goal.**
- 2. Utilize criteria of continuity, integration and sequence in developing course learning experiences(contents)**

An instructor must properly select and organize the learning material

There must be a plan of action to lead instructors and their students through the course in a logical manner toward the desired goal.

So when selecting Contents , we need to give attention to questions such as:

- What do you want the student to learn? (theoretical contents, practical contents, or both of them)
- How is it to be learned? (Selecting teaching methods, and learning materials)
- How much attention must be given to it? (Student's assignment)
- How will I know if it has been learned? (Student's assessment and course evaluation)

Organizing learning Contents

- Adults learn best when learning experiences are well organized. Maximizing the effect of organizing learning experiences depends on three major criteria:

1. Continuity:

It is the process of building on existing knowledge and skills to develop more comprehensive ability. (What is learned this term builds upon what was learned last term , what will be learned next year builds upon what is learned this year. This is sequence learning.

- * Process of sequence should proceed from general to specific and from simple to complex

2. Integration:

Relating what is taught in one part of development course to what is taught in another course or field

- * Effective organization provides for relating one course to another and one field to another, which reinforces the learning in each course or field.

This is done both by helping the student to use things learned in one course or field in another, and by helping him to perceive differences as well as similarities in the concepts, principles, attitudes and skills utilized in the various courses and fields

3. Sequence:

Indicates relationship between different levels of the same subject. This requires close connection between theory and practice. Without theory, practice becomes chaotic, On the other hand, without practice, theory becomes mere speculation. Hence the efforts to connect theory and practice more closely are important contributions in planning and organizing learning experiences.

Principles of Learning and Education Course

Module Four

Lecture (7). Teaching and Learning Strategies



Learning Objectives

At the end of this unit the student should be able to:

- 2. Develop skill in evaluating and critiquing several types of teaching methods.**
 - 2.1 Identify effective teaching strategies
 - 2.2 List specific consideration when selecting instructional methods
 - 2.3 Describe different types of instructional methods
 - 2.4 State most effective use for each instructional methods
 - 2.5 List advantage and disadvantage for each instructional methods
 - 2.6 Specify appropriate instructional methods for different learning domains
 - 2.7 Determine importance of active teaching strategies
 - 2.8 State active teaching strategies
 - 2.9 Explain active training strategies
 - 2.10 List cooperative learning strategies
 - 2.11 Find out instructional methods for the previously selected objectives of the three learning domains (Project)

Teaching and Learning Strategies:

After determining learning objectives, the next step is the selection of learning strategies or methods in relation to the desired objectives. Teaching Strategies or methods come in many forms: lecture, class discussion, small group discussion, and videotapes are among just a few types of teaching methods.

What is The Effective Teaching and Learning Strategies

When selecting teaching methods, remember that there is no one best method; however, do try to use a combination of strategies. In selecting methods of delivering instruction, give a consideration to the following:

- Subject matter
- Group's knowledge of the subject
- Learning objectives
- Available time
- Group size
- Kind of participation desired
- Equipment available
- Type of room.
- Cost
- Participant's learning styles and perceptual models.

A well-rounded class should be exposed to multiple teaching methods, not just one. Different students learn better in different ways there are visual learners, tactile learners, and auditory learners. Also, different subjects and topics are often more understandable when taught in different ways.

For adult learning, the most effective strategies is that permits interaction, discussion, exchange of viewpoints and participation

Selecting Teaching and Learning Strategies

Different teaching and learning strategies can be used, the educator must be carefully select the suitable methods for the stated learning objectives and outcomes .

☑ **Lecture**

The primary purpose of this mode of instruction is the delivery of information. . Lectures can also be used to give broad overviews of content or to inspire students to pursue the material in more depth.

Most Effective Common Use

Lectures are probably most useful for giving a general introduction to a topic area, which is then followed by more active individual work.

Cognitive Level

- primarily the lower cognitive levels of knowledge and comprehension.
- The lecture itself does not teach the students to analyze; it merely illustrates the process.

Advantages	Disadvantages
<ol style="list-style-type: none">1. The lecture can be used in any size class and is often the only option in large classes.2. A well-presented lecture can be motivating to the students and inspire them to pursue a topic on their own.3. The lecture is often the only way of presenting current material which is not available in print.4. The instructor has total control over what occurs in class.	<ol style="list-style-type: none">1. The lecture is a teacher-centered, which does not allow for differences in student learning styles or rates.2. Minimal student participation (promotes passivity in students).3. Learning from lectures depends on the students' abilities to take notes.4. Because the lecture is teacher-centered, it tends to promote one-way communication and the notion that truth resides in the instructor.

☑ **Discussion**

It is techniques used for pulling knowledge and ideas. It is characterized by probing questions from the instructor designed to elicit student interpretations, opinions, and questions. It can be applied as a small groups or larger group discussion composed of 5 to 7 individuals assigned to discuss a certain topic within certain time limit.

Most Effective Common Use

Discussion serves best when the students have a background in the content of the discussion. This might be through their coursework or because the discussion focuses on some common experience or problem. It is used when the instructor wants the students to practice analysis and evaluation or to examine opinions.

Cognitive Level

The discussion technique is often a hodge-podge of cognitive levels.

- When instructor questions are close-ended, factual questions, the discussion is at a low cognitive level and would more accurately be described as a content review.
- If the instructor formulates higher level questions, the discussion can provide the opportunity for learning analysis and evaluation skills. Finally,
- The discussion is a common method for allowing exploration of attitudes.

Advantages	Disadvantages
<ol style="list-style-type: none">1. The students are actively involved in processing information and ideas.2. Since student-initiated questions are more common in discussion classes, their needs and interests are dealt with more readily and spontaneously than in other methods.3. Because students play a more active role in discussion, student diversity of	<ol style="list-style-type: none">1. It the least effective method for conveying factual information.2. Discussion can be very time consuming and unfocused unless the instructor makes an effort to direct the flow.3. Because an instructor often has difficulty in getting the students involved.

backgrounds can be exploited in the generation of ideas, approaches and examples. 4. Students receive practice in formulating questions and communicating their ideas. 5. Discussion can be used to examine student interest	4. Class size must be restricted.
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☑ Case Study

In this method a situation drawn from real life is followed step-by-step to illustrate a general principle or problem solving strategy. For unsophisticated students, the case borders on a lecture in which the instructor leads the students through the steps of the procedure, giving the general principle and having the students identify the specific instance in the case materials they have at hand. For advanced students, the students themselves are expected to study the case materials and generate the illustrated principles and questions from the specifics. Class time is spent analyzing case materials through a series of instructor questions. At the end of the case, the instructor or a student summarizes.

Most Effective Common Use

Case studies are most useful when students are learning a process of information analysis or question asking. They are particularly beneficial if the students can go through several cases sequentially, during which the instructor begins by directing the process and gradually shifts to allowing the students to direct the process.

Cognitive Level

- some factual learning occurs, mostly in the form of general principles, the case method is primarily aimed at the application of general principles to specific instances or
- At the analysis and evaluation of the situation.

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. The students' level of involvement is much greater than in a lecture, and therefore, they are actively applying their learning. 2. Case study provides for a higher level of cognitive learning than a plain lecture. 3. Because the cases are drawn from real situations, they tend to be more interesting and often easier to follow. 4. Because the cases are from real life, the learning that occurs is generalized more readily to other real life situations. 	<ol style="list-style-type: none"> 1. Case preparation is time consuming for the instructor. 2. Students need time to scan the materials or outline main points 3. Students need a base of information about the process or problem area to get the most out of case studies. 5. Even though students are actively involved in the class, the instructor can still maintain a high degree of control over class flow through the questions asked. 4. Case study lends itself best to smaller classes

☑ Demonstration/Performance

The purpose of this method is to illustrate a general principle with a concrete example or to provide a model of a skill which students then practice. The instructor generally begins with a description of what is to be shown along with a list of main points on which the students should focus their attention. This is followed by the demonstration proper, accompanied by a running narrative describing what is happening. If the demonstration is to teach a skill, there then follows a period in which the students are given an opportunity to perform the procedure just demonstrated while the instructor circulates and offers suggestions and feedback.

