Categories in the Cognitive Domain: (with Outcome-Illustrating Verbs)

1. **Knowledge** of terminology; specific facts; ways and means of dealing with specifics (conventions, trends and sequences, classifications and categories, criteria, methodology); universals and abstractions in a field (principles and generalizations, theories and structures):
   Knowledge is (here) defined as the remembering (recalling) of appropriate, previously learned information.
   - defines; describes; enumerates; identifies; labels; lists; matches; names; reads; records; reproduces; selects; states; views; writes;

2. **Comprehension**: Grasping (understanding) the meaning of informational materials.
   - classifies; cites; converts; describes; discusses; estimates; explains; generalizes; gives examples; illustrates; makes sense out of; paraphrases; restates (in own words); summarizes; traces; understands.

3. **Application**: The use of previously learned information in new and concrete situations to solve problems that have single or best answers.
   - acts; administers; applies; articulates; assesses; charts; collects; computes; constructs; contributes; controls; demonstrates; determines; develops; discovers; establishes; extends; implements; includes; informs; instructs; operationalizes; participates; predicts; prepares; preserves; produces; projects; provides; relates; reports; shows; solves; teaches; transfers; uses; utilizes.

4. **Analysis**: The breaking down of informational materials into their component parts, examining (and trying to understand the organizational structure of) such information to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations.
   - analyzes; breaks down; categorizes; compares; contrasts; correlates; diagrams; differentiates; discriminates; distinguishes; focuses; illustrates; infers; limits; outlines; points out; prioritizes; recognizes; separates; subdivides.
5. **Synthesis**: Creatively or divergently applying prior knowledge and skills to produce a new or original whole.
   - adapts; anticipates; collaborates; combines;
   - communicates; compiles; composes; creates; designs;
   - develops; devises; expresses; facilitates; formulates;
   - generates; hypothesizes; incorporates; individualizes;
   - initiates; integrates; intervenes; invents; models;
   - modifies; negotiates; plans; progresses; rearranges;
   - reconstructs; reinforces; reorganizes; revises; structures;
   - substitutes; validates.

6. **Evaluation**: Judging the value of material based on personal values/opinions, resulting in an end product, with a given purpose, without real right or wrong answers.
   - appraises; compares & contrasts; concludes; criticizes;
   - critiques; decides; defends; interprets; judges; justifies;
   - reframes; supports.

**Other Domains for Educational Objectives:**

- Affective Domain (emphasizing feeling and emotion)
- Psychomotor Domain (concerned with motor skills)

**Internet Resources:**

- [Learning Domains or Bloom's Taxonomy: The Three Types of Learning](http://www.nwlink.com/~donclark/hrd/bloom.html)
- [Bloom's Taxonomy](http://www.corrosion-doctors.org/Training/Bloom.htm)

"Following the 1948 Convention of the American Psychological Association, B.S. Bloom took a lead in formulating a classification of "the goals of the educational process". Three "domains" of educational activities were identified...."

- [Bloom's Taxonomy](http://www.coun.uvic.ca/learn/program/hndouts/bloom.html)

Benjamin Bloom created this taxonomy for categorizing level of abstraction of questions that commonly occur in educational settings. The taxonomy provides a useful structure in which to categorize test questions..."

- [Skills for each of the six levels of Bloom's Taxonomy](http://www.coun.uvic.ca/learn/program/hndouts/bloom.html)
- [Examples of Behavioral Verbs and Student Activities -- Definitions of](http://www.coun.uvic.ca/learn/program/hndouts/bloom.html)
Behavioral Verbs -- Writing Behavioral Objectives

BLOOM'S TAXONOMY (Miller, WSU)  
[www.che.wsu.edu/~millercc/bloom.html]

Overview  
[www.ceap.wcu.edu/Houghton/Learner/think/bloomsTaxonomy.html]

"One of the more frustrating aspects of this taxonomy is its forgotten attribution to the rest of the team. Bloom was the first name listed in alphabetical order of multiple editors, so many that they became the ubiquitous "and others" of a taxonomy that was developed by a committee of people."

Student Learning Outcomes: Recommended Reading  
[http://www.ac.wwu.edu/~assess/slo.htm]

MCQs and Bloom's Taxonomy  [Cape Town, SA: UCT's page on Designing and Managing Multiple Choice Questions; www.uct.ac.za/projects/cbe/mcqman/mcqappc.html]

Curriculum Development & Evaluation (under construction)  
Explorations in Learning & Instruction: The Theory Into Practice Database (Taxonomy)  
[http://tip.psychology.org/taxonomy.html]

Guide to Theories of Learning

Internet Resources for Higher Education Outcomes Assessment  
[http://www2.acs.ncsu.edu/UPA/assmt/resource.htm]

www.edselect.com/blooms.htm>

chiron.valdosta.edu/whuitt/col/cogsystax/bloom.html

Explorations in Learning & Instruction: The Theory Into Practice Database (Taxonomy)

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**Literature:**


Extensive Online Bloom Bibliography


Francis P Hunkins (UW), Teaching Thinking Through Effective Questioning (1989), and others.

"How to write learning outcomes", by Alan Jenkins (Oxford Brookes University) & Dave Unwin (Birkbeck College London)

- "Learning outcomes are statements of what is expected that a student will be able to DO as a result of a learning activity. For this new version of the Core Curriculum the activity will be following your materials on WWW or listening to a lecture based on them, but it could also be a laboratory class, even an entire study programme."

PASSIG, David, A Taxonomy of Future Higher Thinking Skills INFORMATICA, 2(1), 2003, [Abstract & References]