

## DOK Overview Information

### **What is DOK?**

Depth of Knowledge (DOK) is an element of the Webb Alignment Tool developed by Dr. Norman Webb, from the University of Wisconsin, to align standards with assessments. DOK focuses on the content standard in order to successfully complete an assessment/standard task. It is descriptive, not a taxonomy. It is also not the same as difficulty, rather about the complexity of the task. The depth of knowledge is not determined by the verb, but the context in which the verb is used and the depth of thinking required to complete the assignment/task. Depth of Knowledge is represented by four levels of cognitive complexity; each describing the kind of thinking involved at that level. A greater DOK level requires greater conceptual understanding and cognitive processing by the student. Students who are exposed to and reach greater DOK levels (complexity of thinking) will have increased student achievement. The following are the definitions used by Webb to describe the four levels of depth of knowledge:

### **The Four Levels of Depth of Knowledge**

**DOK 1: (recall)** *Recall and Reproduction* — recall or recognition of a fact, information (*definitions, terms, dates, etc.*), concept, or procedure.

**DOK 2: (skill/concept)** *Basic application of Skills and Concepts* — use of information, conceptual knowledge, following or selecting appropriate procedures, two or more steps with decision points along the way, routine problems, organizing/displaying data. This level requires mental skills, concepts, or processing beyond a habitual response; students must make some decisions about how to approach a problem or activity.

**DOK 3: (strategic thinking)** *Strategic Thinking* — requires reasoning, developing a plan or sequence of steps to approach a problem, some decision making and justification, abstract and complex thinking. DOK 3 items often have more than one possible answer (*generally taking less than 10 minutes to do*).

**DOK 4: (extended thinking)** *Extended Thinking* — an investigation or application to real work; requires time to research, think, and process multiple conditions of the problem or task. This would include non-routine manipulations across disciplines/content areas/multiple sources (*requires complex reasoning, planning, developing, and thinking, most likely over an extended time, and requiring more than 10 minutes to do non-routine manipulations*).

Depth of knowledge levels describe the process of thinking involved in while considering the complexity of the task, **not** the likelihood that the task will be completed correctly. DOK levels can be cumulative; an item written to DOK 3 often contains DOK 1 and DOK 2 level demands, however, DOK levels are not additive. You cannot create a DOK level 2 activity with only DOK 1 demands, (i.e., a DOK 1 + DOK 1 does not equal a DOK 2). This model, or an adaptation of the model, is being used by the *Council of Chief State School Officers (CCSSO)* for assessment alignment in more than twenty states.

### **Why did NDE adopt the Webb model?**

With the continued emphasis on assessment and rigor in State standards, the curriculum/development consultants at NDE investigated methodologies related to alignment and rigor associate with standards and assessments. NDE believed that the current assessments were well aligned to the content standards based on our development cycle; however, NDE was not as confident in the rigor of the assessment items. It was therefore determined that the DOK language used in the Webb model better represents Nevada's intent. No Child Left Behind (NCLB) requires states to build rigor and clarity into the development process by defining assessments to "measure the depth and breadth of the state academic content standards for a given grade level" as *U.S. Department of Education, 2003, p. 12*. Thus DOK became the mechanism to ensure that the intent of the standard and the level of student demonstration required by that standard matched the assessment items as required under NCLB. NDE believes that the incorporation of Webb's alignment model will lead to an effective delivery of a rigorous and relevant standards-based education, increase achievement, reduce the achievement gap, and prepare each student for post secondary college and career readiness.

### **Where are we going with DOK?**

The expected impact from this process is three fold. First, state item writers will have a clear and shared understanding of the assessable skills and concepts. Second, the rigor of the state assessments will be elevated, and third the state assessment will be used as a validation process rather than an evaluation of student achievement. The adoption of the Webb model for both assessment and instruction will encourage the use of all four levels of the model across Nevada. Depth of knowledge level four will not appear on state assessments, however and more importantly, Level Four tasks/assignments and/or assessments in the classroom will aide teachers in facilitating students to a more complete understanding of the skills and concepts of the content standards, placing the state test in the role of validating student understanding rather than evaluating it. Providing all students the opportunity of working with various levels of cognitive complexity will get at the heart of Nevada's rigorous and relevant standards based education.

### **What is the implementation timeline?**

In January 2008 a workshop sponsored by NDE and lead by national experts was held to share with Nevada educators and stakeholders the Webb Model of Alignment. Participants were given information about the model and the expected outcome of its use. The workshop also afforded participants the opportunity to recode state assessments to reflecting depth of knowledge levels. Since January subsequent workshops have been held to complete the coding of the assessment items. By mid April 2008, NDE had all state assessment items coded to represent depth of knowledge based on the revised 2005 Science, 2006 Math and 2007 English Language Arts Content Standards. Completing this process enabled NDE to move forward with the development of new assessment matrix and item specifications for the summer 2008 item writing workshops which would reflect the DOK levels. At the completion of

these processes NDE was prepared to communicate with more confidence the expected levels of depth of knowledge for the content standards and assessment items.

In the fall of 2008 NDE conducted informational workshops at the four regional professional development (RPDP) centers with the audience including local district leadership. Each site was provided a disk with five modules to assist in the training of the local districts as planned by the regional professional development centers. The Southern Nevada RPDP site has done the largest trainings to date, along with publishing an entire journal on DOK in their latest version of "ShopTALK". NDE curriculum consultants have been available to answer question, provide feedback, or attend planning meetings with the four RPDP sites as requested.

Depth of Knowledge levels will be incorporated into Nevada's state assessments starting in 2010, with field test items leveled to DOK in 2009. The 2009 item analysis reports for the districts will include both ability codes (present complexity measure) as well as DOK codes per item in all three content areas assessed.

The plan for spring 2009 is to provide further information to the Nevada State Board of Education, Nevada State Legislature and the seventeen district superintendents. The four RPDP sites will begin the introduction of DOK to the field via administrators and teacher trainings throughout their assigned districts.