Most Effective Common Use

Demonstrations are most useful to either highlight a principle for clarification or make it memorable or as a preliminary to student practice in a skill area.

Cognitive Level

The demonstration alone is aimed at comprehension or application of a general principle to a specific instance.

A demonstration/performance method is designed to teach a skill, such as a psychomotor skill or a procedure.

Advantages	Disadvantages
<ol style="list-style-type: none">1. Active student participation is a key to skill learning, and demonstration maximizes the efficiency of that participation by providing a good model.2. Student interest is usually very high both because they are actively involved and because they are dealing with something concrete which they can experience firsthand.3. The demonstration is often the only way of conveying the complex operations required in some skilled tasks.	<ol style="list-style-type: none">1. The procedure does not work well in large groups unless the details are large enough to be seen by all. (Demonstrations can, however, be videotaped and shown on monitors located around a large lecture hall.)2. Setting up demonstrations is very time consuming.3. Demonstrations don't always go as planned.4. If the students will be practicing the skills, the set up time and equipment costs are large.

☑ Simulation

This method engages the student in applying a process to a particular setting, not to learn the details of the setting but as a means for experiencing and practicing the process independently. Although the instructor sets up the problem, it is the students who decide how to tackle the problem with little or no direction from the instructor. The aim is to closely approximate what would happen in real life. It can be written simulation or simulated situation.

Most Effective Common Use

Simulations are best used to either introduce students to a new experience so that they will ask questions or to give them practice applying principles learned by some other method.

Cognitive Level

- Simulations are designed to give students practice in applying decision-making strategies to specific situations.
- Some simulations are designed assuming a certain knowledge base of the participants and are intended to expose the participants to experiences in such a way that they are led to ask questions and participate in an inquiry process.

Advantages	Disadvantages
<ol style="list-style-type: none">1. The learner is active in directing his or her own inquiry.2. Because they are based on real situations which a learner encounters , simulations tend to generate more interest in students.3. Simulations concentrate on learning the process of problem solving more readily than other techniques.4. Because they simulate real life situations, learning is more readily generalized from the classroom to the real world.5. Simulations can be very effective in developing students' attitudes, especially self-confidence and a questioning approach.	<ol style="list-style-type: none">1. Simulations are time-consuming to design and execute.2. The instructor does not have much control over which way a class period goes once the simulation begins.3. There is often no one "right" way for a simulation to proceed so the instructor must be prepared to handle a variety of circumstances.4. Unless adequately briefed beforehand and debriefed after the simulation, students can have difficulty understanding the objectives of a simulation.

☒ **Role Playing**

Acting out real-life situations in through simulation of real life character and situation ,scenario are develop for each character it used to illustrates a point or to provide individual with insight in to another viewpoint.

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Develops skills. 2. Opportunity to practice what is learned 3. Participants gain insight into own behavior 	<ol style="list-style-type: none"> 1. Some participants are resistant. 2. Contrived situations 3. Requires considerable planning.

☑ Pairs or Small Group Work

These methods are generally used as part of a larger course rather than as the only teaching method. In these situations students work in pairs or small groups on problems of application and analysis. The instructor prepares a description of the task beforehand and in class divides the large group into smaller work groups of 2 to 7 students. These students work together to complete the task as assigned. The instructor then reconvenes the large group and has the groups compare their solutions.

Most Effective Common Use

Group work is most effective when there is a clear cut task or problem to be solved because that makes it easier for the instructor to explain what the group is doing and for the group to monitor its own progress. It can be used as an adjunct to any of the other methods. It can also stand alone, but requires much more preparation and sophistication of the learners.

Cognitive Level

All kinds of material can be included in this type of instruction and it is efficient for:

- The exploration of attitudes are the most common and efficient uses of these methods
- For problems solving ,through the application of principles
- It used for the analysis of ideas

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Students are actively engaged with the material. 2. By working together, students learn from one another and become less dependent on the instructor. 3. Students can learn from the mistakes and successes of their colleagues. 4. Peer group pressure helps motivate students to prepare for class. 5. Group work more closely approximates the type of collaborative work needed in the real world. 6. Group solutions are often far superior to individual solutions. 7. The instructor can spend more time with those students or groups who need attention 	<ol style="list-style-type: none"> 1. Group work is time consuming and difficult to evaluate. 2. The physical setting of most classrooms works against group work. 3. The instructor must be willing to give up control of the class. 4. Some groups need more supervision than others. 5. Group activities need to be planned and explained carefully. 6. The instructor must be prepared to cope with the unexpected event.

☒ **Observation**

Watching others without directly participating; then giving constructive feedback

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Generates interest and enthusiasm. 2. Is less threatening than other methods 3. Promotes sharing of ideas and observations 	<ol style="list-style-type: none"> 1. Focus could easily shift from learning to entertainment 2. Demonstrators may not do adequate job 3. Requires skilled facilitator.

☒ **Games**

An activity governed by rules entailing a competitive situation. Advanced technology in learning and teaching strategies offers many interactive games

learning that covers many topics , most of them applicable for pediatric learning than adult learning .

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Promotes active learning. 2. Provides immediate feedback 3. Boosts interest 4. Stimulates excitement 5. Increases learning 6. Improves retention 	<ol style="list-style-type: none"> 1. Time-consuming 2. May lead to loss of facilitator control 3. Sometimes difficult to monitor 4. Some degree of risk

☑ Assignment sheet

Provide student with essential materials of a selected topics that can studied individually as a home work.

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Enables students to work at his own peace 2. Facilitates decision-making 3. Helpful for content that not need explanation by the teacher. 4. Allow teacher to save time that can then be spent on more complex activities. 5. Avoid bias transmitted by bad teacher 	<ol style="list-style-type: none"> 1. Necessitates special educational competence 2. No group dynamic 3. Not helpful for all types of students

Matching Learning Domain With Teaching Method

Table 4.1 lists various instructional methods for different Learning domain and learning outcomes

Learning Domain	Suggested Teaching Method
Cognitive Level	1. Knowledge
	<ul style="list-style-type: none"> • Text book • Lecture • Small group discussion • Games • Computer-assisted instruction • Videotape
	2- Understanding
	<ul style="list-style-type: none"> • Guided discussion • Small group discussion • Role play • Business games • Videotape • Computer-assisted instruction • Case studies • Demonstration / Dramatization
2. Attitudes / Values	<ul style="list-style-type: none"> • Guided discussion • Small group discussion • Role play • Dramatization • Business games • Case study • Videotape • Simulation • Debate
4. Skill Development	<ul style="list-style-type: none"> • On-the-job performance • Role play • Business games • Skill practice • Simulation • In-basket activity

Principles of Learning and Education Course

Module Four

Lecture (8) Implementing Instructional Design

Teaching Aids



At the end of this Lecture the student should be able to:

1. Appreciate the use of appropriate media in the implementation of instructional strategies.
 - 1.1 Recognize the supplemental nature of media's role in patient and staff education.
 - 1.2 Differentiate between instructional materials and instructional methods.
 - 1.3 Discuss general principles applicable to all types of media
 - 1.4 Cite the three major variables of choosing instructional materials required to effectively communicate educational messages.

