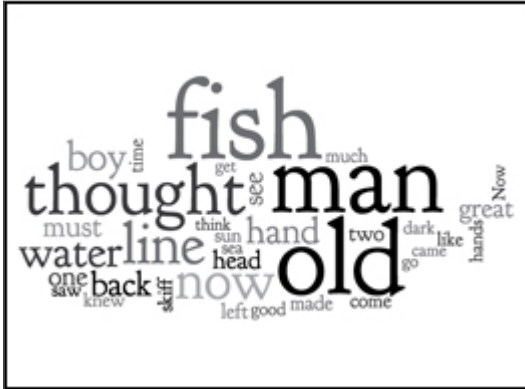


- [Permission to Reprint](#)



Volume 28, Number 5
September/October 2012

The Complex Matter of Text Complexity

By ROBERT ROTHMAN

*Texts like *The Old Man and the Sea* can be both simple and complex. A word cloud reveals the 35 most common words in the novel.*

Stephen Colbert had some fun this spring with a study that found that members of Congress speak at a 10th-grade level. “America’s leaders are speaking like high school sophomores,” he said, “a silent language of angry glares at the dinner table, between text messages.”

The study, conducted by the Sunlight Foundation, a Washington, D.C.-based organization dedicated to government transparency, used a commonly applied formula for measuring text complexity known as the Flesch-Kincaid readability test, which looks at vocabulary and sentence length. It found that congressional speeches were at the 10.6 grade level, or about the midpoint of 10th grade. In 2005 a similar study found congressional speeches at the 11.5 grade level. By contrast, the report noted, the U.S. Constitution is written at a 17.8 grade level and the Gettysburg Address at the 11.2 grade level.

While the study produced some chuckles, it also highlighted an issue that is gaining increasing scrutiny as states and schools implement the Common Core State Standards: text complexity. The standards for English language arts place a great emphasis on ensuring that students can read increasingly complex texts. One of the “anchor” standards for reading states: “Read and comprehend complex literary and informational texts independently and proficiently.”

Writers of the standards say that students’ ability to comprehend the kinds of texts they will encounter in college and the workplace is perhaps the most critical factor in ensuring that they are prepared for postsecondary life. Yet research cited in the standards found that, while the complexity of texts in entry-level college courses and workplaces has held steady or increased slightly, the complexity of texts used in high schools has declined over the past few decades.

“The difference between what we ask students to read in college and careers and what we ask them to read in schools is the equivalent of the difference between fourth- and eighth-grade performance on [the National Assessment of Educational Progress],” says Sue Pimentel, one of the lead writers of the English language arts standards. “By the time they get in college courses, they will be unable to handle their texts.”

She and others note that this has come about because teachers have tended to rely on textbooks and “leveled” books, those identified for particular grade levels by publishers using common formulas, while providing support for students who struggle or assigning books that are at or just above their current reading level. But to implement the standard effectively, educators note, teachers and librarians will have to select materials—including nonfiction materials—that place students on a path toward college and workplace levels by the time they graduate from high school.

To reach this goal, teachers and librarians will need professional development to make the kind of nuanced judgments necessary to evaluate text complexity differently, notes Elfrieda H. Hiebert, a research associate at the University of

California, Santa Cruz, and the founder of TextProject, an organization developing tools to help teachers examine texts. “A lot of work on text complexity has been outsourced,” she says. “In the reading field, we don’t have a history of having teachers analyze texts.”

Yet, she notes that the Common Core State Standards provide an opportunity to rectify the situation. “Attention to text complexity is long overdue,” Hiebert says.

Readability Formulas

Bertha A. Lively and Sidney L. Pressey created the first method for analyzing text complexity (the Lively-Pressey Method) nearly a century ago, and a number of researchers have developed similar measures since then. (These include Rudolf Flesch, author of the best-selling *Why Johnny Can’t Read* and co-creator of the method the Sunlight Foundation used to analyze congressional speeches.) In part, this work was supported by the U.S. military, which wanted to ensure that technical manuals could be read and understood by soldiers and sailors.

Over time, publishers used these so-called readability formulas to create texts, such as basal readers, by controlling vocabulary so that students at a particular reading level could understand it. Beginning in the 1980s, though, reading educators began to argue that students should read authentic texts like those they would encounter outside of schools, and educators used the formulas to determine the readability of commercially available books and articles.

The formulas measure text complexity quantitatively using two dimensions: vocabulary and syntax. They are based on the idea that texts containing a lot of words unfamiliar to students and long, complicated sentences are more difficult to understand than texts using common words and shorter sentences.

