

Guidance for the Iowa Core Standards: Literacy and Mathematics Cognitive Complexity Additions to the Standards Documents

Background Information

Since 2005, Iowa has been on a multi-year journey to invigorate our education system. One of the foundational elements of this effort has been the Iowa Core (formerly the Iowa Model Core Curriculum and Iowa Core Curriculum). The original version, the Iowa Model Core Curriculum, included Literacy, Mathematics, and Science for grades 9-12. Today, the Iowa Core also includes Social Studies and 21st Century Skills. All five content areas span grades K-12. The original versions of Literacy, Mathematics, and Science have been updated since it was the Iowa Model Core Curriculum. In particular, Literacy and Mathematics were updated in 2010 to include, verbatim, the entire Common Core State Standards for English/Language Arts and Mathematics, as well as some Iowa-specific additions. In other words, the Iowa Core for Literacy and Mathematics K-12 is the Common Core plus some additional, Iowa-specific additions.

A common thread throughout the development and evolution of the Iowa Core has been a desire to set challenging, rigorous learning expectations for Iowa's students. Accomplishing this goal requires defining the concept of "academic rigor." The issue of rigor is frequently approached from the perspective of cognitive complexity/demand. Cognitive complexity/demand, as it applies to the Iowa Core, is defined as "what students are expected to do with topical/conceptual knowledge," where topical/conceptual knowledge refers to "topics and information that student are supposed to learn" (Niebling, Roach, & Rahn-Blakeslee, 2008). In other words, cognitive complexity/demand is the type of thinking students need to be engaged in with the subjects and ideas they are learning about in their coursework.

A study of the Common Core State Standards completed by WestEd in 2011 that included assigning cognitive complexity codes using Webb's Depth of Knowledge (DOK) to Standards for English/Language Arts and Mathematics for grades 3-12. That report can be found at <http://www.smarterbalanced.org/wordpress/wp-content/uploads/2011/12/Smarter-Balanced-CCSS-Eligible-Content-Final-Report.pdf>. A study was completed in Iowa examining the cognitive complexity using Webb's DOK for the Common Core State Standards for English/Language Arts and Mathematics for grades K-2 and the Iowa-specific additions. That report can be found at <http://goo.gl/H284S>.

There are now DOK codes assigned to all of the Iowa Core Standards for Literacy and Mathematics for grades K-12. These codes have been inserted into the Iowa Core Literacy and Math Standards documents, and can be downloaded in .doc and .pdf formats. Included in these updated Standards documents is a brief introduction to cognitive complexity and Webb's DOK, including a detailed explanation of the DOK levels. Webb's DOK goes from lower- to higher-order thinking skills in this manner: DOK 1 = Recall, DOK 2 = Skills and Concepts, DOK 3 = Strategic Thinking, and DOK 4 = Extended Thinking.

Guidance

The Standards documents with DOK information are available for anyone to read and use. The following points should be kept in mind when reading and using these documents:

- 1 The purpose of these documents is to provide the field with cognitive complexity information about the Standards, not to train the reader on how to use cognitive complexity/demand information. Information and training beyond the contents of the Standards documents may be needed for educators to use the DOK codes to successfully implement the Standards.
- 2 Educators should read the information about cognitive complexity and Webb's DOK in the introduction sections of the Standards documents before reviewing the DOK codes assigned to the Standards.
- 3 Discussions about the Standards should include the DOK codes as well.
- 4 For things like instructional content, instructional materials, or assessment to be considered aligned with a standard, the DOK level must meet or exceed the DOK level of the Standard.
- 5 The DOK codes have also been imported into the Iowa Curriculum Alignment Toolkit (I-CAT). Training materials, along with the I-CAT, have been piloted and revised and are now ready to use. Districts need to contact their Area Education Agency (AEA) to schedule a training session in order to access and use the DOK information in the I-CAT.
- 6 The full set of K-12 DOK codes for Literacy and Mathematics in additional formats (e.g., spreadsheets, other databases, .html) is forthcoming. Check the Iowa Department of Education's information sharing channels (e.g., website, Twitter, School Leader Update) for the latest information.