- 1.5 Identify the three major components of instructional materials to be considered when selecting, developing, and evaluating instructional materials.
- 1.6 Identify the multitude of both print and non-print materials available for patient and professional education.
- 1.7 Describe the general guidelines for development of printed materials
- 1.8 Analyze the advantages and disadvantages specific to each type of instructional medium.
- 1.9 understand learning pyramid in relation to information retention based on level of active learner involvement. '
- 1.10 Construct effective media suitable for predetermined objectives and depending on such variables as the size of the audience, the resources available, and the characteristics of the learner (Project).

Instructional Materials

Whereas instructional methods or strategies are the approaches used to convey informational instructional materials are the vehicles by which information is communicated. Often these terms represent an interchangeably and are frequently referred to in combination with one another as teaching strategies and techniques. But instructional methods and instructional materials are not one and not the same.

A clear distinction can and should be made between them. Instructional methods are the way information is taught. Instructional materials, which include print and non print media and the accompanying hardware adjuncts effectively used to enhance teaching and learning, Instructional materials, also known as tools and aids, are mechanisms or objects to transmit information. It is imperative that the nurse educator understand the various types of audio and visual media available to efficiently and effectively complement teaching efforts. Instructional materials provide the nurse educator with tools to deliver messages creatively, clearly, accurately, and in a timely fashion

General Principles Applicable To All Types of Media.

Before selecting or developing media from the multitude of available options, educators should be aware of the following general principles regarding the effectiveness of tools:

- * The teacher must be familiar with the media content before a tool is used.
- * Print and non-print materials do change learner behavior by influencing a gain in cognitive, affective, and/ or psychomotor skills.
- * No one tool is better than another in enhancing learning.
- * The tools should complement the instructional methods.
- * The choice of media should be consistent with subject content and assist the learner in accomplishing predetermined behavioral objectives.
- * Media should match the available financial resources.
- * Instructional aides should be appropriate for the physical conditions of the learning environment, such as the size and seating of the audience, acoustics, space, lighting, and display hardware (delivery mechanisms) available.
- * Media should complement the sensory abilities, developmental stages, and educational level of the intended audience.
- * The message imparted by instructional materials must be accurate, valid, authoritative, up to date, state of the art, appropriate, unbiased, and free of any unintended messages.

Choosing Instructional Materials

Many important variables must be considered when selecting instructional materials.

The role of the nurse educator goes beyond the dispensing of information only; it also involves skill in designing and planning for instruction.

Making appropriate choices of instructional materials depends on a broad understanding of **three major variables**:

1. Characteristics of the learner:

Many variables are known to influence learning.

Therefore, it is important to know your audience so as to choose media that best suit the needs and abilities of various the learning domain (cognitive, affective, and/or psychomotor) You must consider sensor motor abilities, physical attributes, reading skills, motivational levels , learning styles, and cultural backgrounds.

2. Characteristics of the media:

A wide variety of media, print and non-print, are available to enhance methods of instruction for the achievement of objectives.

Print materials are the most common form through which the information is communicated, and non-print media include a full range of audio and visual possibilities. Since no single medium is most effective, the educator should be flexible in considering a multimedia "approach to complement methods of instruction.

3. Characteristics of the task:

Identifying the learning domain (cognitive, affective, and/or psychomotor) based on the predetermined behavioral objectives, and defines the tasks to be accomplished.

The Three Major Components of Instructional Materials

Delivery System

The delivery system includes both the software (physical form of the materials) and the hardware used in presentation of information. For instance, the educator giving a lecture might choose to embellish the information being presented using a delivery system, such as PowerPoint slides (software), and a computer (hardware). The choice of the delivery system is influenced by the size of the intended audience, the pacing or flexibility needed for delivery, and the sensory aspects most suitable to the audience.

More recently, the geographical distribution of the audience is a significant influence on choice of delivery systems, given the popularity of distance education modalities.

Content

Determine the order in which you will present the content. The following guidelines may help you make decisions about the order of content and activities. Think about the logical arrangement of topics based on knowledge of the subject.

- Past to Present
- Simple to Complex
- Known to Unknown
- Most Frequently Used to Least Frequently Used

Presentation

Weston and Cranston (1986) state that the form of the message, in other words, how information is presented, is the most important component for selecting or developing instructional materials. However, a consideration of this aspect of the media is frequently ignored. They describe the form of the

message as occurring along a continuum from concrete (real objects) to abstract (symbols).

Educator role in presentation

- Practice using your visual aids in advance
- Set up or prepare visual aids before students arrive
- Check that equipments is working before students arrive
- Capture the interest of students
- Make students aware of the objectives and presentation
- Create positive learning climate
- Demonstrate effective presentation skills (Table 5:1)
- Make sure that students can see the writing board, flip chart sand screen
- Charts, diagrams and tables should be large and simple
- Prepare hardcopies of handouts o Have question or exercise after using visual aids.

Types of instructional Materials

1- Written or printed materials

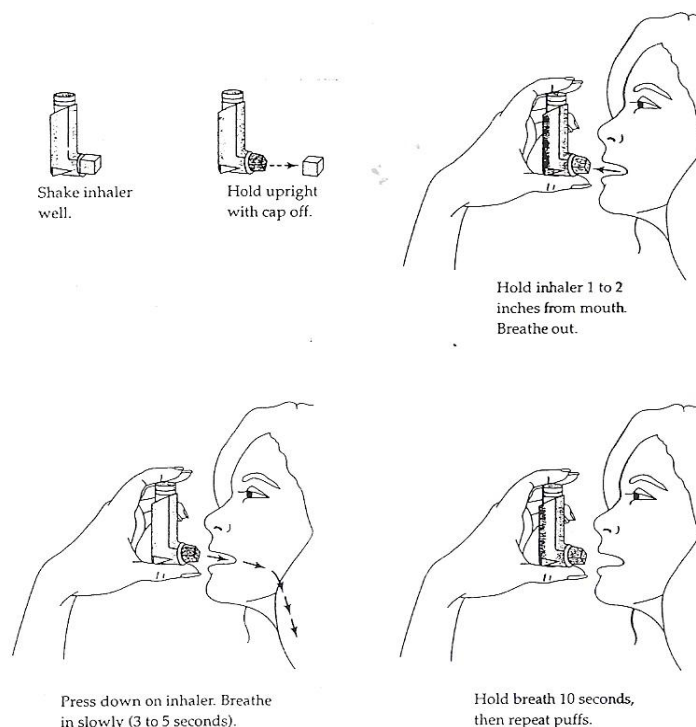
The most common form of teaching is written or printed tool because of the distinct advantages that they provide to enhance teaching and learning. written materials has been described as "frozen language" because it is the most accessible type of media used. Printed materials are useful for cognitive domain. Although printed materials includes:

- o Handouts
- o books
- o pamphlets
- o brochures
- o instruction sheets

General guidelines for development of printed materials

- Nature of the audience written materials should be stated according to nature of the audience. Adult audience tends to prefer printed materials that they can read at their leisure. Lengthy materials may be less problematic for adult learner who have time and patience to read educational materials. Children on the other hand like short printed materials with many illustrations.
- Literacy Level Required the effectiveness of patient education materials for helping the learner accomplish behavioral objectives can be totally undermined if the materials are written at a level beyond the comprehension of the learner. The Joint Commission on Accreditation of HealthCare Organization mandates that health information must be presented in a manner that can be understood by patients and family members. Figure 5.1 illustrates well presented written materials for the use of inhaler.

