MODULE 9: GOALS AND OBJECTIVES

Cognitive Goals

At the completion of this module, the student-instructor should be able to:

9.1   Use his or her own words to define and describe goal, objective and performance agreement

9.2   Use his or her own words to identify and describe the ABCD parts of an objective

9.3   Use his or her own words to describe each of the three domains of learning: cognitive, affective and psychomotor

9.4   Use his or her own words to describe how to evaluate a planned learning activity (lecture, demonstration, etc.) to determine if there is performance agreement between the planned learning event and the course goals and objectives

9.5   If Module 8: Domains of Learning has been covered, the student should be able to determine the level (1-3) from the language of the objective based on ABCD elements

Psychomotor Goals

At the completion of this module, the student-instructor should be able to:

9.1   Take objectives supplied by the instructor and identify the A, B, C, and D components

9.2   Take incomplete objectives (lacking 1 or 2 of the ABCD components) and rewrite the objective to contain all of the necessary elements

9.3   Take a goal provided by the instructor and write at least one ABCD objective for each domain of learning

9.4   Compare goals and objectives provided by the instructor to determine if performance agreement exists

Affective Goals

At the completion of this module, the student-instructor should be able to:

9.1   Explain why goals and objectives are important to well designed learning

9.2   Explain how the evaluation of goals and objective for performance agreement enhances quality

9.3   If Module 8: Domains of Learning has been completed, the student should be able to explain why understanding the three levels within each domain are important in planning and executing instruction

Declarative

I. Why this module is important
   A. In order for instruction to have meaning, all educational materials should have goals and objectives
      1. Without goals and objectives the instructor would not know what to teach and the student would not know what they are expected to learn
   B. Entry level instructors may not be asked to write objectives, but they must be able to work with educational curricula that contain objectives
      1. Understanding the basic components of an objective will enable the instructor to determine if they are meeting their teaching goals
   C. If the instructor writes test questions the objectives will assist in the development of the test
   D. Objectives can help the instructor determine how much information should be covered on a given topic
      1. You can separate what is "needed to know" from what is "nice to know" and determine the depth and breadth of the material you are presenting
      2. The wording of a well-written objective will show you what level of understanding the student is expected to achieve
         a. Does the student need to master the material or only be familiar with it?
   E. Instructors must evaluate their classroom performance and objectives serve as the means to measure the effectiveness of teaching activities

II. Module terminology
   A. Goal
      1. Overarching, global statement of expected learning outcome
      2. It is usually without any discussion of methods required to accomplish it
         a. An example of goal statements can be found at the beginning of each module separate by domain of learning
   B. Objective
      1. Statement of expected learning in terms of behaviors students will exhibit
      2. An objective should clearly articulate the audience, expected behavior, condition under which that behavior will be performed and the measurement tool or strategy used to determine successful completion of the objective
      3. A well written objective should lead to the completion of the goal
   C. Performance agreement
      1. A process used by both instructional designers and classroom instructors
      2. An instructional designer compares objectives and goals to determine if the content to be delivered (as described and defined by the objectives) will meet the goal(s) established for the course

3. The classroom instructor uses performance agreement to ensure that the content found within the lesson plan and the content presented in the classroom match the goals stated for the lesson

III.   Basic principles of goals, objectives and performance agreement
  A. Mager is credited with the modern concept of educational goals and objectives (1962)
    1. The need for goals and objectives to be concrete (solid) measurable statements (with clearly identifiable outcomes) not "fuzzy" or nebulous statements
    2. The need for instructional designers to clearly communicate to teachers and students what behavior is expected in order to accomplish a goal
  B. Each objective should relate to at least one goal and each goal should be represented by at least one objective
  C. Course instructors use performance agreement principles to determine if they are teaching appropriate levels of content (depth and breadth) to their students
    1. Pre-presentation evaluation
      a. Compare lesson plan to what is written in the course goals and objectives
    2. Post presentation evaluation
      a. Review what was taught to determine if there were omissions
        i.   Cover in next class session or provide alternative learning opportunity
      b. Revise and enhance the lesson plan for the future
  D. Evaluate your performance through self-reflection, observations by other teaching professionals and through feedback from students
  E. You can also review student's performance on tests- but there are a lot of variables affecting testing performance so don't rely on it as the only measure of your success or failure

