The Foundation

Components of an Effective Literacy Program

Leadership I – Grades K-5 - Day 3
Advancing Our Students’ Language and Literacy

The Challenge of Complex Texts

BY MARYLIN JAGER ADAMS

Few Changes on SAT Posted by Class of 2010."¹
“Scores on SAT College Entrance Test Hold Steady.”² “Class of 2008 Matches ’07 on the SAT.”³

Year by year, point by point, it is hard to see the real news in these headlines. The real news is not that the SAT scores have held steady. The real news is that the SAT scores haven’t increased. The SAT scores of our college-bound students have been languishing not for one or two years, but for a long time. Several decades ago, scores were much higher.

The SAT score decline began in 1962, nearly 50 years ago. From 1962 to 1980, math scores fell 36 points to 492 while verbal scores fell 54 points to 502. Since 1980, the math scores have been gradually climbing back and are now at 516. Fluctuations aside, the verbal scores remain unchanged, even today stuck at 502.

If I were writing the headline for the next newspaper story on the SATs, here’s what you’d see: “Seniors and Their SAT Scores Sabotaged by Low-Level Textbooks.” And if the copyeditor would let me, I’d add an exclamation point! The literacy level of our secondary students is languishing because the kids are not reading what they need to be reading.

This is a strong claim. Let me lay out the evidence and argument so you can judge for yourself.

Not Just the SAT Scores

To be sure, whether scores on the SAT exams truly reflect relevant or important intellectual or academic proficiencies remains a topic of discussion.⁴ Yet, the SATs are not the only indication that

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.
the literacy growth of our secondary students has fallen behind. Between 1994 and 1998, the United States joined 19 other developed countries in an international evaluation of adult literacy levels. As compared with their peers in the other countries, the literacy scores of older U.S. adults (36 years old and up) were quite high, ranking in the top five. In contrast, the scores for younger U.S. adults (35 years old or less) ranked in the bottom half of the distribution by every measure. Among young adults with a high school diploma or less, those from the United States fell at the bottom of the pile, ranking 19th out of 20. Even among participants who had completed four or more years of postsecondary education, the scores of our young adults were below the average for same-aged and like-educated peers in the other countries. The young adults in this study would have graduated from high school between 1974 and 1998, during the period when the verbal SAT scores were bottoming out.

In international assessments of schoolchildren, the performance of our fourth-graders is above average. However, the performance of our high school students is average, at best. The results of our own National Assessment of Educational Progress (NAEP) show a similar contrast: while the reading of younger students has been improving over time, that of older students has not. NAEP’s analysis of changes in reading performance between 1971 and 2008 shows that average scores of 9-year-olds increased by 12 points. Those of 13-year-olds increased by 4 points. But the average scores of 17-year-olds have not changed. The lack of progress among 17-year-olds is especially jarring when factoring in our dropout problem. Roughly 25 percent of eighth-graders for better scores than they ultimately obtained in the twelfth grade. ACT’s report concludes that there is a specific problem at the secondary school level.*

Taking a closer look at the poor performance of students on its college entrance exam, ACT determined that the major stumbling block for students is complex texts. The maximum score on the reading component of the ACT college entrance exam is 36; scores of less than 21 predict reading difficulties in college coursework and also in the workplace. Among students who took the ACT exam in 2005, the scores of 51 percent—more than half—fell below 21. And among that 51 percent, average performance on the complex texts was at chance levels (i.e., random guessing would produce the same scores).

**SAT Decline Prompts Investigation**

Back in 1977, having watched SAT scores fall for 15 years, the College Board, which developed and administers the SAT, engaged a panel to try to identify the underlying causes of the decline. A first hypothesis to be checked was whether the test had somehow become more demanding. But, no, to the contrary, indications were that scoring had become more lenient. A second prominent hypothesis was that the decline was due to changes in the demographics of the test takers. Analyses showed this hypothesis to be largely correct, but only for a brief while. Over the early 1960s, changes in the composition of the tested population accounted for as much as three-quarters of the test score decline—and, no wonder, for during this period the number of students taking the SAT tripled. Over the 1970s, however, though the test-taking population stabilized, the scores did not. Instead, the decline continued, even steeper than before, while the extent to which it could be ascribed to demographic shifts shrank to 30 percent at most. Furthermore, the scores that dropped most were those of the strongest students, the students in the top 10 percent of their class; the scores of students toward the bottom of the distribution held steady or even increased.

Another hypothesis examined by the College Board’s panel was that the reading selections on the tests had somehow become too hard for the students. Reading researcher Jeanne Chall and her colleagues tested this hypothesis by sampling passages from SAT tests administered between 1947 and 1975, and using readability analyses to compare their difficulty. The data indicated that the SAT passages had actually become easier over this period—so scores should have been going up. Further, between 1963 and 1975, during the years of the score decline, the average difficulty of the test passages lay at the eleventh-grade level, which should have been solidly in range for twelfth-grade college-bound students. Yet scores were going down.

Chall thought there had to be some reason why the twelfth-graders were not able to read eleventh-grade texts. With this in mind, she and her colleagues evaluated popular eleventh-grade textbooks in history, literature, grammar, and composition. The average difficulty of the textbooks lay between the ninth- and tenth-grade levels.

Could this discrepancy between the reading level of the SAT and that of the textbooks explain the score decline? If students had neither practiced nor been instructed with reading materials as hard as the SAT passages, then one could hardly expect them

*The same conclusion was drawn by the College Entrance Examination Board in the mid-1970s and again in the mid-1980s.
to read the latter with competence and confidence.

By the early 1990s, SAT scores appeared to have plateaued. The College Board decided to “recenter” the scale by adding about 80 points to the verbal scores (and about 25 points to the math scores) so as to return the mean of each test to a value close to 500 points. Beleaguered, the College Board also changed the name of the test from the Scholastic Aptitude Test to simply the SAT, with the letters standing for nothing.

**A Closer Look at Textbooks**

In the 1980s and 1990s, another team of researchers, led by Donald P. Hayes, returned to Chall’s hypothesis, extending her work with a revealing series of studies. In one of the most extensive, they analyzed the difficulty of 800 elementary, middle, and high school books published between 1919 and 1991. Their results indicated that the difficulty of the text in these books had been significantly reduced and, further, that the years over which this reduction occurred were temporally aligned with the SAT score decline.

As one indication of this trend, the average length of the sentences in books published between 1963 and 1991 was shorter than that of books published between 1946 and 1962. In the seventh- and eighth-grade textbooks, for example, the mean length of sentences decreased from 20 words to 14 words—the equivalent of dropping one or two clauses from every sentence. Meanwhile, the sophistication of the books’ wording also declined. The wording of schoolbooks published for eighth-graders from 1963 forward was as simple as that in books used by fifth-graders before 1963. Worse, among literature texts required in English classes, the wording of twelfth-grade texts published after 1963 was simpler than the wording of seventh-grade texts published prior to 1963.

Continuing their investigation, the researchers found that it was especially schoolbooks for students in grades 4 and up that were simplified in the years after 1962. Moreover, although the wording of schoolbooks for children generally increased across grades 1 through 8, the same was not true of high school books. Across grades 9 through 12 (including texts for Advanced Placement courses), the difficulty levels of the literature books were shown to differ little from one another or from the grade 7 and grade 8 offerings. One bright spot was high school students’ science texts, which were significantly more difficult than their English books. However, even among science texts, only those designated for Advanced Placement coursework evidenced difficulty levels comparable to that of the average daily newspaper for adults.

