

# Bloom's Taxonomy

**1. Knowledge** - Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.

*Illustrative General Instructional Objectives:* Knows common terms. Knows specific facts. Knows methods and procedures. Knows basic concepts. Knows principles.

*Illustrative Verbs for Stating Specific Learning Outcomes:* Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states.

**2. Comprehension** - Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words or numbers), by interpreting material (explaining or summarizing, and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond simple remembering of material and represent the lowest level of understanding.

*Illustrative General Instructional Objectives:* Understands facts and principles. Interprets verbal material. Interprets charts and graphs. Translates verbal material to mathematical formulas. Estimates consequences implied in data. Justifies methods and procedures.

*Illustrative Verbs for Stating Specific Learning Outcomes:* Converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes.

**3. Application** - Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those of comprehension.

*Illustrative General Instructional Objectives:* Applies principles to new situations. Applies theories to practical situations. Solves mathematical problems. Constructs charts and graphs. Demonstrates correct usage of a procedure.

*Illustrative Verbs for Stating Specific Learning Outcomes:* Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.

**4. Analysis** - Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationship between parts, and recognition of the organizational principles involved. Learning outcomes here present a higher intellectual level than comprehension and application because they require an understanding of both the content and structural form of the material.

*Illustrative General Instructional Objectives:* Recognizes unstated assumptions. Recognizes logical fallacies in reasoning. Distinguishes between facts and inferences.

Evaluates the relevancy of data. Analyses the organizational structure of a work (art, music, writing).

*Illustrative Verbs for Stating Specific Learning Outcomes:* Breaks down diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides.

**5. Synthesis** - Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns and structures.

*Illustrative General Instructional Objectives:* Writes a well-organized paper. Gives a well-organized speech. Writes a creative short story (or poem). Proposes a plan for an experiment. Integrates learning from different areas into a plan for solving a problem. Formulates a new scheme for classifying objects (or events, or ideas).

*Illustrative Verbs for Stating Specific Learning Outcomes:* Categorizes, combines, complies, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.

**6. Evaluation** - Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgements are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance and purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus value judgements based on clearly defined criteria.

*Illustrative General Instructional Objectives:* Judges the consistency of written material. Judges the adequacy with which conclusions are supported by data. Judges the value of a work (art, music, writing) by using internal criteria. Judges the value of a work (art, music, writing) by use of external standards.

*Illustrative Verbs for Stating Specific Learning Outcomes:* Appraises, compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, supports.

## References

- Benjamin S. Bloom, Bertram B. Mesia, and David R. Krathwohl. *Taxonomy of Educational Objectives (two vols: The Affective Domain & The Cognitive Domain)*. New York. David McKay, 1964.
- Bloom and David R. Krathwohl. *Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain*. Benjamin S. Addison-Wesley Pub. Co. 1984. (An updated exposition of the 1956 model.)

Adapted from [http://www.csun.edu/science/ref/reasoning/questions\\_blooms/blooms.html](http://www.csun.edu/science/ref/reasoning/questions_blooms/blooms.html)