Domains of Learning

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How we Learn

- Humans are lifelong learners. From birth onward we learn and assimilate what we have just learned into what we already know.

- Learning can be categorized into the domains of concept knowledge, how we view ourselves as learners, and the skills we need to engage in learning.

Three Learning Domains

Bloom et al. are well known for dividing categories of learning into the cognitive, affective, and psychomotor domains.

The cognitive domain involves the learning and application of knowledge.

The affective domain addresses the acquisition of attitudes and values, and

The psychomotor domain involves development of the body and skills it performs.

Utilizing the Domains

- Determine which activities, assessments, and representational modes (face-to-face, video, online, multimedia) are optimal based on the learning outcome desired.
- Utilized as a tool to understand how people think, feel, and act
- Develop instructional designs
- Develop test questions and/or scenario testing
- Evaluate effectiveness of lesson plan and/or teaching
- Evaluate progress of individuals
- Through understanding of domains greater congruence of educational goals

Learning domains

- This compilation divides the three domains into subdivisions, starting from the simplest behavior to the most complex.

- The divisions outlined are not absolutes.

Cognitive Domain

- The cognitive domain involves knowledge and the development of intellectual skills.
- The categories can be thought of as degrees of difficulties. That is, the first one must be mastered before the next one can take place .

Cognitive domain

- The cognitive domain is the core learning domain. The other domains (affective, interpersonal, and psychomotor) require at least some cognitive component

1- Knowledge

- Remembering (recalling) of appropriate, previously learned information.
- **Examples** :The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
- **Key Words** :defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states

2- Comprehension

- Understand the meaning, translation, interpolation, and interpretation of instructions and problems.
- **Examples:** Explain in one's own words the steps for performing a complex task. The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
- **Key Words** :comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, interprets, paraphrases, predicts.

3- Application

- Use a concept in a new situation or unprompted use of an abstraction.

- **Examples**: The student will write an instructional objective for each level of Bloom's taxonomy.

- **Key Words**: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses, acts, administrators, assesses, collects, charts, determines.

4- Analysis

- The breaking down of informational materials into their component parts, examining (and trying to understand the structure of) the information to make inferences, identify causes, find evidence.

- **Examples** :The student will compare and contrast the cognitive and affective domains..

- **Key Words** :analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates, correlates.

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5- Synthesis

- Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.
- **Examples** :The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains..

Key Words :categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes, adapts, anticipates, collaborates, compares.

6- Evaluation

- Judging the value of material on personal values/options, resulting in an end product, with a given purpose, without real right or wrong answers
- **Examples:** Select the most effective solution. The student will judge the effectiveness of writing objectives using Bloom's taxonomy.
- **Key Words:** appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets.

A mnemonic device for remembering the six levels of the Cognitive Domain :

Killing	Knowledge
Cats	Comprehension
Almost	Application
Always	Analysis
Seems	Synthesis
Evil	Evaluation

Affective Domain

- The affective domain includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes.
- The affective domain is critical for learning but is often not specifically addressed.

Affective domain

- "show up" for class
- participate in class, and
- become involved with the content.

1- Receiving (willing to listen)

- Willingness to hear, to receive or to learn. Selected attention. Willingness.
- **Examples** :Listen to others with respect.
- **Key Words** :asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits, replies, uses, replies.

2- Responding (willing to participate)

- Active participation on the part of the learners. Attends and reacts to a particular phenomenon.
- **Examples** :Participates in class discussions. Questions new ideals, concepts, models, etc. in order to fully understand them.
- **Key Words** :answers, assists, aids, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes.

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3- Valuing (willing to be involved)

- The worth or value a person attaches to a particular object, phenomenon, or behavior.

- **Examples**:   Shows the ability to solve problems. Proposes a plan to social improvement and follows through with commitment.

- **Key Words**: completes, demonstrates, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works, describes.

4- Organization (willing to be an advocate)

- Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system. The emphasis is on comparing, relating, and synthesizing values.
- **Examples**: Accepts responsibility for one's behavior. Accepts professional ethical standards. Creates a life plan in harmony with abilities, interests, and beliefs.
- **Key Words**: adheres, alters, arranges, combines, compares, completes, defends, explains, formulates, generalizes, identifies, integrates, modifies.

5- Internalizing values (willing to change one's behavior, lifestyle, or way of life)

- (characterization): Has a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most importantly, characteristic of the learner.

- **Examples** :Shows self-reliance when working independently. Cooperates in group activities (displays teamwork).

- **Key Words** :acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, verifies.

Psychomotor Domain

- The psychomotor domain includes physical movement, coordination, and use of the motor-skill areas.

- Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution.

Perception

- The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation .

- **Examples** Detects non-verbal communication cues. Estimate where a ball will land after it is thrown and then moving to the correct location to catch the ball.

- **Key Words** :chooses, describes, detects, differentiates, distinguishes, identifies, isolates, relates, selects.

Set

- Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations (sometimes called mindsets.

- **Examples:** Knows and acts upon a sequence of steps in a manufacturing process. Recognize one's abilities and limitations.

- **Key Words** :begins, displays, explains, moves, proceeds, reacts, shows, states, volunteers.

Guided Response

- The early stages in learning a complex skill that includes imitation and trial and error. Adequacy of performance is achieved by practicing .

- **Examples** :Performs a mathematical equation as demonstrated. Follows instructions to build a model. Responds hand-signals of instructor while learning to operate a forklift .

- **Key Words** :copies, traces, follows, react, reproduce, responds

Mechanism

- This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency .

- **Examples** :Use a personal computer. Repair a leaking faucet. Drive a car.

- **Key Words** :assembles, calibrates, constructs, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches.