Such a disparity between the students’ schoolbooks and the passages on the SAT might well explain the decline in SAT scores. More significantly, failing to provide instruction or experience with “grown-up” text levels seems a risky course toward preparing students for the reading demands of college and life.

To wit, while the analyses of Hayes and his colleagues showed that textbooks had become progressively easier over the century, they also indicated that the difficulty of English language newspapers had remained nearly constant. Could this disparity be a factor in the declining circulation of newspapers? Similarly, they found the level of the wording of scientific magazines, whether aimed at professionals or laypersons, had increased dramatically from 1930 to 1990. If it is a national goal to inspire more students to become engineers and scientists, then shouldn’t the difficulty of our schoolbooks have increased alongside? If a goal is to ensure that our students will be able to stay sufficiently informed about scientific progress to conduct business, reflect on policy, and manage their family’s health and education, then at a minimum, shouldn’t the difficulty of our schoolbooks keep pace with the difficulty of scientific publications aimed at the general public?

**The Vocabulary of Written Language**

Reading educators have long appreciated that there is a very strong relationship between vocabulary and reading comprehension. But what exactly is it about the wording of texts that underlies this relation? Part of the answer is that written texts draw upon many more words than normally arise in oral language situations.

To gain insight into this phenomenon, Hayes and colleagues compared spoken language with texts. For this study, they focused on trade publications rather than school materials, and the texts they used included preschool books, children’s books, comic books, adult books, magazines, newspapers, and abstracts from scientific magazines. For comparison, they compiled and analyzed a variety of oral language samples, including language from prime-time adult television shows, children’s television shows, mothers’ speech to children ranging in age from infancy to adolescence, conversations among college-educated adults (including from the Oval Office), and adults providing expert witness testimony for legal cases. Regardless of the source or situation and without exception, the richness and complexity of the words used in the oral language samples paled in comparison with the written texts. Indeed, of all the oral language samples evaluated, the only one that exceeded even preschool books in lexical range was expert witness testimony.

This difference between the wording of oral and written language must lie at the crux of the advanced literacy challenge, as it points to a profound dilemma. On the one hand, the extent of this disparity implies that the great majority of words needed for understanding written language is likely to only be encountered—and thus can only be learned—through experience with written text. On the other hand, research has taught us that written text is

---

1The scores given in the introduction are all on the new, recentered scale.
accessible—and thus permits learning—only if the reader or listener already knows the vast majority of words from which it is constructed. Indeed, research indicates that reading with comprehension depends on understanding at least 95 percent of the words of a text.

**How Many New Words Do Readers Need to Learn?**

So roughly how many words do kids need to learn in order to be proficient readers? This question raises the second key part of the vocabulary problem.

Suppose you counted the number of times each different word in this article occurred. What you would find is that there are a few words that I have used quite a number of times, and many, many others that I used only once or twice. This distribution of word counts or frequencies is an example of what is known as Zipf’s law.

According to Zipf’s law, every natural language sample is made up of relatively few words that recur over and over again, and many, many words that arise very infrequently. The type of natural language sample does not matter and, provided that it is not too short, neither does its size. That is, whether you counted all the words in a casual conversation, a lecture, a newspaper article, a whole book, or even a whole library’s worth of books, you would find the same thing: of all the different words in your sample, a small number would occur over and over again, while many, many others would occur only once.

Zipf’s law may feel intuitively obvious. Less obvious, however, are its implications with respect to the vocabulary challenge.

An example may vivify the issue. Counting words that appear in relevant text is a common approach to making dictionaries. For example, if you wanted to make a dictionary for geologists, you might begin by gathering a sample of the kind of articles about geology that you think your customers would like to read and then counting the number of occurrences of all the different words within them. The goal is to make sure your dictionary contains all the words that your customers will want to look up most.

Similarly, as part of creating *The American Heritage School Dictionary*, John Carroll and his colleagues were asked to figure out which words should be included by examining children’s reading materials. To do this, the team gathered texts that had been written especially for children in grades 3 through 8, taking care that the collection as a whole captured the range of different kinds of text and topics that the children might read in amounts that were proportionate to how often they could be expected to read them. From across these materials, the team then extracted 10,000 excerpts, totaling 5 million words of text in all, which, after sorting, turned out to include 86,741 different words. Their job was then to figure out which of these 86,741 words arose sufficiently often to warrant inclusion in the dictionary.

Enter Zipf’s law. Just 109 very frequent words accounted for fully half of the vast sample of children’s reading material that Carroll and colleagues had put together. Indeed, 90 percent of the sample was accounted for by just 5,000 relatively common words. At the other extreme, more than half of the words appeared only once. Still worse: the team estimated that the actual number of different words in the children’s reading materials—that is, the number of different words that would have turned up if they had counted such texts exhaustively rather than just working with excerpts—would have totaled 609,606. Due to Zipf’s law, a sample of 5 million words was just plain too small even to identify—much less to judge the relative frequency of—the vast majority of words that might well have belonged in the dictionary.

But hold it. We are talking about materials that are specifically written for and meant to be understood by schoolchildren in grades 3 through 8. How can they possibly be expected to know more than 600,000 different words?

In fact, many of these words are cousins of each other. For example, if a child knows the word *shoe*, then she or he is unlikely to experience difficulty with *shoes*. Similarly, a child probably won’t have trouble with word families like *walk, walked, and walk-*. Making textbooks easier ultimately denies students the very language, information, and modes of thought they need most to move up and on.

**Developing Students’ Vocabulary: Examining the Options**

So, what is the best way to help students master the many, many words they must know to understand advanced texts? In broad terms, there appear to be only two options: (1) to endeavor to teach students the words they will need to know, and (2) to expect students to learn new words through reading.

Is direct vocabulary instruction worthwhile? Based on a highly regarded meta-analysis, the answer seems to be a resounding “yes.” Across studies involving a variety of students, instructional specifics, and outcome measures, the meta-analysis showed that...
Recalling that even texts that are for students in grades 1 through 8 presume knowledge of at least 100,000 different words, it is clear that both estimates for learning vocabulary fall way short of the need. At the same time, however, both estimates also seem at odds with the intuitive sense that a high school student need not be neither a genius nor a tireless scholar to read and understand most materials written for grade-school children.

**Insights from a Computer Model of Vocabulary Acquisition**

For another way to think about vocabulary acquisition, let’s consider an intriguing computer model called Latent Semantic Analysis (LSA) that was developed by Tom Landauer and his colleagues. The core mechanism underlying the LSA model is “associative learning.” When a text is input into the LSA model, the computer builds an association between each individual word of the text and the total set of words—that is, the context—in which the word has appeared. Where a word shows up in multiple contexts, the strength of the association between the word and each of the separate contexts is weakened through competition. Where a word arises repeatedly in one particular context, the association between the two is strengthened.

