

MODULE 16: TEACHING THINKING SKILLS

Cognitive Goals

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

- 16.1 Differentiate between learning and knowing
- 16.2 List activities that foster thinking skills
- 16.3 Define high level thinking
- 16.4 Describe how “critical thinking” effects the practice of prehospital medicine
- 16.5 Describe the benefits of an active classroom or experiential learning

Psychomotor Goals

There are no psychomotor objectives for this module

Affective Goals

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

- 16.1 Acknowledge the importance in developing good judgement and thinking skills in students
- 16.2 Support activities that encourage high level thinking skills
- 16.3 Value the use of scenarios and simulations in the classroom

Declarative

- I. Why this module is important
 - A. Definition of terms
 1. Learning indicates that a person has been exposed to material, understands the material, and can or could recall the information
 2. Knowledge goes beyond recall and includes information processing, application to other situations, consideration of the meaning, and contrasting with other concepts
 3. Knowledge is clearly superior to learning in EMS because it creates images, ideas and solutions to problems even before the student has encountered the situation in reality
 - B. Using the term “critical thinking”
 1. This term is somewhat outdated and some educators consider it inaccurate in reflecting the behavior of problem solving
 2. Better terminology is to use wording that reflects higher levels of thinking skills
 - a. Targeting levels of Bloom’s taxonomy that deal with mastery of material
 - b. Refer to Bloom’s taxonomy handout in appendix and Module 8: Domains of Learning and Module 9: Goals and Objectives for more information
- II. Simulation and scenarios
 - A. Simulations include role-playing of a realistic patient situation in the classroom or other educational environment

- B. Simulations usually require a patient actor, responding crew, bystanders, and a facilitator (instructor) to give patient information that is not readily apparent
 - C. Realistic simulations are best but are time consuming
 - D. Ways to make simulations more realistic include
 1. Moving outdoors, to the hall, parking lot, bathroom, or other location
 2. Using moulage and makeup
 3. Using background noise
 4. Using props such as pill bottles, medical alert tags, dishes, food wrappers, medical supplies, newspapers, and other domestic products.
 5. Have simulated patients follow a script or role-play in character
 - E. Benefits of simulations include using all three domains of learning (cognitive, psychomotor, affective)
 - F. One of the most effective ways to measure affective domain
 1. Allow students to make mistakes in a “safe” environment
 2. Add to the student’s exposure to different types of patients and situations
 3. Help students reason through a problem in real time
 4. Improves communication skills
 - G. Suggested use of simulations in the classroom
 1. To open the class session, capturing their attention and providing a realistic example to refer to throughout the lecture
 2. At the conclusion of a class session to practice or evaluate their grasp of the material covered
 3. For remediation in clinical or field when a similar call has gone poorly
 4. During full day laboratory sessions which can either be random or by topic such as trauma, pediatrics, medical emergencies or cardiac emergencies, etc.
- III. Higher level thinking
- A. Higher level thinking is using experience, reflection, reasoning, and communication as a guide to belief or action
 - B. Begins to move the student into the “metacognitive” level of thinking when considering thought process equally important with thinking
 - C. Higher level thinking is desirable in EMS because it facilitates good judgment by relying on previously established criteria, is sensitive to the current context, and is self-correcting
 - D. Effective thinking does the following
 1. Welcomes problematic situations
 2. Uses active inquiry
 3. Tolerates ambiguity
 4. Searches for alternative solutions
 5. Requires reflection
 - E. Higher level thinking is driven by questions
 1. Allow students to ask questions of you, their classmates, themselves
- IV. Facilitating higher level thinking in class
- A. Support reading for information recall giving students questions to answer from their reading

- B. Begin lessons with case studies or scenarios
 - C. Have students conduct self-assessments of their performance and decision making skills
 - D. Call on students who do and do not raise their hands
 - E. Ask students to summarize passages, your lecture, or comments of other students
 - F. Ask students to explain or justify their decisions when they are correct and also when they have not made the best choice
 - G. Encourage students to ask questions in classroom setting
- V. Activities that foster thinking skills in class
- A. Scenarios and simulations
 - B. Case studies
 - C. Discussion
 - D. Journaling and writing
 - E. Debates
 - F. Position papers
 - G. On-line chat boards or discussion groups
 - H. Research presentations
 - I. Oral presentations
 - J. Current event discussions

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