Figure 5.1 well presented written materials for the use of inhaler



· Advantages and disadvantages of written materials

Advantages	Disadvantages
Always available misinterpretation	less opportunity to clear up
Rate of reading is controllable by the reader may be overwhelming to the learner	Highly complex materials
Complex concepts can be explained both fully and adequately	Literacy skill of learner may limit effectiveness
Verbal instruction can be reinforced	Impersonal Limited feedback
Learner is always able to refer back to instructions given in print	
	Absence of instructor lessens

II- Demonstration Materials

Demonstration materials include many types of non-print media, Ideally, these media forms bring the learner closer to reality and actively engage him or her in a visual and participatory manner. As such, demonstration tools are useful for cognitive, affective, and psychomotor skill development.

Demonstration materials includes:

- Models and real equipment
- Displays, such as posters, diagrams, illustrations, charts, bulletin boards, flannel boards, flip charts, chalkboards, photo graphs, and drawings.
- Posters

From these various forms of demonstration materials, the educator can choose one or more to complement teaching efforts in reaching

predetermined objectives. Just as with written tools, these aids must be accurate and appropriate for the intended audience.

MODELS

Models are usually three-dimensional instructional tools that allow the learner to immediately apply knowledge and psychomotor skills by observing, examining, manipulating, handling, assembling, and disassembling objects while the teacher provides feedback. In addition, these demonstration aids encourage learners to think abstractly and give them the opportunity to use many of their senses

DISPLAYS

Chalkboards, white marker boards, posters, flip charts, bulletin boards, and flannel boards are examples of displays found in almost any educational setting. As they are two-dimensional objects, they are useful tools for a variety of teaching purposes to convey simple or quick messages and to clarify, reinforce; or summarize information on important topics and themes. As demonstration materials, these tools can effectively achieve behavioral objectives by representing the essence of relationships between subjects or objects. The chalkboard and flip charts and the more modern white marker board are particularly versatile in delivering information. These board devices are most useful in formal classes, group discussions, or during brainstorming sessions to spontaneously make drawings or diagrams or to jot down ideas generated from participants while the educator is in the process of teaching. Information can be added, corrected, or deleted quickly and easily while the learners are actively following what you are doing or saying. Such tools are excellent in promoting participation, keeping the learners' attention on the topic at hand, and noting and reinforcing the contributions of others.

The following are important guidelines suggested by Babcock and Miller (1994) for instructors using chalkboards and white marker boards:

- o Be sure writing is legible and discernible.
- o Step aside and face the audience after putting notations on the board to maintain contact with the audience.
- o Allow learners time to copy the message.
- o Enlist a good note taker to capture a creative design or record an idea before the board is erased.

POSTERS

Although posters are a type of display material, posters are being addressed separately because they have become an increasingly unique, popular, and important educational tool. Essentially hybrids of print and non-print media, they heavily employ the written word along with graphic illustrations. Posters are a legitimate and reasonable alternative to more direct, formal presentations for conveying information . As a visual supplement to oral instruction of patients and families in various clinical settings, posters are being increasingly accepted as an effective tool to educate staff and students at continuing education meetings and research conferences. Because the primary purpose of a poster is visual stimulation, it is meant to attract attention . Effective posters leave a mental image long after they are seen. This mental image is a cue to the viewer to remember the message being delivered.

The following tips should be adhered to when making and critiquing a poster for use as a teaching tool

- * Use complementary (opposite-spectrum) color combinations, taking into account the three color aspects of hue (wavelength of the light spectrum), saturation (purity of color), and value (brilliance of color). Two colors clash when they are close to each other in these three elements.

- * One color should make up as much as 70% of the display. No two colors should be used in equal proportions, and a third color should be used only to accent or highlight printed components such as titles, subheadings, or credits.
- * Balance script with white space (or another background color) and graphics to add variety and contrast. Use high-quality photographs with colored borders and of different contours, widths, and shapes.
- * Convey the message in common, straightforward language, avoiding jargon and unfamiliar abbreviations or symbols.
- * Adhere to the KISS principle (keep it simple and smart)
- * Keep objectives in mind for the focus of this display tool.
- * Be sure content is current and free of spelling, grammar, and mathematical errors..
- * Avoid using all-capital letters except for very short titles and labels. Use capitals for only the first letter of each word in titles with more than 2 to 3 words or with words longer than four to six letters.
- * Use a title or introductory statement that orients readers to the subject.
- * Logically sequence the written and graphic components.
- * Use arrows, circles, or directional lines to merge the parts to achieve correct focus, flow, sequence, and unity.
- * The ability of a poster to influence behavior or expand awareness can be greatly enhanced by careful consideration of its content, intended audience, and design elements

Advantages and disadvantages of demonstration materials.

Advantages	Disadvantages
Brings the learner closer to reality easily dated through active engagement	Content may be static,
Useful for cognitive reinforcement and consuming to make psychomotor skill development	Can be time
Effective use of imagery may impact affective domain	Potential for overuse
Many forms are relatively inexpensive large audiences	Not suitable use with
Opportunity for repetition visually impaired	Not suitable for
with poor	Learners or for learners
	Abstraction abilities

III-Audiovisual Materials

Audiovisual materials support and enrich the educational process by stimulating the senses of seeing and hearing adding variety to the teaching learning expert and instilling visual memories, which have been found to be more permanent than auditory memories. Audiovisuals have been known to increase retention of information by combining attitude change, and helping to build psychomotor skills Audiovisual materials can be categorized into five major types Projected learning resource

PowerPoint:

Microsoft's computer-generated software program, They are an excellent medium for conveying a message because they are an attractive mode for learning at all ages in a manner that facilitates retention and recall.

Presentations can be burned onto a disc or downloaded from a server for presentation through a portable laptop computer. Digital photographs and graphics can easily be scanned and added into PowerPoint slides. Animation also can be an additional feature. And finally, slides can be personalized or tailored to meet specific audience needs

The following suggestions should be adhered to when preparing a PowerPoint slide presentation:

- Illustrate one idea per slide.
- Keep -images simple by using clear pictures, symbols, or diagrams. Put long lists of words or complex figures on handouts that supplement the slides.
- Avoid distorted images by keeping the proportion of height to width at 2:3.
- Use large, easily readable, and professional-looking lettering.

Overhead Transparencies

This medium is still frequently used for teaching in a variety of settings, both in the classroom and for small-group presentations. Since the advent of PowerPoint, however, overheads are used less frequently. Most importantly, transparencies can be shown in fully lighted rooms, are inexpensive to produce or purchase, diagrams and figures can readily be photocopied and made into transparencies, and multiple transparencies can be laid over one another to illustrate changes in the content or build in progression of an idea. Among the disadvantages of overhead transparencies are the need for both specialized equipment for projection and the support of verbal feedback.

The following suggestions should be adhered when preparing a transparencies:

- Provide an outline for the teacher to follow in discussing the main points of a presentation.
- Transparencies are very useful for presenting a large amount of information
- Show images, illustrations, charts, or diagrams to support a topic.
- Provide visual support to students as they make their own presentations and oral reports.

2- Audio learning resource

Audiotapes and Compact Discs Cassette tapes and CDs

Are very popular formats today .Audio cassettes on a variety of health topics, from stress reduction to programs on how to quit smoking, It can be prepared specifically to meet the needs of a learner by reinforcing facts, giving directions or providing support.

Radio

The radio has tremendously affected all of our lives for many years and is one of the oldest forms of audio technology. Due to its commercial nature and appeal to mass audiences, it has typically been used more for pleasure than for education.