However, the formulas do not capture all that goes into text complexity, notes Marilyn J. Adams, a visiting scholar in the Department of Cognitive, Linguistic, and Psychological Sciences at Brown University. For one thing, the methods might overstate the complexity of a piece of informational writing that uses a lot of uncommon words central to its topic. “Any text on raccoons would use ‘raccoon’ a lot, as well as ‘nocturnal’ and ‘foraging,’” she says. “Words that are obscure tend to be infrequent, but words that are infrequent are not necessarily obscure.”

At the same time, the readability formulas might understate the complexity of a piece of narrative fiction that uses a lot of dialogue, which involves short sentences. In one widely cited example, Ernest Hemingway’s *The Old Man and the Sea* tends to appear easy on readability formulas because it uses relatively simple language and short sentences, but it is actually quite challenging because of its metaphors and the ideas it tries to convey.

The problem is particularly acute for English- language learners, because English includes many idiomatic phrases that appear simple, notes Hiebert. “Many idioms in English use common, high-frequency words,” she says. “In a readability formula, they would not appear difficult.”

In addition, what students bring to a text also affects readability. Students who are familiar with a topic have more background knowledge, are better able to understand its vocabulary, and are more motivated to read it than a text that is less familiar. “It’s easier for me to read an article on psychology than it is to read an article on engineering,” says Adams.

Qualitative Analyses

For these reasons, the Common Core State Standards lay out a three-part model for examining text complexity. In addition to the quantitative measures of text complexity, this model includes a qualitative analysis and examinations of the readers and the tasks they would be expected to undertake with the texts.

The qualitative analysis would examine factors such as the knowledge demands that a text places on readers and the levels of meaning it suggests, says Pimentel. For example, a text might be more challenging than it appears on the surface because some of the information needed to understand it might be implicit rather than explicit, she says. “The Gettysburg Address makes allusions to the Declaration of Independence but doesn’t refer to the Declaration of Independence.”

Similarly, an examination of levels of meaning would pick up whether books like *The Old Man and the Sea* have deeper meanings than their surface language would suggest. Such an analysis can also help teachers understand how to teach a text, she adds. “If levels of meaning are more complex, you can target that in instruction.”

In addition to the quantitative and qualitative analyses, teachers should also determine their students' interests and background knowledge in order to choose texts that they can comprehend, Pimentel says. In part, the decision will be based on whether the text will be taught in class, where the teacher can provide some support for students who struggle, or whether it is intended to be read independently. "If it's independent, it should be at their level or slightly above," Pimentel says. "If it's too far above, they will give up."

Malbert Smith III, the president of MetaMetrics, a firm that has developed one of the most widely used quantitative methods of analyzing text complexity, known as Lexiles, agrees that teachers should use qualitative analyses and an understanding of students' knowledge and interests in choosing appropriate texts. "There are a lot of things about connecting a student to a book that text complexity measures do not capture," he says.

Tools for Teachers

Spurred by the Common Core State Standards' emphasis on text complexity, states and private organizations are developing tools to help teachers choose texts wisely. Based on a model developed by the Kansas Department of Education, 11 states are developing a rubric for making qualitative judgments about text complexity that divide texts into four levels: Low, Middle Low, Middle High, and High (see ["Text Complexity Rubric"](#)). This will help teachers determine whether a given text has more complex levels of meaning or knowledge demands and should be reserved for higher grades, Pimentel says.

Similarly, MetaMetrics has created a tool, known as Find a Book, that enables parents, librarians, and teachers to identify books matched to children's reading levels, based on the Lexile scale, which measures both text complexity and students' comprehension ability. The tool is used in 15 states; in many cases, the information accompanies children's state test results.

Technology offers the opportunity to bring teachers together to share their ideas about a text's complexity and how students read it, says Hiebert. The nonprofit organization she created, TextProject, has developed online tools that can help teachers determine what background knowledge a text requires or whether its vocabulary is accessible, she says.

Ultimately, every teacher and librarian should be prepared to make judgments about text complexity, says Smith. "Training and professional development has to move all the way down to the classroom," he says. "That will take time."

Teachers also need professional development to understand how to provide support for students who struggle with appropriately complex texts, says Pimentel. Students who are far behind grade level might need to strengthen their basic reading skills, she says, but students who are two or even three grade levels behind can be taught to comprehend grade-level texts with supports, such as breaking texts into chunks, rereading, or asking students to paraphrase the material in writing, she says.

But it would be a mistake to ignore text complexity and rely on lower-level materials for struggling students, Pimentel says. "There is no research that says, if an eighth-grader is reading at a fifth-grade level, and you give him fifth-grade texts, he will catch up."

Robert Rothman is a senior fellow at the Alliance for Excellent Education and the author of [Something in Common: The Common Core Standards and the Next Chapter in American Education](#) (Harvard Education Press, 2011).

