

Learning Domains based on Bloom's Taxonomy

The Three Types of Learning

There is more than one type of learning. Benjamin Bloom and colleagues identified three domains of educational activities. The three domains are cognitive, affective, and psychomotor. Cognitive is for mental skills (Knowledge), affective is for growth in feelings or emotional areas (Attitude), while psychomotor is for manual or physical skills (Skills). This taxonomy of learning behaviors can be thought of as "the goals of the teaching process."

This compilation divides the three domains into subdivisions, starting from the simplest behavior to the most complex. The divisions outlined are not absolutes and there are other systems or hierarchies that have been devised in the educational world. However, Bloom's taxonomy is easily understood and is probably the most widely applied one in use today.

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Cognitive

The cognitive domain involves knowledge and the development of intellectual skills. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. There are six major categories, which are listed in order below, starting from the simplest behavior to the most complex. 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.

1. Knowledge: Recall of data.

- Recite a policy.
- Quote prices from memory to a customer.
- Knows the safety rules.

Verbs: *define, know, match, outline, recall, select, state, list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, what, when, where, how*

2. Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.

- Rewrites the principles of test writing.
- Explain in one's own words the steps for performing a complex task.
- Translates an equation into a computer spreadsheet.

Verbs: *convert, defend, generalize, give examples, infer, rewrite, translate, summarize, describe, interpret, contrast, predict, distinguish, estimate, differentiate, discuss, extend, relate, clarify, explain*

3. Application: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.

- Use a manual to calculate an employee's vacation time.
- Apply laws of statistics to evaluate the reliability of a written test.

Verbs: *compute, construct, predict, produce, show, use, apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover, translate, interpret, dramatize*

4. Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.

- Troubleshoot a piece of equipment by using logical deduction.
- Recognize logical fallacies in reasoning.
- Gathers information from a department and selects the required tasks for training.

Verbs: *break down, contrast, diagram, deconstruct, illustrate, outline, relate, separate, analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, infer, distinguish, differentiate, solve, examine*

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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.

- Write a company operations or process manual.
- Design a machine to perform a specific task.
- Integrates training from several sources to solve a problem.
- Revises and process to improve the outcome.

Verbs: *categorize, compile, devise, explain, generate, organize, rearrange, reconstruct, relates, reorganize, revises, rewrites, summarizes, tells, writes, combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite, arrange*

6. Evaluation: Make judgments about the value of ideas or materials.

- Select the most effective solution.
- Hire the most qualified candidate.
- Explain and justify a new budget.

Verbs: *appraise, contrast, critique, defend, evaluate, justify, relate, assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize, appraise, evaluate, estimate*

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Affective

This domain includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. The five major categories listed in order are:

1. Receiving phenomena: Awareness, willingness to hear, selected attention.

- Listen to others with respect.
- Listen for and remember the name of newly introduced people.

Verbs: *ask, choose, describe, follow, give, hold, identify, locate, name, point to, select, sit, erect, reply, use*

2. Responding to phenomena: Active participation on the part of the learners. Attends and reacts to a particular phenomenon.

- Participates in class discussions.
- Gives a presentation.
- Questions new ideals, concepts, models, etc. in order to fully understand them.
- Know the safety rules and practices them.

Verbs: *answers, assist, aid, comply, conform, discuss, greet, help, label, perform, practice, present, read, recite, report, select, tell, write*

3. Valuing: The worth or value a person attaches to a particular object, phenomenon, or behavior. This ranges from simple acceptance to the more complex state of commitment. Valuing is based on the internalization of a set of specified values, while clues to these values are expressed in the learner's overt behavior and are often identifiable.

- Demonstrates belief in the democratic process.
- Is sensitive towards individual and cultural differences (value diversity).
- Shows the ability to solve problems.
- Proposes a plan to social improvement and follows through with commitment.
- Informs management on matters that one feels strongly about.

Verbs: *complete, demonstrate, differentiate, explain, follow, form, initiate, invite, join, justify, propose, read, report, select, share, study, work*

4. Organization: Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating an unique value system. The emphasis is on comparing, relating, and synthesizing values.

- Recognizes the need for balance between freedom and responsible behavior.
- Accepts responsibility for one's behavior.
- Explains the role of systematic planning in solving problems.
- Accepts professional ethical standards.
- Creates a life plan in harmony with abilities, interests, and beliefs.
- Prioritizes time effectively to meet the needs of the organization, family, and self.

Verbs: *adhere, alter, arrange, combine, compare, complete, defend, explain, formulate, generalize, identify, integrate, modify, order, organize, prepare, relate, synthesize*

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5. Internalizing values (characterization): Has a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most importantly, characteristic of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).

- Shows self-reliance when working independently.
- Cooperates in group activities (displays teamwork).
- Uses an objective approach in problem solving.
- Displays a professional commitment to ethical practice on a daily basis.
- Revises judgments and changes behavior in light of new evidence.
- Values people for what they are, not how they look.

Verbs: *act, discriminate, display, influence, listen, modify, perform, practice, propose, qualify, question, revise, serve, solve, verify*

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Psychomotor

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. The five major categories listed in order are:

1. Imitation: Observing and patterning behavior after someone else. Performance may be of low quality.

- Copying a work of art
- Mimicking a jump shot
- Attempts a mathematical equation as demonstrated
- Follows instructions to build model

Verbs: *assemble, follow, reproduce, attempt, mimic, respond, begin, move, sketch, calibrate, copy, start, carry out, organize, try, construct, practice, volunteer, dissect, proceed, duplicate, repeat*

2. Manipulation: Being able to perform certain actions by following instructions and practicing.

- Creating work on one's own, after taking lessons, or reading about it
- Executing a drive down the fairway
- Operating a car
- Changes the oil in a car
- Solving math problems using the method shown by a teacher
- Following the steps of the research process

Verbs: *acquire, operate, assemble, execute, pace, complete, improve, perform, conduct, maintain, produce, do, make, progress, use, manipulate*

3. Precision: Refining, becoming more exact. Few errors are apparent.

- Working and reworking something, so it will be "just right."
- Maneuvering a car into a tight parallel parking spot
- Operating a computer quickly and accurately
- Competently playing the piano
- Accurately using the most efficient process for solving a math problem

Verbs: *reach, transcend, achieve, exceed, refine, accomplish, excel, automates, succeed, advance, master, surpass*

4. Articulation: Coordinating a series of actions, achieving harmony and internal consistency.

- Producing a video that involves music, drama, color, sound, etc.
- Creating a new gymnastics routine
- Finding your own efficient method to solve a type of math problem
- Researching the answer to a significant question

Verbs: *adapt, excel, revise, alter, rearrange, surpass, change, reorganize, transcend*

5. Naturalization: Having high level performance become natural, without needing to think much about it.

- Michael Jordan playing basketball
- Albert Einstein solving physics problems
- Yo-Yo Ma playing a cello

Verbs: *arrange, construct, transcend, combine, create, originate, compose, design, refine*