IV.   Common characteristics of goals
  A. Goals are global statements of intended learning
    1. They may be philosophical in nature (similar to a vision or mission statement)
    2. Does not communicate specific information on how to accomplish the goal or how to measure the expected behavior or performance
  B. A goal may or may not contain all of the ABCD elements (which are explained later in this module) commonly seen in an objective
  C. Example of a goal: The goal of this program is to provide the tools necessary to become an entry-level EMS instructor
  D. Also called primary objectives, first level objectives or expected learning outcomes

V.   Common characteristics of objectives
  A. Objectives are observable and measurable
    1. Every objective should articulate an expected behavior that can be observed
    2. It should describe how this behavior will be measured (for example when the objective states that a psychomotor skill must be performed to a specific level of competency)

B. Objectives are unambiguous
   1. The objective should be written in clear terminology (avoid jargon and define all terms the first time they are used)
   2. It should be apparent to both the student and instructor what behavior is expected to successfully complete the objective
C. Objectives are results oriented
   1. Objectives are different from goals because objectives describe specific expectations of performance, knowledge acquisition, feelings or attitudes
D. Objectives should be measurable by both quantitative and qualitative criteria
   1. Quantitative (quantity) criteria
      a. Successfully meeting the objective requires that the expected behavior be exhibited under the conditions specified
      b. Both student and teacher should know how that behavior will be measured
      c. Examples of quantitative criteria
         i. The lowest acceptable passing score
         ii. The number of attempts allowed during a skill test
         iii. A time limit imposed on a skill test
   2. Qualitative (quality) criteria
      a. Describes non-numerical observations with the purpose of expressing underlying dimensions or patterns of relationships
      b. Examples of qualitative criteria
         i. Value a concept or idea
         ii. Defend the need to perform a skill
         iii. Adopt a new behavior
   3. A performance level of 100% accuracy on quantitative or qualitative measures is not required for every objective
      a. May have an acceptable level of performance already established that allows the student to "miss" some elements but still pass the evaluation process
         i. Example: an acceptable minimum score for First Responder in a state is 70% so an instructor requires all student to achieve a score of at least 75% on all his quantifiable objectives
      b. May not have a required overall score for an objective
         i. There may be items or steps identified as "critical criteria" that would result in failure if performed
            a) Example: failure to use recommended BSI precautions before performing a skill
         ii. The order the steps of the procedure are performed is as important as the steps
            a) Example: not applying oxygen to your critical patient in a timely manner
E. Objectives should be written in terms of performance
   1. If an objective does not describe or define the expected behavior you cannot evaluate if learning has taken place
F. Objectives should communicate successful learning in behavioral terms

1. To have meaning, an objective should define the expected behavior change you are looking for to determine that learning has taken place
   G. Examples of expected behavior:
      1. Select from an assortment of EMS equipment and supplies those items required to perform spinal immobilization
      2. Demonstrate how to perform a database search on the Internet with a topic provided by the instructor
      3. State three reasons why it is important to take BSI precautions when providing patient care

VI. The domains of learning
   A. Module 8 provides in depth information on the domains of learning
      1. Even if you have already covered the information in Module 8, this section will provide a comprehensive review and is recommended material
   B. Learning takes many forms and can be categorized or grouped into domains (domains are logical chunks of related elements)
   C. Examples of types of learning:
      1. How we feel emotionally about an issue
      2. Recalling definitions of medical terms
      3. How we relate to each other
      4. Personal values and morals
      5. How we perform skills and procedures
   D. The grouping of these learning elements varies with different educational psychology models
      1. Cognitive, affective and psychomotor domains are used most frequently in the design of EMS instructional materials
         a. Domains of learning are based upon work done by Benjamin Bloom in the 1950s (Bloom called it the Taxonomy of Learning)
   E. Domains are divided into sub-sections that reflect the need for the students to have a deeper level of understanding (and sophistication) as they progress in the domain
      1. See Appendix for Bloom's Taxonomy
      2. The degrees of sophistication that require less depth of knowledge (for example when a student defines words or matches terms with meaning) are referred to as the "lower level or level 1" objectives
      3. Level 2 objectives are an intermediate level between 1 and 3
      4. "Higher level" learning requires students to think critically about a topic, debate it, and understand it in depth
         a. Level 3 objectives are considered the highest level
         b. Some strategies of classification also include level 2 objects in the "higher" level category
            i. What is most critical for the instructor is to recognize that an objective relates to a higher or lower order or process
   F. See appendix for "**Verbs to use when writing objectives**"
      1. Based upon Bloom's taxonomy and separates information into three discrete levels within each domain

