

Taxonomy for Learning

Taxonomies for learning attempt to classify the nebulous terms that can be associated with learning. The taxonomy comprises 3 learning domains: Cognitive, Affective, Psychomotor. The cognitive domain focuses on the learning process associated with knowledge, the affective with attitudes, feelings, emotions and the psychomotor with skills. Within each domain there are 5-6 'categories', ranging from simple to more complex behaviors, each building on its predecessor. The 'descriptions and examples' describe the category and the 'action verbs' are the verbs associated with the category as we attempt to describe the level of learning we expect when writing learning outcomes.

Cognitive Domain:

Category	Description	Finer Descriptions and Examples	Action Verbs
Remember	Retrieve relevant knowledge from long-term memory	Locate knowledge in long-term memory that is consistent with presented material (e.g., Recognize the dates of important events in US history)	Recognize, identify
		Retrieve relevant knowledge from long-term memory (Recall dates of important events in US history)	Recall, retrieve
Understand	Construct meaning from instructional messages, including oral, written, and graphic communication	Changing from one form of representation (e.g., numerical) to another (e.g., verbal) (e.g., paraphrase important speeches and documents)	Interpret, clarify, paraphrase, represent, translate
		Finding a specific example or illustration of a concept or principle (e.g., Give examples of various artistic painting styles)	Exemplify, illustrate
		Determining that something belongs to a category (e.g., concept or principle) (e.g., Classify observed or described cases of mental disorders)	Classify, categorize, subsume
		Abstracting a general theme or major point(s) (e.g., Write a short summary of the events portrayed on a videotape)	Summarize, abstract, generalize
		Drawing a logical conclusion from presented information (e.g., In learning a foreign language, infer grammatical principles from examples)	Infer, conclude, extrapolate, interpolate, predict
		Detecting correspondences between two ideas, objects and the like (e.g., Compare historical events to contemporary situations)	Compare, contrast, map, match
		Constructing a cause-and-effect model of a system (e.g., Explain the causes of important 18 th century events in France)	Explain, construct, model
		Apply	Carry out or use a procedure in a given situation
Applying a procedure to an unfamiliar task (e.g., Use Newton's Second Law in situations in which it is appropriate)	Implement, use		
Analyze	Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose	Distinguish relevant from irrelevant parts or important from unimportant parts of presented material (e.g., Distinguish between relevant and irrelevant numbers in a mathematical word problem)	Differentiate, discriminate, distinguish, focus, select
		Determining how elements fit or function within a structure (e.g., Structure evidence in a historical description into evidence for and against a particular historical explanation)	Organize, find coherence, integrate, outline, parse, structure
		Determine a point of view, bias, values, or intent underlying presented material (e.g., Determine the point of view of the author of an essay in terms of his or her political perspective)	Attribute, deconstruct
Evaluate	Make judgments based on criteria and standards	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented (e.g., Determine if a scientist's conclusions follow from observed data)	Check, coordinate, detect, monitor, test
		Detecting inconsistencies between a product and external criteria, determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem (e.g., Judge which of two methods is the best way to solve a given problem)	Critique, judge
Create	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure	Coming up with alternative hypotheses based on criteria (e.g., Generate hypotheses to account for an observed phenomenon)	Generate, hypothesize
		Devising a procedure for accomplishing some task (e.g., Plan a research paper on a given historical topic)	Plan, design
		Inventing a product (e.g., Build habitats for a specific purpose)	Produce, construct

Reference: (Anderson, et al., 2001)

Affective Domain:

Affective	Description	Examples of activity or types of measure	Action Verbs
Receive	Open to experience, willing to hear	Listen to teacher or trainer; take interest in session or learning experience; take notes; make time for learning experience; participate passively	Ask, listen, focus, attend, take part, discuss, acknowledge, hear, be open to, retain, follow, concentrate, read, do, feel
Respond	React and participate actively	Participate actively in group discussion/activity; interest in outcomes; enthusiasm for action; question and probe ideas; suggest interpretation	React, respond, seek clarification, interpret, clarify, provide other references and examples, contribute, question, present, cite, become animated or excited, write, perform
Value	Attach values and express personal opinions	Decide worth and relevance of ideas, experiences; accept or commit to particular stance or action	Argue, challenge, debate, refute, confront, justify, persuade, criticize
Organize or Conceptualize Values	Reconcile internal conflicts; develop value system	Qualify and quantify personal views; state personal position and reasons; state beliefs	Build, develop, formulate, defend, modify, relate, prioritize, reconcile, contrast, arrange, compare
Internalize or Characterize Values	Adopt belief system and philosophy	Self-reliant; behave consistently with personal value set	Act, display, influence, solve, practice

Adapted from <http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm>

Reference: (Krathwohl, Bloom, & Masia, 1964)

Psychomotor Domain:

Category	Description	Examples	Action Verbs
Imitation	Copy the action of another; observe and replicate	Watch teacher or trainer and repeat action, process or activity	Copy, follow, replicate, repeat, adhere
Manipulation	Reproduce activity from instruction or memory	Carry out task from written or verbal instruction	Re-create, build, perform, execute, implement
Precision	Execute skill reliably, independent of help	Perform a task or activity with expertise and to high quality without assistance or instruction; able to demonstrate an activity to other learners	Demonstrate, complete, show, perfect, calibrate, control
Articulation	Adapt and integrate expertise to satisfy a non-standard objective	Relate and combine associated activities to develop methods to meet varying, novel requirements	Construct, solve, combine, coordinate, integrate, adapt, develop, formulate, modify, master
Naturalization	Automated, unconscious mastery of activity and related skills at strategic level	Define aim, approach and strategy for use of activities to meet strategic need	Design, specify, manage, invent, project-manage

Adapted from <http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm>

Reference: (Dave, 1972)