

BLOOM'S TAXONOMY: Categories in the Cognitive Domain¹



Learning is a complex process. It can be as simple as learning by rote, such as memorizing the multiplication tables, or as complex as analyzing information from a variety of sources and forming a personal opinion about what one has learned. Educators often tout the higher level thinking skills as the only goals for teaching/learning, but in truth all levels of learning are important and all have their place. After all, one can understand the complexity of algebra, but still be slowed down by not having memorized the math facts necessary to perform the equations. Dr. Benjamin Bloom organized learning into six categories, referred to as Bloom's Taxonomy. In our program, students will experience learning at all six levels as they explore integrated themes of study.



Level 1: KNOWLEDGE - Knowledge of terminology; specific facts; ways and means of dealing with specifics. Knowledge is defined as the remembering or recalling of appropriate, previously learned information. Verbs which describe this level of learning include:

defines;	describes;	enumerates;	identifies;	labels;	lists;
matches;	names;	reads;	records;	reproduces;	
selects;	states;	views.			

Level 2: COMPREHENSION - Comprehension: Grasping (understanding) the meaning of informational materials. Verbs which describe this level of learning include:

classifies;	cites;	converts;	describes;	discusses;	estimates;
explains;	generalizes;	gives examples;	makes sense out of;	paraphrases;	
summarizes	restates (in own words);		traces;	understands	

¹ The *cognitive domain* refers to experiences related to thinking. There are two additional domains, the *affective domain* which refers to experiences related to feelings or emotion and the *psychomotor domain* which refers to experiences relating to motor skills and the physical aspects of the body. In the process of learning, the student will often have experiences in all three of these domains.

Level 3: APPLICATION - Using previously learned information in new and concrete situations to solve problems that have single or best answers. Verbs which describe this level of learning include:

acts;	administers;	articulates;	assesses;	charts;
collects;	computes;	constructs;	contributes;	controls;
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.

Level 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. Verbs which describe this level of learning include:

breaks down;	correlates;	diagrams;	differentiates;	discriminates;
distinguishes;	focuses;	illustrates;	infers;	limits;
outlines;	points out;	prioritizes;	recognizes;	separates;
subdivides.				

Level 5: SYNTHESIS - Creatively or divergently applying prior knowledge and skills to produce a new or original whole idea. Verbs which describe this level of learning include:

adapts;	anticipates;	categorizes;	collaborates;	combines;
communicates;	compares;	compiles;	composes;	contrasts;
creates;	designs;	devises;	expresses;	facilitates;
formulates;	generates;	incorporates;	individualizes;	initiates;
integrates;	intervenes;	models;	modifies;	negotiates;
plans;	progresses;	rearranges;	reconstructs;	reinforces;
reorganizes;	revises;	structures;	substitutes;	validates.

Level 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. Verbs which of learning describe this level include:

appraises;	compares & contrasts;	concludes;	criticizes;	critiques;
decides;	defends;	interprets;	judges;	justifies;
reframes;	supports			



While the first three skills - **knowledge**, **comprehension**, and **application** are hierarchal in nature (i.e., comprehension requires higher level thinking than does knowledge and application requires higher level thinking than both), the last three skills are more parallel. It does not require a higher level of thinking to place a value on something than it does to analyze information from one source and draw a conclusion, for example. The three upper level skills are different from one another, but all three require the student to move beyond memorization and understanding to doing something with the information he or she has learned. **Analysis**, **synthesis**, and **evaluation** all require that the student make what he or she is learning a part of who he or she is. For example, a student can learn all about the process of petrification and about the National Parks System, but if he or she then tries to sneak out of the Petrified Forest National Park with a bit of petrified wood, he or she hasn't really learned anything of value.

As a wise man once said the following: *The things that I learn should change me in such a way as to make me a better person. If they do not, perhaps I haven't really learned them at all.*

I agree.