3- Video learning resource

Videotapes and DVDs,

Along with camcorders, videotape recorders, DVD recorders, television sets, and computer monitors as electronic devices 'th which to view them, have become commonplace in homes. Nurse educators are using these resources extensively for teaching in a variety of settings. For example, multimedia streaming video and webinar have satisfied the increasing demand for new ways to educate professional and paraprofessional staff in home care and hospice organizations. Videotapes and DVDs are one of the major non-print

media tools for enhancing patient, family, staff, and student education because tapes can be simultaneously entertaining and educational

4- Telecommunications learning resource

Telecommunications is a means by which information can be transmitted via television, telephone, related modes of audio and video teleconferencing, and closed-circuit, cable, and satellite broadcasting. Telecommunications devices have allowed messages to be sent to many people at the same time in a variety of places at great distances. Television and telephone IS the most common used recourses.

5- Computer learning resource

In our technology society, the computer has changed our lives dramatically. It is an efficient instructional tools in that educators has more time to teach other tasks not usually taught via computer such as psychomotor and affective skills.

Advantages and disadvantages of audiovisual materials

Advantages

May be especially beneficial for visually impaired, low-literacy patients

Most forms very practical, cheap, small, and portable

Flexible for use with different audiences

Powerful tool for role modeling demonstration

Disadvantages

some forms may be expensive

Needs sufficient delivery system

some purchased materials may be too long

Some purchased may be inappropriate for audience Time efficient

Some purchased material complex

How to select materials

The effectiveness of teaching and learning is greatly enhanced when instructional materials are used that stimulate multiple senses and modes of learning.

In making final media selections:

- Ask your- self which material will best support your particular audience.
- Remember that active learn involvement is best for retention of information.
- Above all else, remember that instructional materials should be used to support learning only by complementing and supplementing your teaching, not by substituting for it.

Principles of Learning and Education Course

Module Five

Lecture (9) Delivery Of Instructional Strategies



At the end of this unit the student should be able to :

- 1. Appreciate the importance of effective environment in promoting teaching and learning environment**
 - 1.1 Value importance of effective environment in promoting learning experience
 - 1.2 Recognize different environmental factors that affect learning and teaching process
 - 1.3 List how to prepare classroom learning environment
 - 1.4 Identify characteristics of effective simulated learning environment
 - 1.5 List how to prepare clinical practice learning environment
 - 1.6 Discuss how to create Interactive teaching and learning environment In and out of the Classroom
 - 1.7 Construct effective learning environment before and during presentation of assigned unit of instruction (project)

Effective Teaching\ learning Environment

In addition to planning for course, teacher needs to prepare the classroom and clinical teaching environment for the theoretical and practical aspects of teaching to ensure that students have adequate opportunities to learn theory and apply knowledge, skills, and attitudes in the classroom, practice skills in a simulated environment, and work with appropriate patients in clinical practice sessions.

❖ **Class Activity: Mental Imagery Exercise & group discussion of environmental factors that affects teaching and learning process.**

Delivery of Various Teaching Strategies

☑ Prepare Classroom Environment



The classroom should provide a good environment for learning. Consider the following questions:

1. Is the space large enough for the number of students? The classroom should be large enough for:

- A table in the front of the room for setting up visual aids and placing teaching materials
- Space for audiovisual equipment (e.g., flipchart, screen, overhead projector, computer if available) , the students should be able to see the projection screen and other visual aids
- Space for students to work in small groups.

2. Is the room properly heated or cooled and ventilated?
3. Is the lighting adequate? Make sure that there is enough light and the room can be darkened enough to show visual aids and still permit students to take notes.
4. Is the seating appropriate? Some classrooms have fixed seats; others have movable chairs and tables. Make sure everyone can see the teacher and the visual aids. Movable chairs and tables are ideal because they can be arranged to accommodate work in small groups and allow the teacher to move from group to group as needed.
5. Is there audiovisual equipment ? Make sure spare parts such as bulbs are readily available. The video monitor should be large enough so that all students can see it well. There should be enough electrical connections, and extension cords, electrical adaptors, and power strips (multi-plugs)

☑ **Prepare *Simulated Environment***



Simulated environments are places where students can work together in small groups, observe or participate in role plays, perform clinical simulations, watch videos, practice skills with anatomic models, or work on computers if available. Some teaching institutions may have the space and resources for setting up a formal simulated practice environment, these are sometimes referred to as Skills Development Labs.

However; simulated environment must be:

- Readily accessible to major users or students
- Designed, furnished, and equipped to meet a range of needs
- Attractive to students, staff, and others
- Permanently equipped with audiovisual facilities and other materials as:
 - Anatomic models such as breast, pelvic, injection arm models

- Learning materials such as related manuals or textbooks, checklists, supplemental exercises, videos, and computer software
- Supply additional topic-specific materials
- Physical supplies such as chairs and tables, place for hand washing or simulated hand washing, an additional light source, videotapes, flipchart stand, paper, and markers.
- Medical supplies such as examination gloves, required instruments and equipment, cloth sheet or drapes, cotton, gauze swabs, syringes, infection prevention supplies, and contraceptive samples.

○ **Prepare Clinical Practice Environment**



Skills practice may begin in the classroom with an introduction to the skill and as a demonstration in Skills Development Labs (SDL). Depending on the type of skill, it continues with opportunities for practice either in the classroom or in a simulated practice environment before student perform the skill with patients. Many teaching

institutions have arrangements with health facilities for clinical practice sessions. To ensure students exposure to effective clinical experiences,

The following questions must be consider when selecting settings for clinical practice:

- Is the environment consistent with the skills being taught? For example, If the clinical focus is teaching student leadership and management skills, the selected setting should be apply effective leadership and management skills.
- Is the staff receptive to supervising students? Most clinic staff are receptive to students coming to their work site to applying new skills they have been taught in that situation. If certain staff members do not want to host students, do not use them as clinical instructors because their unwelcoming attitudes can create a negative learning environment.
- Is there adequate space for the number of students? The clinical site should be large enough for both the students and teachers without affecting the quality of services. This includes being sure that patients, staff, and students can move through the clinic without interrupting patient flow and service provision. Whenever possible, divide the students into smaller groups and use a number of sites to avoid overcrowding one clinic.
- Are there enough patients? The number of patients should be enough to provide learning opportunities for all students. Are there appropriate types of patients? The types of patients are as important as the numbers of patients to meet students' learning objectives .For example, if you are assessing child nutrition, an outpatient department within a heavy pediatric caseload will be the best choice. In teaching maternal health, a sufficient number of births are essential for adequate clinical experiences.

- Is the site easily accessible for students and teachers? Is the site close to the teaching institution or easily accessible using public transportation? Will special arrangements need to be made for transportation? Select a site that is as easy to reach as possible. Table 6.1 provides a useful checklist for preparing teaching and learning Environment.

Table 6.1 : Checklist For Preparing The Teaching and Learning Environment

Steps For Preparing The Teaching Environment		
I- Preparing the classroom environment	Yes	No
1. Is the space large enough for the number of students?		
2. Is the room properly heated or cooled? Does it need a fan or space heater?		
3. Is there enough lighting?		
4. Does the seating need to be rearranged?		
5. Is the audiovisual equipment available and working?		
preparing the physical environment		
1. Is the space large enough for the number of students?		
2. Has a room been reserved for gathering students for discussion or small group activities?		
3. Are essential drugs, supplies, and equipment available?		
II- Clinical Practice		
1. Is the clinical practice session scheduled at a time convenient for clinical staff and when appropriate patients are available?		
2. Have the administration at the clinical practice site and related staff been notified of the students' arrival times?		
III- Patients		
1. Will there be enough patients for the number of students?		
2. Will the appropriate patients be available? Are they scheduled, if necessary, or will they attend the clinic during practice?		
3. Are alternative but related exercises or activities prepared in case there are periods of inactivity for the students?		

