Webb's Depth of Knowledge (DoK)

This handout is for instructors who want to apply Webb's framework of learning to course design.

Depth of Knowledge

Webb (1997) offers a cognitive approach to learning, identifying four levels of knowledge:

- Recall and reproduction
- Skills and concepts
- Short-term strategic thinking
- Extended thinking

DOK Level	Title of Level
1	Recall and Reproduction
2	Skills and Concepts
3	Short-term Strategic Thinking
4	Extended Thinking

Recall and reproduction - curricular elements that fall into this category involve basic tasks that require students to recall or reproduce knowledge and/or skills. The subject content at this level usually involves working with facts, terms and/or properties of objects. It may also involve use of simple procedures and/or formulas. Key words that often denote this level include list, identify and define. A student answering a Level 1 item either knows the answer or does not; that is, the answer does not need to be "figured out" or "solved."

POSSIBLE PRODUCTS

Quiz	List	Collection	Podcast	Social bookmarking
Definition	Workbook	Explanation	Categorizing/Tagging	Searching
Fact	Reproduction	Show and Tell	Commenting	Googling
Worksheet	Vocabulary Quiz	Outline	Bulleting	
Test	Recitation	Blog	Highlighting	
Label	Example	Wiki	Social networking	

ROLES

TEACHER		STUDENT	
Directs	Tells	Responds	Absorbs
Shows	Examines	Remembers	Recognizes
Questions	Evaluates	Memorizes	Describes
Demonstrates	Listens	Explains	Translates
Compares	Contrasts	Restates	Demonstrates
Examines		Interprets	

Skills and concepts - elements found in a curriculum that fall in this category involve working with or applying skills and/or concepts to tasks related to the field of study in a laboratory setting. The subject matter content at this level usually involves working with a set of principles, categories, heuristics, and protocols. Example mental processes that often denote this level include summarize, estimate, organize, classify, and infer.

POSSIBLE PRODUCTS

Photograph	Presentation	Reverse-Engineering	Blog Commenting
Illustration	Interview	Cracking Codes	Blog Reflecting
Simulation	Performance	Linking	Moderating
Sculpture	Dairy	Mashing	Testing (Alpha/Beta)
Demonstration	Journal	Relationship Mind Maps	Validating

ROLES

TEACHER		STUDENT	
Shows	Facilitates	Solves problems	Demonstrates use of knowledge
Observes	Evaluates	Calculates	Compiles
Organizes	Questions	Completes	Illustrates
		Constructs	

Short-term strategic thinking - items falling into this category demand a short-term use of higher order thinking processes, such as analysis and evaluation, to solve real-world problems with predictable outcomes. Stating one's reasoning is a key marker of tasks that fall into this category. The expectation established for tasks at this level tends to require coordination of knowledge and skill from multiple subject-matter areas to carry out processes and reach a solution in a project-based setting. Key processes that often denote this level include analyze, explain and support with evidence, generalize, and create.

POSSIBLE PRODUCTS				
Graph	Survey	Debate	Conclusion	Podcast
Spreadsheet	Database	Panel	Program	Publishing
Checklist	Mobile	Report	Film	Wiki-ing
Chart	Abstract	Evaluating	Animation	
Outline	Report	Investigation	Video cast	

ROLES				
TEACHER		STUDENT		
Probes	Guides	Discusses	Uncovers	Argues
Observes	Evaluates	Debates	Thinks deeply	Tests
Acts as a resource	Questions	Examines	Questions	Calculates
Organizes	Dissects	Judges	Disputes	Compares
Clarifies	Accepts	Assesses	Decides	Selects
Guides		Justifies		

Extended thinking - Curricular elements assigned to this level demand extended use of higher order thinking processes such as synthesis, reflection, assessment and adjustment of plans over time. Students are engaged in conducting investigations to solve real-world problems with unpredictable outcomes. Employing and sustaining strategic thinking processes over a longer period to solve the problem is a key feature of curricular objectives that are assigned to this level. Key strategic thinking processes that denote this level includes synthesize, reflect, conduct, and manage.

POSSIBLE PRODUCTS			
Film	Project	New Game	Newspaper
Story	Plan	Song	Media Product

ROLES				
TEACHER		STUDENT		
Facilitates	Extends	Designs	Formulates	Plans
Reflects	Analyses	Takes risks	Modifies	Creates
Evaluates		Proposes		

Applying DoK to designing learning outcomes

The DOK level assigned should:

- reflect the level of work students are most commonly required to perform in order for the response to be deemed acceptable
- reflect the complexity of the cognitive processes demanded by the task outlined by the objective, rather than its difficulty. Ultimately the DOK level describes the kind of thinking required by a task, not whether or not the task is "difficult"
- be assigned based upon the cognitive demands required by the central performance described in the objective