VII.   Cognitive domain
    A. Emphasizes remembering or reproducing something which has presumably been learned
    B. Deals with what a learner should know about a subject
    C. The three levels within the cognitive level
        1. Level 1: knowledge (or recall), comprehension and application
        2. Level 2: analysis
        3. Level 3: synthesis, and evaluation

VIII.   Psychomotor domain
    A. Emphasizes muscular motor skill, manipulation of material and objects, or some act that requires neuromuscular coordination
    B. Concerned with how a learner moves or controls his or her body
    C. The lower levels in this domain will deal with skill performance with assistance or following a demonstration and progresses to "muscle memory," when the performance of the skill is done almost without conscious thought by the student
    D. The three levels within the psychomotor level
        1. Level 1: imitation and manipulation
        2. Level 2: precision
        3. Level 3: articulation and naturalization

IX.   Affective domain
    A. Composed of two different types of behaviors: reflexive (attitudes) and voluntary reactions and actions (values)
    B. This domain is often difficult to write objectives for and to evaluate if learning (expressed as a measurable change in behavior, value or attitude) has taken place
        1. Perhaps the best "teaching" you can provide to your students in the affective domain is to model the behaviors you want them to adopt
    C. The three levels within the affective domain
        1. Level 1: receiving and responding
        2. Level 2: valuing
        3. Level 3: organizing and characterizing

X.   Consider domains of learning when planning lessons and evaluating instructional techniques
    A. Before you teach, review the lesson plan and objectives to determine the depth and breath you must cover the material for that session
    B. After you teach, evaluate if the level taught was adequate for learning to take place
        1. Did it target the level specified in the objectives?
        2. Example 1: Your objectives state that the student should apply the information presented on therapeutic communications by describing how they would react in a scenario
            a. Class time was used to define terms but no time was spent role playing therapeutic communications

        b.   The material was not taught to the level the student will be tested

    3.   Example 2: Your objective states that the student should match a set of given directional terms to their correct definitions

        a.   The instructor taught all the medical terms in the textbook by the Latin word root, suffix, and prefix

        b.   Students had an extensive list of medical terminology and the class was several hours behind schedule

        c.   In this example the instructor went way beyond what was required by the objectives and threw off the schedule

XI.   Goals and objectives in lesson plans

   A. Goals and objectives are often presented in two distinct levels with objectives being subordinate to goals

   B. Goal

    1.   The first level identifies the overall goal of the instruction for the program or instructional event

    2.   In addition to simply being called a goal, it may also be called a "terminal objective" or "primary goal of instruction"

    3.   Goals do not contain specific information on how learning is to be accomplished or measured

    4.   Goals are philosophical statements of what learning is intended to produce

    5.   The statements found at the beginning of each module in this curricula are goals

   C. Objectives

    1.   The objective is subordinate to the goal and should relate to the goal

        a.   In completing the objective the student is moving toward meeting the goal

        b.   Sometimes these objectives are called "enabling objectives"

        c.   Because these are true objectives, they should follow the ABCD format described in this module

   D. Performance agreement

    1.   Performance agreement is a process of critically evaluating the goals, objectives and course content to force logical relationships to each other

    2.   Every goal should have at least one objective related to it

    3.   Every objective should relate to at least one goal

    4.   The content of the lesson should relate to the goals and objectives

    5.   There should not be any content that does not relate to goals and objectives

    6.   When the goals, objectives and content all relate to each other there is performance agreement

    7.   Methods to evaluate performance agreement are described later in this module

XII.   Examples of objectives

   A. Given a standard sentence, the English 101 student should be able to identify the noun and verb without error.

   B. Given an assortment of EMS equipment, the paramedic should be able to identify all of the equipment necessary to perform rapid sequence intubation without error.

C. The EMT-B participant in this pediatric workshop should be able to identify at least 4 warning signs of possible child abuse from a mock family member's interview that contains 8 warning signs.

D. From a listing of roles and responsibilities, the First Responder student should be able to identify all those pertinent to a First Responder level provider with at least 70% accuracy.