Importantly, the associations between words and contexts in the LSA model are bidirectional. That is, there are links from each word to each of its contexts and also from each context to all of its words. As a result, the full complex of knowledge that is called forth as each word is “read” extends through its contexts to other words, and through those words to other contexts and words. Thus, as the model “reads” the next word of the text and the next and the next, activation spreads to other, related complexes of knowledge, which may well include clusters that have never before been directly represented by any combination of words and contexts the model has ever “read” before.

Moreover, because the model’s knowledge is represented relationally, the addition or modification of any one connection impacts many others, pulling some closer together, pushing some further apart, and otherwise altering the strengths and patterns of connections among words and contexts. Through this dynamic, reading causes the connections that collectively capture LSA’s knowledge of words to grow, shrink, and shift continuously, continually, and always in relation to one another.

In short, the model’s response to any text it “reads” extends well beyond what is denoted by the specific words of the text. Further, the richness of the model’s representation of any text that it “reads” depends on how much it already knows. Just as with people, the larger its starting vocabulary and the more it has read before, the more it will learn and understand from the next text.

In comparing LSA’s word-learning to that of schoolchildren, the researchers began by “training” it with a set of texts judged comparable to the lifelong learning of a typical seventh-grader. The researchers then gave the model new texts to “read” and measured its vocabulary growth. The results showed that the likelihood that the computer gained adequate understanding of new words it encountered in these new texts was 0.05—just exactly the same as researchers have found for schoolchildren.

But the results showed something else, too. It turned out that, with each new reading, the model effectively increased its understanding not just of words that were in the text but also of words...
that were not in the text. Indeed, measured in terms of total vocabulary gain, the amount the model learned about words that did not appear in a given reading was three times as much as what it learned about words that were in the reading.

“What?” we cry, “How can that be? How can reading a text produce increases in knowledge of words that it does not even contain? That is not credible! It makes no sense!” But wait. If we were talking about knowledge rather than words, then it would make lots of sense. Every concept—simple or complex, concrete or abstract—is learned in terms of its similarities, differences, and relationships with other concepts with which we are familiar. As a simplistic example, when we read about tigers, then, by dint of both similarities and contrasts, we learn more about all sorts of cats and, further, about every subtopic mentioned along the way. The more deeply we read about tigers, the more nuanced and complex these concepts and their interrelations become.

As explained earlier, it was to be expected that LSA’s full response to any new text would spread beyond the content of the text itself. The unexpected discovery was that this dynamic would impact the model’s understanding of individual words. Given that words are really nothing more than labels for interrelated bundles of knowledge, perhaps this should not have been surprising.

In the study that modeled a seventh-grader, the researchers were able to gauge LSA’s overall vocabulary growth by computationally examining changes in the representation of every word to which it had ever been exposed. Yet here is a mull-worthy correlate: unavoidably, the bundles of concepts and relations that emerged or were strengthened through LSA’s reading experience included many that pertained to words that the model had never seen before. An analogous effect might explain why researchers have found time and again that the strength of students’ vocabulary predicts the likelihood that they will learn new words from context.44 the probability that they will correctly infer a new word’s meaning from context,45 and both the amount and nature of their reasoning when they are asked to explain how they do so.46 Even when students are told the meaning of a new word, their prior vocabulary strength predicts the likelihood that they will retain it.47 (These are known as “Matthew effects,” referring to the notion that the rich get richer and the poor get poorer.) As the reader’s linguistic and conceptual knowledge grows in richness and complexity, it will increasingly support the meanings of many new words and the representation of many new spheres of knowledge.

Cognitive psychologists broadly agree that the meaning of any word consists of bundles of features and associations that are the cumulative product of the reader’s experience with both the word in context and the concepts to which it refers. What is unique about the LSA model is its demonstration that this structure and dynamic can so richly and powerfully evolve through accrued experience with the various contexts in which words do and do not occur—that is, sheeory through reading.

Another way to state the larger point here is that words are not just words. They are the nexus—the interface—between communication and thought. When we read, it is through words that we build, refine, and modify our knowledge. What makes vocabulary valuable and important is not the words themselves so much as the understandings they afford. The reason we need to know the meanings of words is that they point to the knowledge from which we are to construct, interpret, and reflect on the meaning of the text. A core implication of the LSA model is that students’ knowledge of words grows less through any process of inferring their meanings, one by one, based on the sentences in which they arise, than as a product of learning more generally about the contexts in which they arise and of understanding the concepts and relationships to which they refer.

Knowledge, Cognitive Strategies, and Inferences

If reading results in so rich a network of knowledge through nothing more than overlaps and contrasts in associations, then shouldn’t students learn far more efficiently, given active, incisive inference and comprehension strategies? Research indicates that such strategies can be taught and suggests that doing so may improve comprehension.48 However, inference and comprehension strategies seem to do little to compensate for weak domain knowledge.49 Instead, research repeatedly shows prior domain knowledge to be a far stronger predictor of students’ ability to comprehend or to learn from advanced texts.40 Of course, students’ comprehension and learning is also influenced by their reading skills (such as decoding and fluency). But even the advantage of strong reading skills turns out to be greatest for students with strong domain knowledge.41

Again, such findings should not be surprising. Cognitive research affirms that there are two modes of reasoning.42 The first, most common mode is knowledge-based. This sort of reasoning is rapid, extensive, and automatic. This is the sort of reasoning that ensures, for example, that we properly understand the meaning of fan depending on whether the text is about a soccer fan, a ceiling fan, or a peacock’s fan. This is the sort of reasoning that computer models such as LSA statistically emulate.

The second mode of reasoning is conscious and rule-based. Such logical, analytic thought also warrants instructional attention in our schools, as it is our means of deliberately evaluating

AMERICAN EDUCATOR | WINTER 2010–2011 Page 8
and vetting our thoughts for bias, happenstance, and inconsistencies. However, no reasoning strategy, however well-structured, can rival the speed, power, or clarity of knowledge-driven understanding, nor can it compensate for an absence of sufficient information.

There may one day be modes and methods of information delivery that are as efficient and powerful as text, but for now there is no contest. To grow, our students must read lots. More specifically, they must read lots of “complex” texts—texts that offer them new language, new knowledge, and new modes of thought. Beyond the basics, as E. D. Hirsch, Jr., the founder of Core Knowledge, has so forcefully argued, the reading deficit is integrally tied to a knowledge deficit.44

**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 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 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, tenseful, 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 young\textsuperscript{49} and delayed\textsuperscript{50} 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.\textsuperscript{51}

We know that vocabulary strength predicts the speed and security with which students learn the meanings of unfamiliar words, whether through reading\textsuperscript{52} or direct instruction.\textsuperscript{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. \textit{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:

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. \textit{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.

\section*{The Role of a Common Core Curriculum}

There are some who object reflexively to the notion of a common core curriculum. Yet, if you think about it, the very concept of publicly supported schooling is predicated on the belief that there is a certain body of knowledge and abilities that is needed by every citizen for a safe, responsible, and productive life.

Under the Massachusetts School Law of 1642, every town was made responsible for teaching every child “to read perfectly the English tongue,” and to understand the capital laws of the commonwealth and the principles of religion, as well as for ensuring every child was provided an apprenticeship in “some lawful calling, labour, or employment.” In effect, these requirements constituted the colony’s \textit{common core curriculum}.

