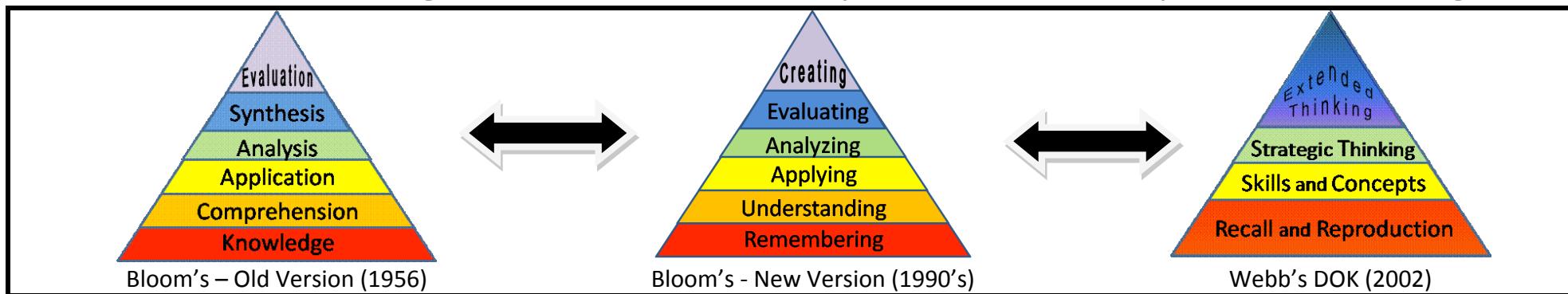


Levels of Thinking in Bloom's Taxonomy and Webb's Depth of Knowledge



Bloom's six major categories were changed from noun to verb forms in the new version which was developed in the 1990's and released in 2001. The knowledge level was renamed as remembering. Comprehension was retitled understanding, and synthesis was renamed as creating. In addition, the top two levels of Bloom's changed position in the revised version.

Bloom's Taxonomy	Revised Bloom's Taxonomy
Knowledge	Remembering
<i>Recall appropriate information.</i>	
Comprehension	Understanding
<i>Grasp the meaning of material.</i>	
Application	Applying
<i>Use learned material in new and concrete situations.</i>	
Analysis	Analyzing
<i>Break down material into component parts so that its organizational structure may be understood.</i>	
Synthesis	Evaluating
<i>Put parts together to form a new whole.</i>	
Evaluation	Creating (Previously Synthesis)
<i>Judge value of material for a given purpose.</i>	
<i>Put elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.</i>	

Norman L. Webb of Wisconsin Center for Educational Research generated DOK levels to aid in alignment analysis of curriculum, objectives, standards, and assessments.

Webb's Depth of Knowledge & Corresponding Verbs

**Some verbs could be classified at different levels depending on application.*

Recall and Reproduction *Correlates to Bloom's 2 Lowest Levels*

Recall a fact, information, or procedure.

arrange, calculate, define, draw, identify, list, label, illustrate, match, measure, memorize, quote, recognize, repeat, recall, recite, state, tabulate, use, tell who- what- when- where- why

Skill/Concept

Engages mental process beyond habitual response using information or conceptual knowledge. Requires two or more steps.

apply, categorize, determine cause and effect, classify, collect and display, compare, distinguish, estimate, graph, identify patterns, infer, interpret, make observations, modify, organize, predict, relate, sketch, show, solve, summarize, use context clues

Strategic Thinking

Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer, higher level of thinking than previous 2 levels.

appraise, assess, cite evidence, critique, develop a logical argument, differentiate, draw conclusions, explain phenomena in terms of concepts, formulate, hypothesize, investigate, revise, use concepts to solve non-routine problems

Extended Thinking *Correlates to Bloom's 2 Highest Levels*

*Requires investigation, complex reasoning, planning, developing, and thinking-probably over an extended period of time. *Longer time period is not an applicable factor if work is simply repetitive and/or does not require higher-order thinking.*

analyze, apply concepts, compose, connect, create, critique, defend, design, evaluate, judge, propose, prove, support, synthesize

Resources:

A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.

Anderson, L.W., Krathwohl, D.R., et al. (2001).

[http://projects.coe.uga.edu/epltt/index.php?title=Bloom's Taxonomy#Revised Bloom.27s Taxonomy .28RBT.29](http://projects.coe.uga.edu/epltt/index.php?title=Bloom's_Taxonomy#Revised_Bloom.27s_Taxonomy_.28RBT.29),

<http://wat.wceruw.org/TILSA%20Dissemination%20Webb%20presentation%20for%20Training%20%20July%2024%20%202005.ppt>,

http://dese.mo.gov/divimprove/sia/msip/DOK_Chart.pdf, <http://www.paec.org/delta/mathhighquality/Levels.pdf>