XIII. Parts of an objective
  A. Many methods, models, and templates are available on writing objectives
    1. An easy to remember generic model utilizes the letters A-B-C-D to indicate the important information to include in an objective
      a. A= Audience, B= Behavior, C= Condition and D= Degree
      b. Note that an objective does not have to be written in this order (ABCD) but it should contain all of these elements
    2. Two simple models to follow in writing an objective:
      a. The (Audience) will (Behavior) in (Condition) circumstance to (Degree) level
      b. Given (Condition) the (Audience) will (Behavior) to (Degree)

XIV. Audience
  A. Describe the receiver of the instructional activity
  B. Often the audience is identified only in the 1st level of objective (which is usually the goal) or the first objective in the series of objectives for that section
  C. Examples of audience statements
    1. The EMT-B student
    2. The EMT-I refresher course participant
    3. The prehospital care provider attending this seminar

XV. Behavior
  A. Describes learner capability
    1. What the receiver will be expected to do following the instructional event
  B. Must be observable and measurable
  C. If it is a skill, it should be a real world skill
    1. It should relate to current clinical practice
  D. The "behavior" can include demonstration of knowledge or skills in any of the domains of learning: cognitive, psychomotor or affective
  E. Examples of behavior statements:
    1. Should be able to write a report
    2. Should assemble the equipment necessary to perform needle thoracotomy
    3. Defend the need to use reasonable force for self-protection
  F. Terminology may be important here
    1. Wording like "should be able to" or "will be able to" carry different legal expectations and may be an issue to your organization
    2. This may only be an issue for someone who is writing objectives – if you are concerned about this, consult with your supervisor or a senior instructor

XVI. Condition
   A. The condition describes any circumstances that will impact upon the behavior the student will exhibit
      1. Equipment or tools that may (or may not) be utilized in completion of the behavior
      2. Environmental conditions or situations (temperature requirements, seasonal conditions, weather impact, swift water, time of day, etc.) may be included as conditions
      3. Time limits may be imposed as a condition for performance
   B. Examples of condition statements
      1. Given an oxygen wrench, regulator and D tank with oxygen
      2. Given the complete works of William Shakespeare
      3. Following the last ventilation given by BMW and within 30 seconds

XVII. Degree
      1. States the standard for acceptable performance (time, accuracy, proportion, quality, etc)
      2. In the event that the degree statement is not included in the objective you may infer that the acceptable standard for performance is 100%
      3. Examples of degree statements
         a. Without error
         b. 9 out of 10 times
         c. Without committing any critical errors

XVIII. Review of ABCD Objectives
   A. Well written objectives will tell you the following:
      1. Who is to exhibit the behavior (target audience)?
      2. What observable performance is the learner to exhibit?
      3. What conditions are provided for the learner at the time of evaluation?
      4. What constitutes a minimum acceptable response?

XIX. Evaluating goals, objectives and content for performance agreement
   A. Compare the content you intend to deliver to the course goals and objectives to determine if the content being delivered actually enables the student to meet the objectives
      1. If you cannot clearly see that the content being delivered meets the objectives then you must modify, enhance or remove content to meet the objectives as stated
   B. You need to determine if you are teaching too much or too little (depth and breadth) or if you are off the topic
      1. Review the verbs in the goals and objectives looking for clues of the level the statement is written to
   C. You should do this before and at the end of each presentation to determine if you are on target
      1. It is much easier to make minor adjustments as you go along than to wait until testing time to evaluate if you taught the material to the right level

Bibliographic References

Bloom, Benjamin S. et al. (1956). *Taxonomy of Educational Objectives, Book I: Cognitive Domain*. New York: Longman.

Hardt, U. H. (1977). *Determining goals, objectives and strategies for the domains of learning and instructional intents. A guide to lesson and unit planning*.

Hodell, Chuck. (1997) Basics of Instructional Systems Development. *ASTD Info-line, Issue 9706*.

Nooman, Z. M. Schmidt, H. G., & Ezzat E. S., Eds. (n.d*.). Innovation in Medical Education*. New York: Springer Publishing Company.

Novak, J. D. (1977). *A Theory of Education*. Ithaca Cornell University Press.

Smilkstein, R. (1993). Acquiring knowledge and using it. *Gamut*, 16-17, 41-43.