In the centuries since then, responsibility for our children’s religious education has been reassigned from the school to families and churches. However, the educational and literacy levels required by the other dimensions of life, liberty, and the pursuit of happiness have exploded. In our times, written language has
become the major medium not just for education but for information in every aspect of life. Further, as priest, professor, and historian Walter Ong has pointed out, the ubiquity of audio support hardly matters: written language is the underlying medium for educated communication regardless of modality.54

The arguments for a common core curriculum are partly that it would be readily accessible to every teacher and school, partly that it would provide continuity and coherence for the millions of students who frequently change schools (an issue E. D. Hirsch, Jr., explores beginning on page 30), and partly that a vocabulary-building curriculum is too big and too hard a job for any teacher or school to put together alone. Creating each unit, for each grade K–12, will depend on judicious selection not just of topics but of the reading materials comprising each unit. From the billions of pages of print that are available, finding those that are both well written and appropriate will take work. The task of building a good core curriculum will require intense effort by teams of educators and scholars, including the best minds and sensibilities available.

In creating a common core curriculum, the goal is neither to dictate nor to limit what all students should be able to know and do. As detailed within this issue of American Educator, the core curriculum might fill only two-thirds of students’ instructional time. Perhaps, too, the units would be populated with alternate sets of readings. After all, as reviewed in this article, the greatest benefit of a well-structured program of reading and learning is that it prepares the student to read other materials with competence and thoughtful comprehension. If education is to nurture interest and support relevance, it must also leave room for some choice. The purpose of a core curriculum is to build the foundations that will put students in good stead to choose and pursue what they wish to learn and do—which, of course, depends integrally on their being able to learn and do it.

From my perspective, a great benefit of a common core curriculum is that it would drive a thorough overhaul of the texts we give students to read, and the kinds of learning and thought we expect their reading to support. Amid the relatively few SAT headlines this fall, the one written by the College Board, which administers the SAT, stood out: “2010 College-Bound Seniors Results Underscore Importance of Academic Rigor.”55 As the College Board went on to explain, “students in the class of 2010 who reported completing a core curriculum—defined as four or more years of English, three or more years of mathematics, three or more years of natural science, and three or more years of social science and history—scored, on average, 151 points higher on the SAT than those who did not complete a core curriculum.” We’ve known at least since Socrates that challenging, well-sequenced coursework leads to more learning. It is time for us, as a nation, to act on that knowledge and give all students the common core curriculum they need to be prepared for advanced reading and learning.

Endnotes
9. ACT, Reading between the Lines: What the ACT Reveals about College Readiness in Reading (Iowa City, IA: ACT, 2006).
10. Wirtz et al., On Further Examination; and William W. Turnbull, Student Change, Program Change: Why the SAT Scores Kept Falling (New York: College Entrance Examination Board, 1985).
11. Wirtz et al., On Further Examination.

(Continued on page 53)
Advanced Texts

(Continued from page 11)

38. National Reading Panel, Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction; Reports of the Subgroups (Washington, DC: National Institute of Child Health and Human Development, 2000).
41. O’Reilly and McNamara, “The Impact of Science Knowledge.”
51. O’Reilly and McNamara, “The Impact of Science Knowledge”; and Shapiro, “Including Prior Knowledge.”
Introduction

A language arts curriculum congruent with the Common Core State Standards must contain the practices and materials that will ultimately lead to developing every student’s capacity to read and comprehend complex text independently and proficiently (CCSS Reading Standard 10). It needs to do so in ways that make clear the joys and riches found in text. This paper discusses those elements in three main sections: foundational literacy practices, reading comprehension, and volume of reading.

What do we mean by ‘both and’ literacy instruction? Just that all of the following elements need to be available in a way that provides a coherent experience for students: solid grounding in the foundational reading skills, development of academic language (vocabulary and syntax), the steady growth of knowledge, experiences that lead to the judicious use of comprehension strategies, the ability to express thoughts and learning clearly through speaking and writing, and the capacity and motivation to sustain a volume of engaged reading.

A solid program has to be built upon a sound research and practice base. It needs to be doable by a wide variety of teachers. It must flex to a variety of student skill levels and offer students support without making unreasonable demands on a teacher’s energy.

All this takes time. It takes lots of time. To be successful, a program must be generous in allocating adequate time for students to engage in the practices that will make them strong readers, and allow more time yet for the students who need more. Richard Allington has argued for decades that students need lots of time to read and to be directly helped to do so (2002). Along with students, teachers need time set aside to come together, focus on instruction and curriculum, and learn about these best practices. This is all easier said than done of course. But there is a good chance that time will be allocated well if: schools and teachers value the work highly, can keep themselves honest about time constraints, can agree to focus on all the ingredients of a full literacy program, and can encourage reading, writing, speaking and listening to percolate through all subjects.

Teachers need to be able to envision how the components of such a comprehensive program can fit into their current classroom practices. The intent here is to help teachers determine which aspects of their current practice are inherently aligned with the CCSS and which aspects of existing practices must be added to, adapted or shifted. The lens for this examination will be the elements identified above.

Through conducting such an evaluation, educators can make thoughtful decisions regarding how to adjust their practice and materials, while schools and districts can consider rationally and carefully what shifts in scheduling, programming, school priorities and resource allocations need to be put into place as supports for the teachers and children. The resultant decisions can then have a strong likelihood of leading to healthy literacy learning outcomes for a great number of children.

Liben and Liben
Building a Strong Foundation in the Early Years

The text complexity demands of the Common Core State Standards\(^1\) make the development of a sturdy reading foundation in the early grades more essential than ever, as students will be asked to read significantly more complex text once they enter second grade and ever after. What is needed is a strategically designed, carefully sequenced foundational program with frequent, built-in opportunities for teachers to assess student progress and adjust instruction accordingly. Studies going back to the National Reading Panel (NICH 2000; Adams, 1990, Stuebing et al 2008) clearly show this type of approach to be optimal in supporting students’ mastery of the sound/spelling patterns necessary – but not alone sufficient – for the development of proficient reading (Bus, Adriana G. and van IJzendoorn, 1999). Developing foundational capacities and the confidence they engender in young readers can bring all students into the rewards literacy can provide. In truth, as every teacher knows, the efficacy developed by being able to read fluently and well is, in and of itself, hugely motivational.

The states and districts that have adopted the CCSS for ELA & Literacy are serious in their intent for all students to achieve this level of proficiency. Those students who do not reach proficiency levels on the first exposures to the foundations of reading will need more exposures and experiences quickly. Otherwise, they risk becoming the students reading far below grade level in high school – the ones who are far less likely to graduate. (Hernandez, 2011). It is imperative to stop this cycle and reverse the cumulative effects of early reading problems. To do so, there needs to be an understanding of what might cause additional difficulty for some students so that a solid foundational reading program can be created that stops as many problems from arising as possible.

Alphabetic Knowledge: Accurate and Automatic Recognition of letters

Alphabetic knowledge is how quickly students (or anyone) recognize and name a letter of the alphabet, in both lower and upper case forms. For years it has been known that students who take longer to do this are more likely to have trouble learning to read (Georgiou et al, 2008; Lervag and Hulme, 2009). This reflects the fact that letters and letter combinations once learned still need to be recognized, and recognized efficiently, before they can be connected to their associated sounds (Adams, 1990). Thus, some students need more (in at least some cases far more) opportunities to work with letters and letter-sound associations in order to reinforce these connections.

