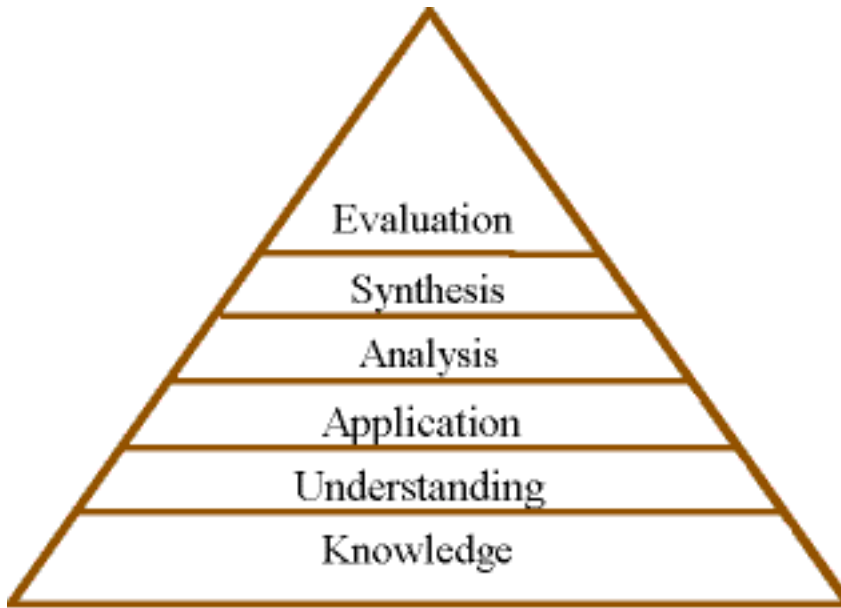


BLOOM'S TAXONOMY



In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. Bloom found that over 95 % of the test questions students encounter require them to think only at the lowest possible level...the recall of information.

Bloom identified six levels within the cognitive domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels, to the highest order which is classified as evaluation. Verb examples that represent intellectual activity on each level are listed here.

1. **Knowledge:** arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, repeat, reproduce state.
2. **Comprehension:** classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate,
3. **Application:** apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.
4. **Analysis:** analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.
5. **Synthesis:** arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.
6. **Evaluation:** appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate.

BLOOM'S TAXONOMY: Sample Questions

As teachers we tend to ask questions in the "knowledge" category 80% to 90% of the time. These questions are not bad, but using them all the time is. Try to utilize higher order level of questions. These questions require much more "brain power" and a more extensive and elaborate answer. Below are the six question categories as defined by Bloom.

- **KNOWLEDGE**
 - remembering;
 - memorizing;
 - recognizing;
 - recalling identification and
 - recall of information
 - Who, what, when, where, how ...?
 - Describe
- **COMPREHENSION**
 - interpreting;
 - translating from one medium to another;
 - describing in one's own words;
 - organization and selection of facts and ideas
 - Retell...
- **APPLICATION**
 - problem solving;
 - applying information to produce some result;
 - use of facts, rules and principles
 - How is...an example of...?
 - How is...related to...?
 - Why is...significant?
- **ANALYSIS**
 - subdividing something to show how it is put together;
 - finding the underlying structure of a communication;
 - identifying motives;
 - separation of a whole into component parts
 - What are the parts or features of...?
 - Classify...according to...
 - Outline/diagram...
 - How does...compare/contrast with...?
 - What evidence can you list for...?
- **SYNTHESIS**
 - creating a unique, original product that may be in verbal form or a physical object;
 - combination of ideas to form a new whole
 - What would you predict/infer from...?
 - What ideas can you add to...?
 - How would you create/design a new...?
 - What might happen if you combined...?
 - What solutions would you suggest for...?
- **EVALUATION**
 - making value decisions about issues;
 - resolving controversies or differences of opinion;
 - development of opinions, judgements or decisions
 - Do you agree...?
 - What do you think about...?
 - What is the most important...?
 - Place the following in order of priority...
 - How would you decide about...?
 - What criteria would you use to assess...?

For further Web-based information on Bloom's taxonomy:

http://projects.coe.uga.edu/epltt/index.php?title=Bloom%27s_Taxonomy

<http://oregonstate.edu/instruct/coursedev/models/id/taxonomy/#table>

Revised Bloom's Taxonomy

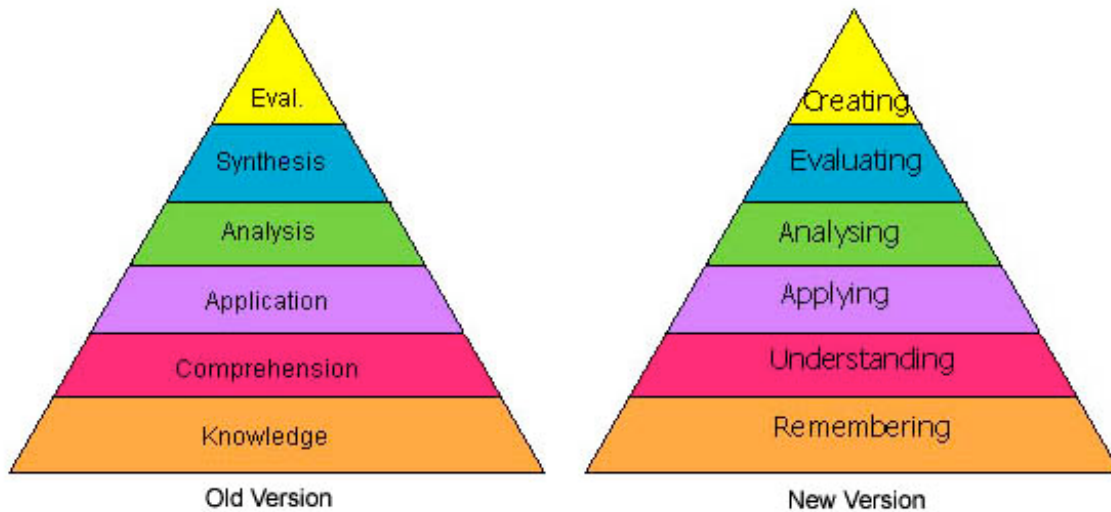


Table1. Bloom's Taxonomy

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	List	Summarize	Classify	Order	Rank	Combine
Conceptual Knowledge	Describe	Interpret	Experiment	Explain	Assess	Plan
Procedural Knowledge	Tabulate	Predict	Calculate	Differentiate	Conclude	Compose
Meta-Cognitive Knowledge	Appropriate Use	Execute	Construct	Achieve	Action	Actualize