Delivery of Active Teaching Strategies

Active learning environment requires that students are engaged and active in the learning process. The instructor serves a coach or facilitator, guiding students through activities, but letting the students take control of the learning event itself. The goal of enhancing active learning environment is to promote cooperative and collaborative learning. The following paragraphs highlight different tips for creating active learning environment.

☑ Interactive teaching and learning environment In Classroom

- ☉ Class sessions can be structured around 25 minute blocks.

Each class should begin with:

- ✓ An entry task that explores previous knowledge and correction, assessment, and re-teaching of entry task or in place of an entry task, homework can be reviewed and used to assess student understanding. (15 minutes)

Each class should end with:

- ✓ Final discussion to summarize entire session and integrate the component parts (5 minutes)
 - ✓ Advanced organizer or preview for next class and readings (5 minutes)
- ☉ Presentation of new material:
 - ✓ Present new material (15 minutes)
 - ✓ Assess student understanding (10 minutes)

⊙ Presentation must includes

- ✓ Mental involvement
- ✓ Visual involvement
- ✓ Verbal involvement
- ✓ Physical involvement

⊙ Guided practice(group or whole glass working together)

- ✓ Guided practice (20 minutes)
- ✓ Closure to allow students to reflect on and communicate what they learned (5 minutes)

⊙ Independent practice (student works individually):

- ✓ Independent practice (20 minutes)
- ✓ Closure to allow students to reflect on and communicate what they learned (5 minutes)

☑ Interactive teaching and learning environment Out of Classroom

For every 1 hour of in-class time, students should expect to spend 2-3 hours outside of class on activities such as:

- ✓ Reading and research
- ✓ Additional independent practice(student works individually or group practice)
- ✓ Reflection and writing

Principles of Learning and Teaching Course

Module Five

lecture(10) Measuring Learning Outcomes

Evaluation

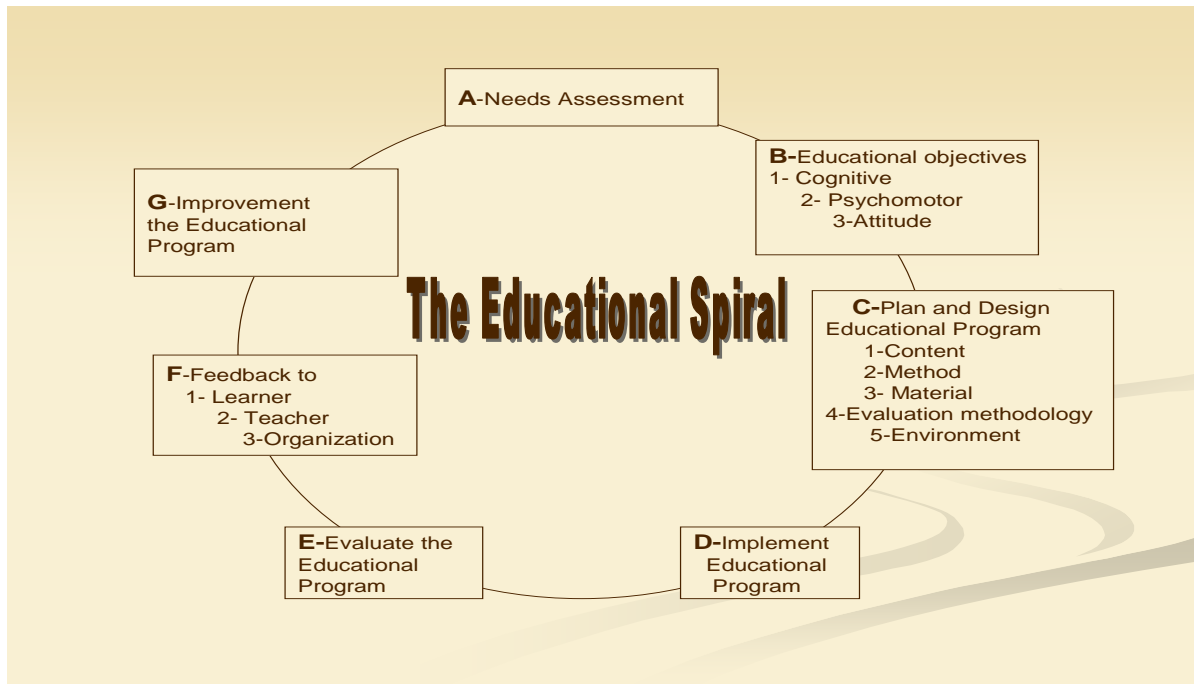


Objectives:

By the end of the lecture, the student will be able to:

- 1- Define evaluation in education
- 2- State purposes of evaluation (why we evaluate?)
- 3- List five basic components of evaluation
- 4- State what we want to evaluate?
- 5- Differentiate between evaluation and assessment
- 6- List steps of student evaluation
- 7- Identify different types of evaluation
- 8- Select appropriate evaluation Methodologies according educational objectives and domains to be evaluated
- 9- Mention qualities of test

Introduction



* Evaluation is defined as a systematic process by which the worth or value of something is judged.

* Evaluation in education can be defined as a continuous process based upon criteria which cooperatively developed and concerned with measurement of :

- The performance of learners.
- The effectiveness of teachers in relation to educational objectives
- The quality of the program

Purposes of evaluation (why we evaluate?)

1. Incentive to Learn (motivation)
2. Feedback to student
3. Modification of Learning Activities
4. Selection of students
5. Success or failure

6. Feedback to teacher
7. School public relations
8. Protection of society (certification of competence)

Five basic components of evaluation

Evaluation focus includes five basic components: (1) audience, (2) purpose, (3) questions (4) scope, and (5) resources (Ruzicki, 1987). To determine these components, ask the following questions:

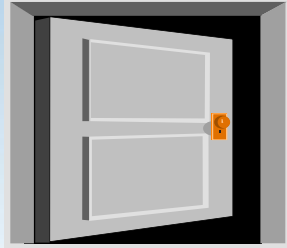
3. For what audience is the evaluation being conducted?
4. For what purpose is the evaluation being conducted?
5. What questions will be asked in the evaluation?
6. What is the scope or the evaluation?
5. What resources are available to conduct the evaluation?

Different between evaluation & Assessment

- While assessment and evaluation are highly interrelated and are often used interchangeably as terms, they are not synonymous. The process of assessment is to gather, summarize, interpret, and use data to decide a direction for action. The process of evaluation is to gather, summarize, interpret, and use data to determine the extent to which an action was successful.

- The primary differences between these two terms are those of timing and purpose. For example, an education program begins with an assessment of learners' needs. From the perspective of systems theory, **assessment data might be called the "input."** While the program is being conducted, periodic evaluation lets the educator know whether the program and learners are proceed as planned. After program completion evaluation identifies whether and to what extent the identified needs were met.