Phonological Processing

Some students who may quickly recognize and identify learned letters or letter combinations have trouble connecting them to their associated sounds. This is called a phonological deficit (or sometimes phonological processing problem) and has also been shown to be associated with early reading difficulties (Georgiou et al, 2008; Lervag and Hulme, 2009). Similar to the process for strengthening alphabetic knowledge, these students need more opportunities to work with letters and letter-sound patterns, sometimes far more, in order to reinforce these connections. Unfortunately, some students have both these challenges, sometimes referred to as double-deficit (Tanaka et al, 2011; Wolf and

\(^1\) Demands formally begin with 2\(^{nd}\) grade in the CCSS, but must be prepared for earlier. See Supplement to Appendix A for the current quantitative scales for text complexity (http://www.corestandards.org/assets/E0813_Appendix_A_New_Research_on_Text_Complexity.pdf).
Bowers, 1999; Cronin, 2011), and these children undoubtedly need far more opportunities both to learn letter patterns and to reinforce letter-sound associations in active, varied and well-designed ways.²

**Vocabulary**

Many students who are born into households where there is less access to text and where language stores are not as rich or varied arrive in kindergarten with a massive gap in the numbers of words they know, use, and can recognize, possibly having heard as many as 30 million words less than some of their peers between birth and age 5 (Hart and Risley, 2003). Current vocabulary instruction is not meeting the needs of these students (Biemiller 2010). Vocabulary growth is essential to reading proficiency (NAEP, 2012; Nelson et al, 2012) especially with the complex text called for by the standards. Children need the opportunity to learn as many words as possible as early as possible (Biemiller 2010). It is far harder to catch up than to stay abreast. Contextualized and vigorous word study early in school also means children will be learning a lot more about the world, since word and world knowledge are tightly connected.

If all these challenges are present together, which is unfortunately not rare, children could potentially be facing a *triple* threat. It is not unusual for schools to have significant populations of students who may be facing such a triple threat to their language and reading development. This is even more reason to supply careful foundational instruction from the beginning for all children.

It is important to know and remember that these problems, whether they present by themselves or in combination, are *in no way* connected to intelligence. Students who present with these deficits can learn to read and can comprehend text as well as any of their peers if they are given targeted, research-based opportunities. Children must be provided the time and attention they need to develop the foundational skills essential to their early schooling.

With financially-strapped districts sometimes needing to delay identifying lagging students for additional services, it becomes imperative for early childhood teachers to have the materials and guidance to address and support these needs in a timely, efficient, and engaging way. This support must be present in the stock materials within their classrooms. Ideally, regular classroom support would be tightly coordinated with RTI and other intervention plans and materials as well, so children have an integrated and seamless experience with both the first line materials and supporting materials. Approaching these challenges with creative solutions is great work for schools and groups of primary grade teachers to engage in together.

**Fluency**

To assure that all young readers achieve reading fluency, well-developed materials need to provide frequent and differentiated opportunities for students to practice oral reading and receive feedback. For at least the next several years of transition to CCSS, reading fluency will be an issue for many students

---

² Though there is still discussion among researchers whether this is in fact one process or two, there is no disagreement that the remedy would be the same in either case.
up and down the grades since much of what is being read is the more complex text called for by the CCSS (Benjamin and Schwanenflugel, 2010). Students also need to be given the opportunity to listen to fluent reading while following along in the text and “reading in their head” (Chard, et al. 2002). The emphasis on fluency instruction must include expression (prosody), as well as accuracy and a chance to develop one’s own sense of a reading rate appropriate to the text being read. All of this must be clearly and strongly connected to comprehension. Practicing to read fluently offers an authentic opportunity to apply a broad range of cueing systems facile readers use automatically: grapho-phonemic, semantic and syntactic clues are all taken in during the course of proficient reading. To ensure all students are getting the chance to become fluent, there need to be several more elements folded into a ‘both and’ literacy classroom. There needs to be a way for teachers to systematically assess fluency, the program needs to have systems for teachers to monitor those results, and it needs to provide all students with the opportunity, the time and the attention needed to become fluent. Not as an end in itself, but as a necessary precursor to independent reading success.

A strong reading foundation is the essential bedrock students need to access for themselves the world of knowledge and ideas stored in print and to find the joy and rewards available in the universe of books. By itself, it is not sufficient. Without it, though, children cannot hope to read “independently and proficiently.”

**Comprehension.**

Comprehension, the ultimate goal of all reading instruction, grows from many of the same components as a solid foundational program: fluency, academic vocabulary, syntax, and knowledge. A comprehensive literacy program needs to address each of these. But comprehension doesn’t need to wait until students can access text for themselves. It should be part of every classroom every day from the beginning of a students’ school career until they graduate.

*The essential role of read aloud in the early grades*

Anchor Standard 10 requires all students to read complex text “independently and proficiently” by the end of each grade band and to demonstrate steady progress toward that in between. A rich and purposeful read aloud curriculum helps fulfill Standard 10 before students are asked to read grade level complex text on their own. Beloved books can be returned to again and again so their nuances can be explored more deeply. Teachers can read aloud to build students’ knowledge of the world beyond their scope and to help students make connections from the known to the new. There is likely no better way to draw children in to the treasures stored in the written word than through reading aloud to them as much as possible.

Read aloud can and should provide part of the social studies, arts, and science instruction. Teachers can then feel assured they are giving their students both the time they need to become solid readers and the exposure to the world of ideas needed for building sturdy foundations in the content disciplines. This will pay off even if the content being read does not rigidly adhere to the local content frameworks or standards in these areas, although it is more efficient if it does. A foundation of wide ranging knowledge helps promote the later development of specialized knowledge.
An additional benefit to building knowledge through reading aloud is that it demonstrates to students early on that they can learn from reading. The early and repeated demonstrations of rich text as a source of deep learning helps ensure teachers in all grades are fulfilling the mix of informational text to literary text (50/50) called for by the CCSS for ELA in the elementary grades. Another virtue of expanding children’s exposure to informational text is the strong likelihood that more boys will discover the joys of text than has been the case when the reading range relies too heavily on narrative literature. Girls may discover or expand aptitudes for learning about processes and topics they might otherwise have remained ignorant about (Sullivan, 2004, Tyre 2009).

A wide ranging and purposeful read aloud, one that permits plenty of time for discussion and processing of the ideas encountered, brings the world into the early elementary classroom in a rich and egalitarian way. It allows all children to learn a wide array of knowledge about the artistic, historical, literary and scientific spheres while engaging them in rich academic discussions. Readings and activities should be designed to build on one another and create a coherent body of knowledge (as called for in the CCSS ELA on page 33). This will also support young students in their growing understanding of complex semantic and syntactic patterns (Adams 2011) as well as build enjoyment and comprehension.

Of particular note is the equity built into such a coherent read aloud curriculum. Jumping from topic to topic and landing briefly on each privilege children who know something about those topics from elsewhere. These children tend to be the children from more educated households. Other students often can’t make much sense of the topic because they are lacking the knowledge necessary to make the new information meaningful. Systematically building knowledge for everyone, as the CCSS ELA calls for clearly on page 33, combined with this sort of deliberately crafted approach to reading aloud, helps level the playing field.

