

BLOOMS TAXONOMY

thy:development uses Blooms' taxonomy. Please note that Levels One (Knowledge), Four (Analysis) and Six (Evaluation) are not supported in these descriptions. Levels Two (Comprehension), Three (Application) and Five (Synthesis) will be used as follows.

LEVEL TWO: 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 to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.

Examples of learning objectives at this level are the capability to: understand facts and principles, interpret written material, interpret charts and graphs, translate verbal material to mathematical formulae, estimate the future consequences implied in data, justify methods and procedures. Or, to learn *why* the system is built or described in a particular way, and not only know *how* to solve the problems identified.

Keywords used in descriptions: Classify, understand, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate.

LEVEL THREE: APPLICATION

Could also be read as *is able to use*. In addition, the subject matter is used in case works, and participants learn to identify and explain subject matters and the proposed solution.

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

Examples of learning objectives at this level are the capability to: apply concepts and principles to new situations, apply methods, procedures and theories to practical situations, solve mathematical problems, construct graphs and charts, and to demonstrate the correct usage of a method or procedure, to use theories and methods in a new context, or solve problems using required skills or knowledge.

Keywords used in descriptions: Apply, choose, demonstrate, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.

LEVEL FIVE: SYNTHESIS

Synthesis refers to the ability to put parts together to form a new whole solution. This may involve the production of a unique method or operation, 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 design patterns besides the use of existing design patterns.

Examples of learning objectives at this level are the capability to: write a well structured code, propose a plan for an experiment, integrate learning from different areas into a plan for solving a problem, formulate a new scheme for classifying objects (or events, or ideas).

Keywords used in descriptions: Arrange, master, assemble, code, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.