Assessment = Input



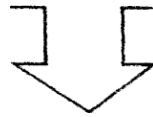
Evaluation = Output



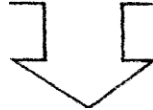
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Four steps of student evaluation

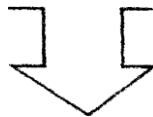
1. The criteria (acceptable level of performance) of the educational objectives



2. Development and use of measuring instruments



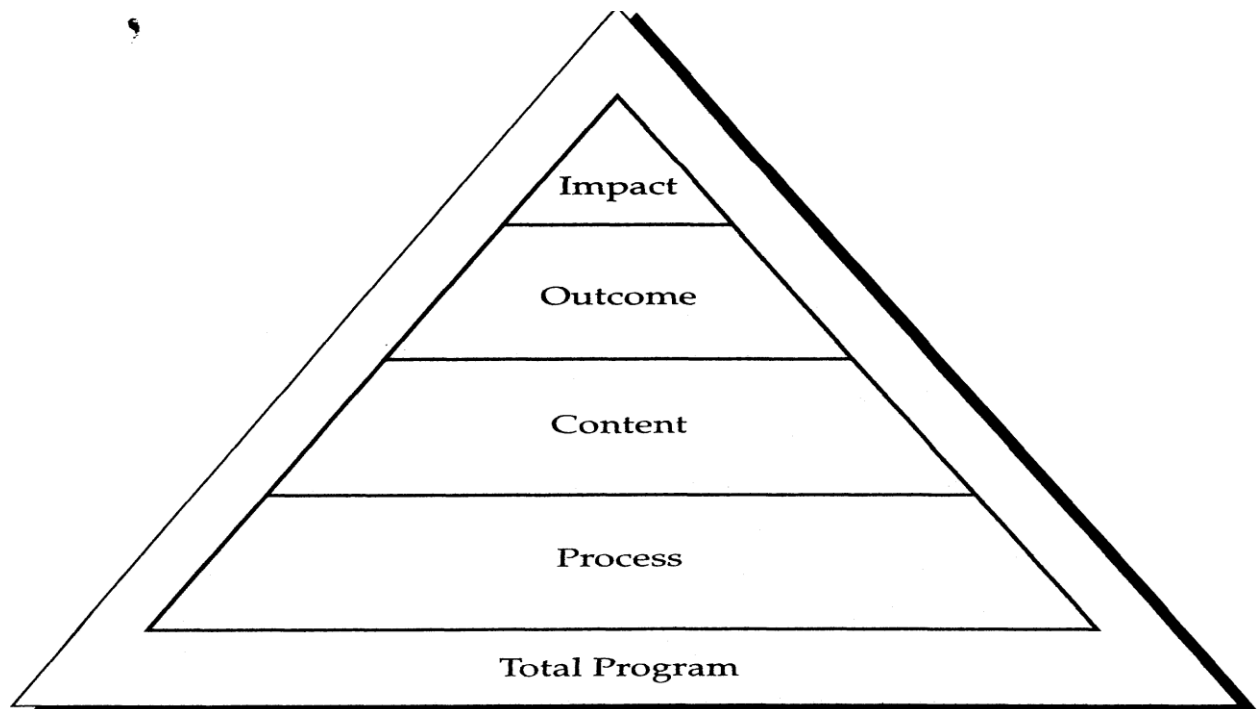
3. Interpretation of measurement data



4. Formulation of judgments and taking of appropriate action

Types of Evaluation

Five basic types of evaluation include process, content, outcome, impact, and program. These types ranged from the simple (process evaluation) to the complex (impact evaluation).



1. Process (Formative) Evaluation

- The purpose of this evaluation is to make adjustments in an educational activity as soon as they are needed, whether those adjustments be in personnel, materials, facilities learning objectives, or even attitude
- Adjustments may need to be made after one class or session before the next is taught , so process evaluation occurs more frequently during and throughout every learning experience than any other type.
- This ongoing evaluation prevent problems before they occur or identify problems as they arise

2. Content Evaluation

- The purpose of content evaluation is to determine whether learners have acquired the knowledge or skills taught during the learning experience, as taking place immediately after the learning experience to answer the question "To what degree did learners achieve specified objectives?"

Examples:

- Asking a patient to give a return demonstration immediately after observing it
- Asking participants to complete a cognitive test at the completion of a 1-day seminar.
- Content evaluation as the level is in between process and outcome evaluation levels. In other words, content evaluation can be considered as focusing on how the teaching-learning process affected immediate, short-term outcomes.

3. Outcome (Summative) Evaluation

- The purpose of outcome or summative evaluation is to determine the effects or outcomes of teaching efforts. Its intent is to sum what happened as a result of education.
- Outcome evaluation occurs after teaching has been completed or after a program has been carried out, it is focusing on measuring long-term change that persists after the learning experience.

Guiding questions in out- come evaluation include the following:

- Was teaching appropriate?
- Did the individual(s) learn?
- Were behavioural objectives met?

4. Impact Evaluation

The purpose of impact evaluation is to:-

- Determine the relative effects of education on the institution or the community. obtain information that will help decide whether
- Conducting an educational activity is worth its cost.
- The scope of impact evaluation is broader, more complex, and usually more long term than that of process, content, or outcome evaluation
- Outcome evaluation would focus on course objective, whereas impact evaluation would focus on course goal.

5. Program Evaluation

- The purpose of total program evaluation is to determine the extent to which all activities for an entire program over a specified period of time meet or exceed goals originally established.
- Example Guiding question appropriate for a total program evaluation from this perspective might be "To what extent did programs undertaken by faculty members of the nursing college academic departments during the year accomplish annual goals established by the departments?"

- The scope of program evaluation is broad, generally focusing on overall goals rather than on specific objectives.
- It is encompassing all aspects of educational activity (e.g., process, content, outcome, impact) with input from all the participants (e.g., learners, teachers, institutional representatives, community representatives).
- The time period over which data are collected may extend from several months to 1 or more years, depending on the time frame established for meeting the goals to be evaluated.

Evaluation Methodologies

Methods of evaluation must be selected according to educational objectives and domains to be evaluated . Below are different evaluation methods for each educational domains .

I- Cognitive Domain

1. Written test

- ✓ Objective type (Matching , Multiple choice , True & false , Short answers)
- ✓ Subjective type (Long answer , Simulation)

2-Oral test

- ✓ Observational rating scale
- ✓ Questionnaire

II. Attitude Domain

- Direct observation
- Rating scale
- Checklist

III. Psychomotor Domain

- Direct observation
- Practical tests
 - In real Situation
 - In simulation condition

Qualities of a test

- Directly related to educational objectives
- Realistic & practical
- Concerned with important & useful matters
- Comprehensive but brief
- Precise & clear

Module VI
Lecture 11
Test and types of test

By the end of this lecture, student will be able to:

1. Define test
2. State different types of test(objective and essay tests)
3. Identify strengths, limitations of true/false and Matching questions as types of objective test
4. Discuss Tips for writing each type
5. Apply the tips of the development of the above two mentioned questions through selective lectures of the course contents

Definition of test: (What is a test?)

- ❖ Test commonly refers to a set of items or questions under specific conditions
- ❖ Test is a systematic procedure for observing persons and describing them with either a numerical scale or a category (Aanthony j. Nitko)

Types of test:

1. Objective test (True& false questions, Matching questions, and multiple choice questions.
2. Essay test (short answer questions and long answer questions)

A . TRUE AND FALSE QUESTIONS

True-false questions are typically used to measure the ability to identify whether statements of fact are correct. The questions are usually a declarative statement that the student must judge as true or false.

Strengths:

- Can cover a lot of content in a short time (about two questions per minute of testing time)
- The question is useful when there are only two possible alternatives.

- Less demand is placed on reading ability than in multiple-choice questions.
- Scoring is easy and reliable.

Limitations:

- False statements provide no evidence that the student knows the correct answer.
- Scores are more influenced by guessing than with any other question type.
- Cannot discriminate between students of varying ability as well as other questions.
- Requires that the answer to the question is absolutely true or false.

