

# Revised Bloom's Taxonomy

A group of cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists published in 2001 a revision of Bloom's Taxonomy with the title [\*A Taxonomy for Teaching, Learning, and Assessment\*](#). This title draws attention away from the somewhat static notion of "educational objectives" (in Bloom's original title) and points to a more dynamic conception of classification.

The authors of the revised taxonomy underscore this dynamism, using verbs and gerunds to label their categories and subcategories (rather than the nouns of the original taxonomy). These "action words" describe the cognitive processes by which thinkers encounter and work with knowledge.

A statement of a learning objective contains a verb (an action) and an object (usually a noun).

- The **verb** generally refers to [actions associated with] the intended **cognitive process**.
- The **object** generally describes the **knowledge** students are expected to acquire or construct. (Anderson and Krathwohl, 2001, pp. 4–5)

The **cognitive process dimension** represents a continuum of increasing cognitive complexity—from remember to create. Anderson and Krathwohl identify 19 specific cognitive processes that further clarify the bounds of the six categories (Table 1).

**Table 1. The Cognitive Process Dimension – categories, cognitive processes (and alternative names)**

UPCOMING EVENTS ▾

TEACHING ▾

RESOURCES ▾

GRAD STUDENTS & POSTDOCS ▾

**Remember**

recognizing  
(identifying)

recalling (retrieving)

**Understand**

interpreting  
(clarifying,  
paraphrasing,  
representing,  
translating)

exemplifying  
(illustrating,  
instantiating)

classifying  
(categorizing,  
subsuming)

summarizing  
(abstracting,  
generalizing)

inferring (concluding,  
extrapolating,  
interpolating,  
predicting)

comparing  
(contrasting,  
mapping, matching)

explaining  
(constructing models)

**Apply**

executing (carrying  
out)

implementing (using)

**Analyze**

differentiating  
(discriminating,  
distinguishing,  
focusing, selecting)

organizing (finding,  
coherence,  
integrating, outlining,  
parsing, structuring)

attributing  
(deconstructing)

**Evaluate**

checking  
(coordinating,  
detecting, monitoring,  
testing)

critiquing (judging)

**Create**

generating  
(hypothesizing)

planning (designing)

producing (construct)

The knowledge dimension represents a range from concrete (factual) to abstract (metacognitive) (Table 2). Representation of the knowledge dimension as a number of discrete steps can be a bit misleading. For example, all procedural knowledge may not be more abstract than all conceptual knowledge. And metacognitive knowledge is a special case. In this model, “*metacognitive knowledge* is knowledge of [one’s own] cognition and about oneself in relation to various subject matters . . .” (Anderson and Krathwohl, 2001, p. 44).

Table 2. The Knowledge Dimension

<b>Factual</b> <ul style="list-style-type: none"> <li>• knowledge of terminology</li> <li>• knowledge of specific details and elements</li> </ul>	<b>Conceptual</b> <ul style="list-style-type: none"> <li>• knowledge of classifications and categories</li> <li>• knowledge of principles and generalizations</li> <li>• knowledge of theories, models, and structures</li> </ul>	<b>Procedural</b> <ul style="list-style-type: none"> <li>• knowledge of subject-specific skills and algorithms</li> <li>• knowledge of subject-specific techniques and methods</li> <li>• knowledge of criteria for determining when to use appropriate procedures</li> </ul>	<b>Metacognitive</b> <ul style="list-style-type: none"> <li>• strategic knowledge</li> <li>• knowledge about cognitive tasks, including appropriate contextual and conditional knowledge</li> <li>• self-knowledge</li> </ul>
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## Bloom's Revised Taxonomy Model

**Note:** These are **learning objectives** – not **learning activities**. It may be useful to think of preceding each objective with something like, “students will be able to....”

	The Knowledge Dimension	The Knowledge Dimension	The Knowledge Dimension	The Knowledge Dimension
	<b>Factual</b> The basic elements a student must know to be acquainted with a discipline or solve problems in it.	<b>Conceptual</b> The interrelationships among the basic elements within a larger structure that enable them to function together.	<b>Procedural</b> How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.	<b>Metacognitive</b> How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.
The Cognitive Process Dimension	<b>Remember + Factual</b> <b>List</b> primary and secondary colors.	<b>Remember + Conceptual</b> <b>Recognize</b> symptoms of exhaustion.	<b>Remember + Procedural</b> <b>Recall</b> how to perform CPR.	<b>Remember + Metacognitive</b> <b>Identify</b> strategies for retaining information.
The Cognitive Process Dimension	<b>Understand + Factual</b> <b>Summarize</b> features of a new product.	<b>Understand + Conceptual</b> <b>Classify</b> adhesives by toxicity.	<b>Understand + Procedural</b> <b>Clarify</b> assembly instructions.	<b>Understand + Metacognitive</b> <b>Predict</b> one’s response to culture shock.
The Cognitive Process Dimension	<b>Apply + Factual</b> <b>Respond</b> to frequently asked questions.	<b>Apply + Conceptual</b> <b>Provide</b> advice to novices.	<b>Apply + Procedural</b> <b>Carry out</b> pH tests of water samples.	<b>Apply + Metacognitive</b> <b>Use</b> techniques that match one’s strengths.
The Cognitive Process Dimension	<b>Analyze + Factual</b> <b>Select</b> the most complete	<b>Analyze + Conceptual</b> <b>Differentiate</b> high and low	<b>Analyze + Procedural</b> <b>Integrate</b> compliance with	<b>Analyze + Metacognitive</b> <b>Deconstruct</b> goals
UPCOMING EVENTS ▾    TEACHING ▾    RESOURCES ▾    GRAD STUDENTS & POSTDOCS ▾				
The Cognitive Process Dimension	<b>Evaluate + Factual</b> <b>Select</b> the most complete list of activities.	<b>Evaluate + Conceptual</b> <b>Determine</b> relevance of results.	<b>Evaluate + Procedural</b> <b>Judge</b> efficiency of sampling techniques.	<b>Evaluate + Metacognitive</b> <b>Reflect</b> on one’s progress.
The Cognitive Process Dimension	<b>Create + Factual</b> <b>Generate</b> a log of daily activities.	<b>Create + Conceptual</b> <b>Assemble</b> a team of experts.	<b>Create + Procedural</b> <b>Design</b> efficient project workflow.	<b>Create + Metacognitive</b> <b>Create</b> a learning portfolio.

## Recommended Resources

[Bloom's Digital Taxonomy](#) by Andrew Churches – a thorough orientation to the revised taxonomy; practical recommendations for a wide variety of ways mapping the taxonomy to the uses of current online technologies; and associated rubrics

[Bloom et al.'s Taxonomy of the Cognitive Domain](#) (Dr. William G. Huitt, Valdosta State University)

[The Best Resources For Helping Teachers Use Bloom's Taxonomy In The Classroom](#) (Larry Ferlazzo's Websites of the Day...)

Volume Information. (2002). *Theory Into Practice*, 41(4), 265-267. Retrieved from <http://www.jstor.org/stable/1477402>

\*Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition)*. New York: Longman.