In sum, reading aloud as a mindful, planned and essential part of the curriculum is an essential component to fulfilling the Common Core State Standards. Reading to children in the early grades as well as in later grades helps build knowledge and comprehension while students are learning and practicing the foundational skills they need to know to do this for themselves. Along the way, it can develop essential academic vocabulary, cultivate comfort with more complex syntax and build knowledge: three of the building blocks essential to building capacity with comprehension.

**Building knowledge:**

Knowledge has long been connected to comprehension (Hirsch, 1987; Saamio et al, 1990; Hoover and Gough, 1990; Tunmer and Hoover, 1992; Gough et al, 1996; Carver, 1998, Catts et al, 2006; Hirsch, 2006). A ‘both and’ literacy program needs to attend carefully and systematically to the development of background knowledge in later grades as much as in earlier ones. This requirement is clearly laid out in the CCSS (ELA 33).

**Attending to syntax**

As noted, read alouds in K-2 should attend to complex syntax. But careful study of sentence structure shouldn’t end in these grades. Teachers of English Language Learners have long known the importance of

Liben and Liben
of syntax (Wong-Filmore and Snow 2000; Bunch et al 2012). Syntax is one of the features of text most likely to cause student difficulty (Nelson et al 2012, ACT 2006). Attention to syntax in all grades is an essential component of a high quality literacy program. Complex sentences bear hearing or looking at multiple times in order to fully understand them. This is yet another reason why student cravings to have books read to them multiple times should be honored and even designed into instruction as a common event, and is one of the many reasons frequent close and careful reading opportunities are emphasized in discussions of the instructional shifts called for by the ELA standards.

*Shared reading of grade-level complex text: an instructional shift*

The most unique feature of the CCSS for ELA & Literacy may be the absolute insistence that all students read and comprehend literary and informational text of grade-level complexity, including poetry, drama and narrative, history/social studies, science and technical texts, independently and proficiently (RL and RI Standard 10). Students need to demonstrate this facility by reading texts that get progressively more complex. Since Standard 10 divides text complexity into grade bands rather than stepping up complexity grade by grade, the “in-between” periods allow for “scaffolding as needed” for texts near the high ends of the bands.

No single aspect of the standards is more challenging to implement than this. Many students will need support and scaffolding for sure. But what they need first is full access to complex texts much more frequently than has been customary in most settings. This requires a major shift in practice that will be a departure from what many teachers are accustomed to, which is the practice of always giving students “just-right” texts, or leveled readers, as the core of their instructed reading. With leveled reading groups, students have been supported by differentiating the levels of text difficulty. Going forward, for much of their instructional reading time, students will need to be supported and encouraged in reading grade-level complex text (Shanahan 2012). Differentiation will primarily come in varying the supports required to allow each student access to text of grade-level complexity. Finding and applying those high quality instructional supports needs to become a major focus of CCSS aligned reading instruction.

What might such instruction and support look like? There are many answers, and more emerging each month. Small group instruction, full class instruction, many student-to-student interactions, use of all four strands of the ELA standards -- these and more should be folded into a Common Core aligned classroom. Creative teachers and curriculum providers are experimenting with a variety of models of reading instruction to support all students with complex text. Influenced by Standard One, which calls on students to “read closely to determine what the text says explicitly and make logical inferences from it,” many of these models are referred to as “close reading”. There is a list of some of those notable resources and early efforts provided in an appendix to this article. It is a resource collection that can be expanded collaboratively over time. A truly wonderful “intended consequence” of the standards is the increase in just this type of collaboration across the country.

While many approaches might yet be discovered, there are some common instructional patterns and reoccurring ingredients emerging that deserve mention. They have in common that the close attention paid to text--to author’s craft and text structure, to word choice, to the challenging vocabulary and syntax that are features of complex text--will strengthen students’ ability to handle these challenges for themselves.

One key ingredient to these approaches is that they all draw on the design of the CCSS ELA itself. There are four strands in the ELA standards: speaking and listening, language, reading and writing. The

Liben and Liben
introductory materials make it very clear that these standards are meant to be woven together. They represent an integrated model for literacy (CCSS, 4). Students need to discuss ideas they have encountered in print, especially when those ideas are complicated and come delivered via complex syntax and less common vocabulary. At times, they may need to hear text read aloud while following along and “reading in their heads,” and then to re-read it silently. They need to ask questions of the text and be directed by well-crafted questions to pay attention to the details and structures that matter. They need to sort out their beliefs about what they’ve encountered, weigh the evidence for it, and then present those ideas and that evidence in writing.

A second design feature of the standards is the constant presence of Reading Standard One and Writing Standard Nine, the big “evidence standards”. At every grade, students are asked to attend directly and closely to the text to determine what is stated explicitly in the text and what can (or cannot) be inferred. The standards demand careful and close reading and then for the reader to provide evidence from the text for assertions about it. Practicing disciplined, careful reading can and will assist all students in learning how to deal with complex text. Facile and capable students will need to slow down and apply more care and discipline to their findings about text. Weaker readers, frequently referred to as ‘struggling’ readers, will find that effort and tenacity are virtues that are rewarded when the pace is slower and the text denser. Finding and presenting an evidence base for what you believe cultivates habits of mind that will enable students to become deep and excellent readers. With the CCSS, the race is not to the swift, but to the students who take care and notice. Instructional practice and aligned materials need to shift to provide much more time and support for reading when the text is complex and the demand for evidence is high. Good materials should evidence careful pacing and a steady demand for textual evidence.

The design of the standards themselves can provide some, but not all, of the ingredients needed to support all students. There also is need for solid instruction and carefully designed supports that allow students to achieve the standards and experience success as a result of their hard work. Students who are not used to wrestling with challenging texts will have to be taught explicitly that striving to accomplish something worthwhile is a positive thing to do. Others may need to learn that productive effort can be a source of pleasure with reading just as it can be on the playing field or in the practice room. Students who aren’t exerting themselves at all may need to be challenged to do so or given a more demanding task. Students having lots of trouble are going to need to be bolstered by good instructional scaffolds and encouraged by supportive peers and teachers. The materials or the instructor will need to anticipate and/or diagnose the sources of difficulty. These difficulties will frequently reside in the challenging vocabulary and syntax that are the primary features of complex text that cause students difficulty (Nelson et al 2012). A student may lack stamina because of a lack of reading fluency. He may not be properly monitoring comprehension or not know what strategies he can use when comprehension falters. Whatever the source of difficulty, students need to be given tools and encouragement to work through the impediment and achieve success.

Good materials and good instruction will build in strategies such as multiple reads, chunking the text, and a sequence of text dependent questions that, when addressed, unpack and illuminate what the text has to offer. Materials and instruction will push students to question the author. They will highlight and address key vocabulary and focus attention on the most complex sentences, all the while incorporating and integrating reading, writing, language, speaking and listening.

The CCSS include standards for literacy in social studies, science and technical subjects and a requirement that 50 percent of what students read in elementary school and 70 percent of what they
read in high school be informational text. A ‘both and’ literacy program needs to insure that close reading and other methods to support all students in reading complex text reflect these requirements.

