

SECTION D: Excerpt from: *Advancing Our Students' Language and Literacy: The Challenge of Complex Texts*

Marilyn Jager Adams is a research professor in the Cognitive, Linguistic, and Psychological Sciences Department of Brown University and former chief scientist for Soliloquy Learning Inc. She is the author of numerous scholarly papers and several books, including two landmark works: Beginning to Read: Thinking and Learning about Print and Phonemic Awareness in Young Children. This article is adapted with permission of the Guilford Press from "The Challenge of Advanced Texts: The Interdependence of Reading and Learning," which Adams wrote for Reading More, Reading Better, edited by Elfrieda H. Hiebert, copyright 2009 by Guilford Press.

Back to the Classroom: A Strategy for Developing Advanced Reading

The capacity to understand and learn from any text depends on approaching it with the language, knowledge, and modes of thought, as well as the reading skill, that it presumes. It would seem, then, that when assigning materials from which students are to learn, there are basically but two choices. Either the materials must be sufficiently accessible in language and concept for the students to read and understand on their own, or the students must be given help as they read. Some students receive such help in their homes, but many do not and, as I have argued elsewhere, this is likely the major factor underlying the achievement gap.⁴⁵ In any case, because opportunities for one-on-one reading assistance are limited in the typical school setting, educators often feel that their only alternative is to restrict assignments to materials that are within their students' independent reach. There follows the popularity of so-called high-low texts, intended to offer high interest or information alongside low demands on vocabulary and reading skill.

It was in this spirit, through earnest efforts to ensure full curricular access to all, that the complexity of schoolbooks came to be relaxed. Sadly, as this strategy pulled vortically upon itself, it did not solve the access problem but, instead, made it worse. In terms of literacy growth, making the textbooks easier is an approach that ultimately denies students the very language, information, and modes of thought they need most in order to move up and on. Is there any escape from this dilemma?

The answer is yes, there is, and it follows directly from Zipf's law. Again, according to Zipf's law, every coherent text is made up of a few words that recur again and again, and many words that occur just once or only a few times. And, again, Zipf's law is shown to hold for virtually every natural language domain, regardless of its size, topic, modality, or sophistication.

Let us first consider the implications of Zipf's law with respect to word-frequency counts such as the one undertaken for *The American Heritage School Dictionary*.⁴⁶ Recall that the goal of such large frequency counts is to capture as broad and representative a picture of the language as possible. For this reason, the collective texts from which they are constructed are chosen to represent as broad and representative a range of topics and genres as possible while avoiding repetition of any particular topic or text. A consequence of this text-sampling strategy is that the low-frequency words within these word counts fall into two different categories. In the first category are words that are rare because they are complex, technical, obsolete, or esoteric (e.g., *caprifoliaceous*, *omphaloskepsis*, and *mumpsimus*). In the second category, however, are words that are rare because their meanings are relatively specific and are often tied to specific contexts, topics, and genres.⁴⁷ For example, a high-frequency word such as *home* may be expected in texts of many different types and topics of which only a small subset would accept

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such low-frequency synonyms as *condominium*, *wigwam*, *hospice*, *habitat*, *birthplace*, *burrow*, or *warren*. The same holds for the high-frequency word *strong* versus the more specific alternatives *valid*, *virile*, *tensile*, *pungent*, *dominant*, *vibrant*, *durable*, *lethal*, *tyrannical*, and *undiluted*. More generally, the greater the information that a word carries, the fewer the topics and contexts in which it will arise.

Because words in both of these two categories are low frequency, both tend to be excluded by readability formulas that are based on large word-frequency counts. Yet, the “information” in a text is shown to depend disproportionately on words in this second category.⁴⁸ Because of this, when words in this second category are removed or substituted so as to “simplify” the text, much of the information in the text is removed along with them.

A more specific statement of Zipf's law is this: which words appear frequently and infrequently in any given text depends on what the text is about. So, in a text about cooking, the word *habitat* would be infrequent, but in a text about ecology, it would not. The problem with large word-frequency counts—and, by extension, with the readability formulas that are based on them—is that, by design, the texts from which they are generated are collectively topic-neutral. Similarly, if your students were to read a little of this and a little of that, without rereading anything or dwelling on any topic, then the likelihood of their encountering any given information-bearing word would be quite small.

In contrast, if your students read several texts on a single topic, they would encounter a number of domain-specific, information-bearing words. In such texts, the words that rise to the top are those most useful for describing the concepts and relationships that are central to that topic. For example, a quick sampling of informational texts about Mars that I picked off the Internet affirms that, without exception, and whether the intended audience was young children or scientists, the nouns *Mars* and *planet* are among the five most frequent in each. The balance of the dominant nouns in each text depends on the subtopic in focus—variously, its moons, its geography, our efforts at its exploration, etc.

With this in mind, and combined with what else we know about literacy growth, Zipf's law prescribes a self-supporting strategy for developing the sorts of knowledge structures that complex texts require. That is, we know that even for young⁴⁹ and delayed⁵⁰ readers, any new word encountered (and identified correctly) in print becomes a sight word with little more than a single encounter, provided its meaning is known. We know that the more that students already know about the topic of a text, the greater their understanding and learning will be as they read.⁵¹ We know that vocabulary strength predicts the speed and security with which students learn the meanings of unfamiliar words, whether through reading⁵² or direct instruction.⁵³

The challenge, then, lies in organizing our reading regimens in every subject and every class such that each text bootstraps the language and knowledge that will be needed for the next. Zipf's law tells us that this can be done by carefully sequencing and scaffolding students' reading materials within any given topic. *Ideally, such scaffolding would begin on the very first day of school, with prekindergarten and kindergarten teachers reading aloud stories and nonfiction texts that build on each others' vocabulary and ideas.*

Teachers in any grade (and parents) would do well to follow this relatively straightforward strategy:

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1. Select a topic about which your students need to learn. (There will be plenty of time for other topics once you've started this process.) If the students are below grade level, begin with shorter, simpler texts.
2. Teach the key words and concepts directly, engaging students in using and discussing them to be sure they are well anchored.
3. As the students learn the core vocabulary, basic concepts, and overarching schemata of the domain, they will become ready to explore its subtopics, reading (or having read aloud to them) as many texts as needed or appropriate on each subtopic in turn.

Gradually and seamlessly, students will find themselves ready for texts of increasingly greater depth and complexity. Better yet, as their expertise on, say, Mars, expands, they will find themselves in a far better position to read about Venus, Jupiter, earth sciences, space exploration, and on and on.

Can advanced texts really be made accessible to less proficient readers in this way? Yes. As a concrete example, no text on dinosaurs would get through a readability formula for second-graders.

However, having built up their vocabulary and domain knowledge, many second-graders are able to read and understand remarkably sophisticated texts about dinosaurs with great satisfaction. Similarly, I have rarely met a Boston cabby—no matter how much he decried reading—who wasn't quick to pick up and read a news article about the Red Sox. *Knowledge truly is the most powerful determinant of reading comprehension.* The greatest benefits of literacy grow through reading deeply in multiple domains and about multiple topics. We can and must do a better job of leading—and enabling—our students to do so. If education is the key to opportunity, then their options, in school and beyond, depend on it.