Tips for writing true/false questions:

- Construct statements that are definitely true or definitely false, without additional qualifications.
- Use relatively short statements.
- Eliminate extraneous material.
- Keep true and false statements approximately the same length.
- Include an equal number of true and false questions.
- Test only one idea in each question.
- Have students circle T or F for each question rather than write the letter which can lead to debate.
- Avoid absolute terms such as, never or always.
- Do not arrange answers in a pattern (i.e., TTFFTTFF, TFTFTF).
- Avoid taking statements directly from text.
- Always state the question positively.

B. MATCHING QUESTIONS

Matching questions consist of a column of key words presented on the left side of the page and a column of options placed on the right side of the page. Students are required to match the options associated with a given key word(s).

Strengths

- Simple to construct.
- Short reading and response time, allowing more content to be included in a given set of matching questions.
- Highly reliable exam scores.
- Well-suited to measure associations between facts.
- Reduces the effects of guessing.

Limitations

- Difficult to measure learning objectives requiring more than simple recall of information.
- Difficult to construct due to the problem of selecting a common set of key words and options.
- If options cannot be used more than once, the questions are not mutually exclusive; therefore, getting one answer incorrect automatically means a second question is incorrect.

Tips for writing matching questions

- Provide more possible options than questions.
- Use longer phrases as questions and shorter phrases as options.
- Keep questions and options short and homogeneous.
- Avoid verbal cues and specific determiners (e.g., the, a, an).
- Number each question and use alphabetical letters for the options.
- Specify in the directions the basis for matching and whether or not responses can be used more than once.
- Make all questions and all options the same type (e.g., a list of events to be matched with a list of dates).

Principles of teaching and education

Module VI

Lecture 12

Test and types of test

By the end of this lecture, student will be able to:

1. Identify strengths, limitations of Multiple choice questions and essay types of test
2. Discuss Tips for writing each type
3. Apply the tips of the development of the above two mentioned questions through selective lectures of the course contents

A. MULTIPLE-CHOICE QUESTIONS

It is a method of assessment that asks students to select one choice from a given list. They typically have three parts: a stem, the correct answer – called the key, and several wrong answers, called distracters.

Multiple-choice questions are most widely used for measuring knowledge, comprehension, and application of learning outcomes.

There are a number of different ways multiple-choice questions can be presented. The classic approach is the simple stem question or completion format followed by options.

Strengths

- Highly structured.
- Good at measuring student achievement
- Incorrect alternatives provide diagnostic information.
- Scores are less influenced by guessing than true-false questions.
- Scoring is easy and reliable.
- Question analysis can reveal how difficult each question was and how well it discriminated between the strong and weaker students in the class

- Performance can be compared from class to class and year to year
- Can cover a lot of material very efficiently
- Avoids the absolute judgments found in True-False tests.

Limitations

- Constructing good questions is time consuming.
- Ineffective for measuring some types of problem solving.
- Scores can be influenced by reading ability.
- Difficult to determine why individual students selected incorrect responses.
- Often fails to test higher levels of cognitive thinking.
- Does not provide a measure of writing ability.
- May encourage guessing.

General guidelines for writing good multiple-choice questions:

Procedural rules:

- Use either the best answer or the correct answer format.
- Best answer format refers to a list of options that can all be correct in the sense that each has an advantage, but one of them is the best.
- Correct answer format refers to one and only one right answer.
- Format the questions vertically, not horizontally (i.e., list the choices vertically)
- Allow time for editing and other types of question revisions.
- Use good grammar, punctuation, and spelling consistently.
- Minimize the time required to read each question.
- Avoid trick questions.
- The ideal question will be answered correctly by 60-65% of the tested population.
- Have your questions peer-reviewed.

- Avoid giving unintended cues – such as making the correct answer longer in length than the distracters.

Content-related rules:

- Base each question on [student learning objective](#) of the course, not trivial information.
- Test for important or significant information.
- Focus on a single problem or idea for each exam question.
- Keep the vocabulary consistent with the students' level of understanding.
- Avoid providing cues from one question to another; keep questions independent of one another.
- Avoid questions based on opinions.
- Use multiple-choice to measure higher level thinking.
- Be sensitive to cultural and gender issues

B. ESSAY QUESTIONS

1. Short answer questions

- The short answer question requires students to supply the appropriate words, numbers, or symbols to answer a question or complete a statement.

Strengths

- Provides a wide sampling of content. So can cover more content area.
- Efficiently measures lower levels of cognitive ability.
- Minimizes guessing as compared to multiple-choice or true-false questions.

Limitations

- Difficult to phrase the question or incomplete statement so that only one answer is correct.
- Misspelling can be a problem, particularly when computer scored.
- Difficult to measure learning objectives requiring more than simple recall of information.

- Often include more irrelevant clues than do other question types.
- More time consuming to score than multiple-choice or true-false questions.
- More difficult to score since multiple answers may have to be considered if the question was not properly written.

Tips for writing short answer question

- Questions should require a single word answer or a brief and definite statement.

EXAMPLE

Indefinite: What is a red corpuscle? _____

Better: What structure in the blood carries oxygen to the cells of the human body?_____

Best: Which of the cells found in the human body carries oxygen to all other living cells?_____

- A direct question is often more desirable than an incomplete statement.
- Blank spaces should usually occur at the end of the statement rather than the beginning or within.
- If the question requires a numerical answer, indicate the units in which it is to be expressed.

2. Essay questions

- Essay exams are good to use when trying to determine what students know about a few broad topics. Essay exams typically consist of a small number of questions to which the student is expected to demonstrate his/her ability to:
 - recall knowledge
 - organize this knowledge
 - present the knowledge in a logical, integrated answer
- Students should be given the criteria used to grade the exams in advance to help them prepare for them.

Strengths

- Allows students to interpret and integrate their knowledge of course content.
- Easier and less time consuming to create than other question types.
- Provides a more realistic task for the student.
- Allows students to express individuality and creativity in their answers.
- Reduces guessing.
- Requires students to organize their own answers and to express them in their own words.
- Can efficiently measure higher order cognitive objectives.

EXAMPLE

Example question for each cognitive learning level:

Example question	Learning level
What are the five sections of a research report?	Knowledge
In one sentence give the point of a written passage.	Comprehension
Given the data available on an issue, take a position and defend it.	Evaluation
Given an argument for the abolition of guns, enumerate the positive and negative points presented.	Analysis
Construct an original work which incorporates five common materials in sculpture.	Synthesis
Write a short poem in iambic pentameter.	Application
Given two opposing theories, design an experiment to compare them	Evaluation

Limitations:

- Time consuming to score.
- Students may complain about subjectivity in scoring.
- Difficult to measure a large amount of content.

- Generally has low test and scorer reliability.
- Can encourage bluffing.

Tips for writing essay questions:

- Specify the length of the answer desired for each question (e.g., number of words or pages)
- Require all students to answer the same questions.
- Indicate the relative importance of each question (e.g., time to be spent or points assigned).

EXAMPLE

- (Points: 10) 1. In order for an authoritarian government to maintain its....
- (Time: 15 minutes) 1. In order for an authoritarian government to maintain its...
- State questions precisely, clearly focusing on the desired answer.

SUGGESTIONS FOR SCORING:

- Test the question yourself by writing an ideal answer to it. Develop your scoring criteria from this answer.
- Use either analytic scoring (point system) or holistic scoring **rubrics** (an overall score based on a set of criteria).
- Provide students the general scoring criteria by which they will be evaluated prior to the examination.
- Read and evaluate each student's answer to the same question before scoring the next question.
- The student's identity should remain anonymous during scoring.
- Keep scores of previously read questions out of sight.
- Decide on a policy for dealing with incorrect, irrelevant, or illegible responses.
- Write comments about the responses.

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