Providing a Volume of Reading while Building in More Support:

Guided Reading with Accountable Independent Reading (GRAIR)

Students need the opportunity to read a volume of texts that engage them, at times based on individual choice, at times based on direction by the teacher. An example of the latter would be to guide reading selections to enhance connections to topics and themes being addressed in the curriculum. Both of these “selection criteria” have the added benefit of allowing students to read harder text on their own than they might otherwise due either to motivation or the ability to build on an earlier knowledge base. At times this volume may come from texts suggested by the teacher for any number of specific purposes. Regardless of the source or selection criteria, students need material they can read independently or with limited assist from their teacher or each other. Many students will relish this opportunity; others will need to be held responsible to really read during these independent times. We are suggesting the strength of the guided reading structure be brought to bear on bringing these more reluctant readers into the joy that comes from sustained reading of engaging texts.

That is important to accomplish because these opportunities are where stamina, efficacy and persistence develop, where vocabularies and knowledge bases can be rapidly expanded through contextualized exposure to lots of words, and where students learn the sheer pleasure of becoming lost in the printed world of ideas.

Students will not come to thrive as independent and capable readers unless they also get a chance to practice. Every student needs to be able to follow his own interests and read texts of his choosing. Children need to see that reading is a way to build knowledge about something being studied elsewhere in the curriculum. Sometimes, those texts will be at or even below a student’s current comfort level, but sometimes, complexity may be higher because a student becomes so invested in a topic or because she is reading with peers who can encourage and assist her (Morgan et al 2010).

There is an additional need teachers and students share that guided reading groups have traditionally met. That is the need for small groups of students – especially those who need it most – to have focused time with their teacher. Children needing even more support with the grade-level complex text currently being read in shared reading can get this help with their teacher during guided reading. Teachers can spend some time discussing what the group is reading independently (thus holding the group accountable for their independent reading and validating student choice), but then can turn as needed to strengthening the students’ comprehension of the grade-level text.

A Guided and Accountable Independent Reading (GRAIR) Block can provide the opportunity and space for all of this. Students can read texts of their choice, curricula-related texts, teacher suggested texts (or some combination of all) roughly at their current level and get the small group time with their teacher

Liben and Liben
and peers that will encourage them to stretch to higher levels. Those stretches can be common when students are following their own interests deeper into a subject, text type or author. Reading growth can be fast-tracked when GRAIR is coupled to the close and coached shared reading of complex text that also would be a regular part of the school day in a ‘both and’ literacy curriculum.

Learning is further reinforced, differentiated and strengthened in this GRAIR block. Students get the practice and materials they need to progress as readers moving at varied speeds. They get these opportunities with a wide variety of texts. All the texts already present in the classroom or school library can be pulled into play for GRAIR.

One important difference to highlight between GRAIR and traditional guided reading or leveled reading programs; GRAIR is not when most reading and writing instruction takes place; shared reading of grade-level complex text is. This distinction is vital. It means that when the teacher meets with small groups during GRAIR she can engage children in discussion of the texts they are reading, share their excitement and pleasure, and use this time for additional support with the complex text used for shared reading as needed. She can do this because she doesn’t have to worry about getting all her reading instruction done during the interaction. Many of the techniques from traditional guided reading—response journals, book talks, questions, and author studies—can be incorporated into GRAIR. Taken together, these activities provide the “accountable” part of the independent reading program.

Another difference involves a greater emphasis on student choice. Students can read more challenging text when they are interested in the topic, genre or author and read with friends. This means texts do not have to be pegged at an exact level, and students are likely therefore to have a wider choice of topics, texts and authors.

GRAIR can help meet the critical need to provide a volume of engaged reading for all students, as well as offer more time and attention with complex text for those students who need it most. A truly ‘both and’ literacy program must contain all of this. Schools and groups of teachers are starting to experiment with this model and it will be interesting to follow their discoveries and innovations.

**Conclusion**

The achievement gap persists stubbornly despite vigorous efforts to address it for over half a century by many well-intentioned, hard-working educators. Too many of those efforts have contained some of the essential ingredients, but not all of them. Positions – about which subset of ingredients is the “right” subset, which classroom structure is the proper structure, which set of materials is the most authentic – have calcified into defensive postures, and without meaning to, educators have taken to protecting turf rather than ensuring that each and every student gets the full spectrum of reading exposure and instruction. A foundation of solid reading skills that includes fluency, development of strong academic language (vocabulary and syntax), the building of stores of knowledge, cultivation of a sturdy and flexible suite of comprehension strategies, and opportunities to choose and read engaging texts alone and with others – all of these are essential for reading success.

Liben and Liben
Early on, we mentioned the importance of being honest about the time it would take to allow all students to read grade level complex text “independently and proficiently.” It will take a lot of time. But the time needed to do this can come in large part from bringing literacy back into the study of social studies and science and stretching reading and writing, listening and speaking across the school day, instead of confining it to a 90 minute block. The CCSS call for informational text means that reading instruction can (must) include texts from the disciplines. Allowing all children to read complex informational text will serve the dual role of enhancing their knowledge of the world and developing them into more literate individuals. Allowing all children access to a wide volume of reading opportunities, whether teacher-directed or self-selected, will grow their sense of the riches available through text and will help insure they are able to and love to read.

Working to create curricula that bring all these ingredients together in a coherent and comprehensive fashion is work well worth doing. Eliminating the great disparity in ELA capacities between students, between neighborhoods, between districts, is something few – especially classroom teachers – would fail to celebrate. Nor would anybody disagree that addressing and eliminating these disparities as early in a child’s school career as possible would have an enormously positive ripple effect on the remainder of a child’s education. Helping students develop into sturdy and flexible readers in elementary school may not guarantee the elimination of the achievement gap, but what a wonderful start it would be!
References


Note: Rebekah Benjamin discusses the research presented in this article in a podcast from the “Voice of Literacy”: http://www.voiceofliteracy.org/posts/41784.


Cunningham, A.E., K. E. Stanovich, & M. R. Wilson, M.R. Cognitive variation in adult college students differing in reading ability. In T. H. Carr & B. A. Levy (Eds.), Reading and its development: Component skills.


O’Connor, R.E., Swanson, H.E., & Geraghty, C (2010). Improvement in reading rate under independent and difficult text levels: Influences on word and comprehension skills. Journal of Educational Psychology, 102, 1–19.


Stuebing, Karla K.; Barth, Amy E.; Cirino, Paul T.; Francis, David J.; Fletcher, Jack M. A response to recent reanalyses of the National Reading Panel report: Effects of systematic phonics instruction are practically significant. *Journal of Educational Psychology*, Vol 100(1), Feb 2008, 123-134.


Appendix A: Additional Resources
(for instructional models and resources, action research and additional provocative discussion)
This collection is a work in progress and is not intended to be exhaustive. These are simply sources we have returned to ourselves frequently to build and push our own understanding. Where we point to specific district or state resources, it is because we’ve seen lively and transformative Common Core implementation work going on there. We invite additional suggestions and recommendations to increase both our own knowledge and this resource list.