Complex Overt Response

- The skillful performance of motor acts that involve complex movement patterns.
- **Examples** :Maneuvers a car into a tight parallel parking spot. Operates a computer quickly and accurately. Displays competence while playing the piano.
- **Key Words** :assembles, builds, calibrates, constructs, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches.

Adaptation

- Skills are well developed and the individual can modify movement patterns to fit special requirements .
- **Examples** :Responds effectively to unexpected experiences. Modifies instruction to meet the needs of the learners.
- **Key Words** :adapts, alters, changes, rearranges, reorganizes, revises, varies.

Origination

- Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.

- **Examples** :Constructs a new theory. Develops a new and comprehensive training programming. Creates a new gymnastic routine.

- **Key Words** :arranges, builds, combines, composes, constructs, creates, designs, initiate, makes, originates.

Psychomotor Domain

Perceiving   Premium
Patterning   Pandas
Accommodating   Acquire
Refining Varying   Rare
Improvising   Value
Composing   In
                      China

Writing Instructional Objectives

While it is possible to write instructional Objectives of all types for each of the three domains, the vast majority are written for the cognitive domain.

The major exceptions include preschool, physical education, and perhaps fine arts courses such as sculpturing and drama

Exam Question Content

- **Knowledge:** "Who, what, where, how?", Describe
- **Comprehension:** "Describe in your own words . . .", Match facts and ideas (matching)
- **Application:** How *is* ___ an example of ?, Why *is* ___ significant?
- **Analysis:** How *does* . . .? Why *does . . .*?
- **Synthesis:** What *would* you predict based on? What *would* you do for . . .?
- **Evaluation:** What criteria would you use to *evaluate*? What do you *think* about?

Teaching to the Domains

- **Cognitive**
  – Lecture
  – Discussion
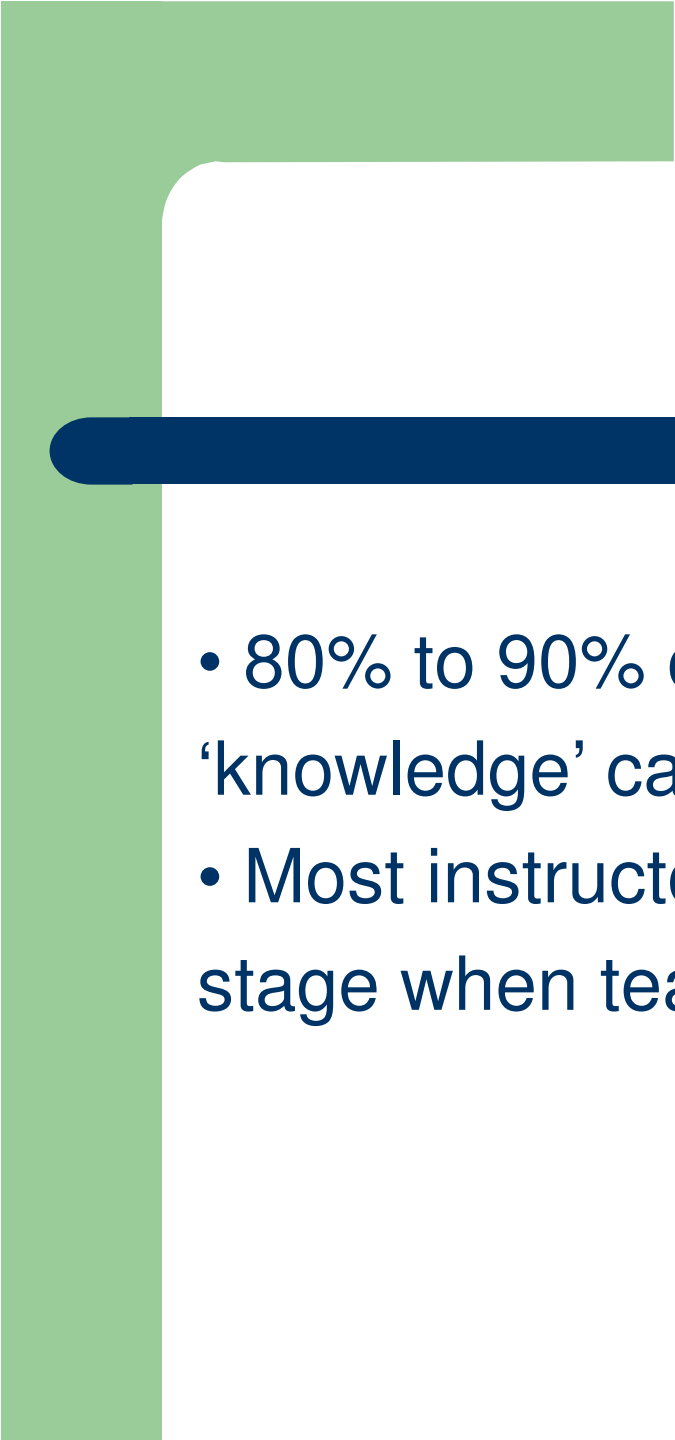 – Reading
  – Case studies drills
- **Affective**
  – Modeling
  – Role playing
  – Scenario based
  – Awareness
- **Psychomotor**
  – Skills practice
  – Scenarios
  – Simulations
  – Role playing

Assessment of Domains

- Domains are interrelated
- – e.g. psychomotor reinforces cognitive
- Cognitive and Psychomotor easiest
- Cognitive knowledge is not an indicator of competency of psychomotor ability
- Affective is difficult to evaluate

- 80% to 90% of questions asked are in the 'knowledge' category
- Most instructors never go past the application stage when teaching and evaluating students

Remember

- Quality education begins with you
  – What level of cogitation are you at?
  – What level of psychomotor are you at?
  – What is your affective state?
- Not all students are the same
- Teach to higher level then required
- EMS professionals require all three domains to function (the higher the better)