Achieve the Core
Home site of Student Achievement Partners, founded by primary Common Core Standards authors to guide the transition to the CCSS. Resources are carefully vetted. Teachers contribute much of the content to the site through a variety of curriculum initiatives. The authors of this paper are both on the Literacy team at Student Achievement Partners.

http://www.achievethecore.org/

A non-freaked out approach to teaching the common core
As advertised. This is a lively, refreshing and free-ranging blog about common core implementation.

http://www.teachingthecore.com/non-freaked-approach-common-core-01/

Burkins and Yaris
Jan Burkins and Kim Yaris are always thoughtful and considered (and passionate) in their approach to literacy and their focus on questions of common core implementation for teachers and their students.

http://www.burkinsandyaris.com/blog/

Core Task Project
Record of an extraordinary (and powerful) grass roots implementation project in and around Reno, Nevada. High quality sifters of other resources. Always passionate and committed to delivering the Common Core Standards “unfiltered” to teachers.

http://coretaskproject.com/

Doug Fisher and Nancy Frey: Literacy for Life
Two university-based educators who “get” teachers and teaching in a practical way. Unusually generous in sharing their own intellectual property.

http://www.fisherandfrey.com

Engage New York
A large resource of videos and ideas. Storehouse for the unprecedented effort to make an Open Education Resource Common Core curriculum for ELA and math for children in Pre-K to 12. Open to all, not just NYS educators.

http://www.engageny.org/common-core-curriculum-assessments

Louisiana Resources for Common Core Classroom support
A rapidly developing resource bank of outlines and guidance for CCSS planning. The toolbox linked is excellent.

http://www.louisianabelieves.com/resources/classroom-support-toolbox

SCASS ELA (State Collaborative on Assessment and Student Standards)
A teaching and resource site centered on helping understand text complexity and the central role it plays.

http://www.ccsso.org/Navigating_Text_Complexity.html

Tim Shanahan
Tim Shanahan is another university-based educator who has deep knowledge of literacy and has immersed himself in understanding and discussing the Common Core for ELA in this blog.

http://www.shanahanonliteracy.com/

Vermont Writing Collaborative
A collaborative of classroom teachers who have worked together to understand what supports students need to understand what they read with enough depth and clarity to write well about it. They run courses and have published an excellent book about writing.

http://www.vermontwritingcollaborative.org/
Appendix B: What activities might take place during GRAIR K-2?

The tables below outline examples of general activities that can be done during Guided Reading/Accountable Independent Reading (GRAIR). GRAIR time is an opportunity to support all students by incorporating activities and lessons included in the A&R and Supplemental Guides into your literacy routines. Undoubtedly, teachers will also implement a variety of other best practices, and many will be similar to literacy centers that have been successful in the past. GRAIR can be done daily or a few times per week.

<table>
<thead>
<tr>
<th>Small Group Instruction – Targeted instruction to support:</th>
<th>K–2: Guided Reading</th>
</tr>
</thead>
</table>
| Building Knowledge                                      | • Preview or review content from informational text read alouds  
• Provide small group opportunities to practice speaking and listening  
• Especially helpful for EL and SPED students |
| Syntax                                                   | • Use sentence strips, index cards or other methods to process long sentences from read aloud texts  
• Students can break sentences into words and phrases, count words, notice punctuation |
| Vocabulary                                                | • Mini-lessons to review multiple meaning words (i.e. – run a mile; run away) and word forms (i.e. – run, ran, running)  
• Using a variety of methods, review words you feel students need more help with; especially helpful for ELL students |
| Fluency                                                  | • Partner reading or shared reading  
• Teacher can model proficient reading with students following along in the text, as well as provide students with specific and instant feedback when they read |
| Foundational Skills                                      | • Review and reinforce concepts of print, letter recognition, phonemic awareness, spelling/sound patterns as needed.  
• Provide ideas for targeted reinforcement or reteaching as well as guidance on pacing lessons  
• RTI - implement Tier 2 interventions as specified by school or district. It will be important to consider using material introduced in class a second time to build fluency, build student confidence and give students the repeated exposure they may need for mastery. RTI should offer support and guidance to the classroom teacher and the intervention specialist around comprehensive re-teaching efforts of Skills, as would likely occur in a formal Tier 2 model. |
| Conferencing                                             | • Conference with students about independent reading to check for understanding. Students need to be reminded they are accountable for learning while reading.  
• Formative and diagnostic assessments must be a regular part of teacher practice and not left to external scheduling or avoided. |

<table>
<thead>
<tr>
<th>Literacy Centers – (including Accountable Independent Reading) designed to support:</th>
<th>K–2</th>
<th>Kindergarten</th>
<th>1st/2nd Grade</th>
</tr>
</thead>
</table>
| Student Interests                                                           | • Students choose texts for independent reading based on interests from leveled libraries, classroom libraries, etc.  
• Student may choose texts that stretch slightly beyond their independent reading level.  
• Teachers create | • Students can read leveled pre-primers. | • Students can complete journal activities related to independent reading topics. |
<table>
<thead>
<tr>
<th>Opportunities for Speaking &amp; Listening activities and creative performance tasks for students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Knowledge</td>
</tr>
<tr>
<td><strong>Book Center</strong> – book baskets organized by Listening &amp; Learning topic</td>
</tr>
<tr>
<td><strong>Video Center</strong> – Students can watch videos related to current or past topics.</td>
</tr>
<tr>
<td><strong>Listening Center</strong>: Pre-recorded read aloud should be available so students can listen to and follow along with stories already heard in class or texts related to social studies or science content topics or other stories.</td>
</tr>
<tr>
<td><strong>Drawing Center</strong> – Students can draw or represent information about social studies and science topics.</td>
</tr>
<tr>
<td>Teachers can create activities to encourage students to demonstrate knowledge with pictures and words.</td>
</tr>
<tr>
<td><strong>Writing Center</strong> – write about content topics</td>
</tr>
<tr>
<td><strong>Video and Listening Centers</strong> – related to science and social studies topics; include reading or writing short summaries or answering questions about videos</td>
</tr>
<tr>
<td>Vocabulary &amp; Syntax</td>
</tr>
<tr>
<td>Unlimited number of vocabulary activities related to words from read aloud books</td>
</tr>
<tr>
<td>Examine and manipulate “juicy” sentences from big books, student read materials or books previously read alouds; for kindergarten, create rebus style sentences related to Listening &amp; Learning topics.</td>
</tr>
<tr>
<td>Fluency</td>
</tr>
<tr>
<td><strong>Listening Center</strong> - Pre-record short passages for students to listen to and follow along</td>
</tr>
<tr>
<td>Refer to the Fluency Packets available on <a href="http://www.achievethecore.org">www.achievethecore.org</a> or <a href="http://www.engageNY.org">www.engageNY.org</a> for additional suggestions and passages.</td>
</tr>
<tr>
<td><strong>Recording Center</strong> – students can read aloud and record poems or short decodable texts and teacher can review later for fluency.</td>
</tr>
<tr>
<td>Foundational Skills</td>
</tr>
<tr>
<td><strong>Writing Center</strong> – Students can practice handwriting, writing sight words, draw pictures of sight words, etc. Younger students can practice letter and number writing.</td>
</tr>
<tr>
<td>Use supplemental materials not yet tapped into for word work activities, or continue writing work introduced in class.</td>
</tr>
</tbody>
</table>