Complex Texts Require Complex Knowledge: Will the New English Standards Get the Content Curriculum They Need?

by Ruth Wattenberg

For three decades, E. D. Hirsch has argued that reading requires knowledge and that comprehension depends on knowing something about what is being discussed. High schoolers studying the Federalist Papers must know something about early American history to understand the relevance of its arguments. Adults following the debate over carbon emissions from coal-fired plants must have a grasp of the sciences to evaluate the claims and counterclaims made about global warming. The more that students know about a topic and its vocabulary, the more that they can learn from a new reading on a related topic, which, in turn, positions them to learn more from the next reading, and so on.

> *To build knowledge systematically, beginning in the earliest elementary grades, English language arts "texts—within and across grade levels—need to be selected around topics or themes that systematically develop the knowledge base of students. Within a grade level, there should be an adequate number of titles on a single topic that would allow children to study that topic for a sustained period. The knowledge children have learned about particular topics in early grade levels should then be expanded and developed in subsequent grade levels to ensure an increasingly deeper understanding of these topics…. Preparation for reading complex informational texts should begin at the very earliest elementary school grades."*
>
> – From the Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects

The opposite is true as well, with devastating effects on equity. Hirsch explains that advantaged students who learn lots of background knowledge at home arrive at school with "the mental scaffolding and Velcro to catch hold of what is going on, and they can turn that new knowledge into still more mental Velcro to gain still more knowledge. But those children who arrive at school lacking the relevant experience and vocabulary—they see not, neither do they understand. They fall further and further behind."[1]

The antidote to this downward spiral, according to Hirsch, Marilyn Adams, and others, is a strong school curriculum that systematically builds a student's store of knowledge.[2] Such a curriculum should use the most effective teaching approaches, including teaching topics in a coherent order and over a sustained period. This optimizes the Velcro effect, exploiting the fact that students learn new material and new words more quickly when the topic is familiar to them.

Yet this understanding of reading comprehension and how to strengthen it has barely penetrated American education (especially its elementary schools)—despite substantial evidence from cognitive science supporting it.[3] Instead the focus of reading comprehension instruction has been to teach a set of skills—comprehension, inference, metacognitive—not to impart the necessary knowledge.

The new Common Core State Standards (CCSS) for English language arts,[4] now adopted by forty-five states, are a welcome change from this strictly skills-centric approach to reading. In many ways, these standards resemble previous standards for English language arts (ELA), defining the skills in reading, writing, speaking, and listening that students should acquire in each grade, though with more rigor and precision. For example, they ask high school juniors and seniors to read, comprehend, and analyze such complex texts as Henry David Thoreau's *Walden* and Zora Neale Hurston's *Their Eyes Were Watching God*. Like previous expectations in ELA, these are skills standards (roughly 300 of them). They are also content-free, with a few well-chosen exceptions—including Shakespeare and seminal documents of American history, fables, tales, and myths.

Yet, unlike previous ELA standards, the CCSS have a commitment to content—the facts, ideas, connections, and concepts of the major K–12 disciplines: literature, history, science, and the arts. To read and understand complex texts, the CCSS say, skills are not enough. Students will also need a "foundation of knowledge" in "history/social studies, science, and other disciplines," which will "give them the background to be better readers in all content areas." In addition, "Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades." Building this foundation "should begin at the very earliest elementary school grades."[5]

But no such curriculum is commonly found in America's elementary schools; it must come from elsewhere—states or districts, commercial publishers, or teachers. What is necessary to put such a curriculum into place is substantial; simply tossing in random additional content in various grades is not adequate. Unfortunately, it does not appear that states or districts or the publishers of elementary reading textbooks are taking the necessary steps to put this content-rich curriculum into place. Let's hope that situation changes because without this indispensable curricular foundation, the CCSS do not have a chance to lift students to the reading levels that they propose.

This paper first discusses the curricular vacuum that exists at the elementary level, followed by what it would take to fill that void, and concludes with a review of CCSS implementation thus far.

The Entrenched, Content-Poor, Elementary Curriculum

The basic treatment of content in the elementary grades has not changed for decades. *A Nation at Risk,* the 1983 report of the National Commission on Excellence in Education,[6] decried "disturbing inadequacies" in American education, including the wholly inadequate content offered to students.

That report helped launch several decades of education reform, aimed at rectifying, however inadequately, the problems that it found. Among the changes were stiffer high school course requirements in the core subjects;[7] subject-matter exams in a growing number of states (as opposed to minimum competency tests);[8] increased numbers of students taking courses that are more advanced (though students are not always learning more as a result);[9] and state adoption of academic standards in major subject areas. Thirty years after *A Nation at Risk,* a new infrastructure—in the form of state-mandated requirements, standards, and exams—is in place, with the potential to support, encourage, and monitor greater learning at the high school level.

But, the *Nation at Risk* report had a glaring omission: Reflecting the nation's long-standing lack of interest in content in the early grades, the report's authors barely mentioned elementary schools. Unsurprisingly, the post-1983 education reforms barely touched them. Here is the crucial fact about the teaching of content in the elementary grades then—and still: So much time is spent on reading and math, especially reading, and so little time on the subjects—history/social studies, science, literature and arts—that build a student's foundation of knowledge.

According to the 1977 National Survey of Science and Mathematics Education, early-elementary teachers spent 95 minutes per day on reading and a total of 38 on *both* science and social studies—2.5 times as much on reading as on both other subjects together.[10] In upper elementary, when students have presumably learned the basic reading skills and reading time can be substantially cut back, teachers still spent 66 minutes per day on reading, 28 on science, and 34 on social studies—with reading still getting about twice the time of either of the other subjects.[11]

Was there any academic content or knowledge taught in those hours devoted to reading? The best way to find out is to look at the textbooks used to teach reading, commonly known as basal readers, which for many years have served as the spine of the reading curriculum. In 1983, William Schmidt and his colleagues at the Institute for Research on Teaching analyzed thirty-four basal readers[12] for second, fourth, and fifth grades, from eight major publishers, for a total of 1,959 different selections. Here is what they found:

- 42 percent had no subject-matter content at all! (defined as covering theories, facts, and information from typical elementary subjects, such as math, science, and social studies);

- 20 percent had content that was of a language arts nature—how words were formed, etc.;
- 20 percent had social science content (a third of which was "social themes," concerning "enduring problems of individual and social life," such as growing up, living with family members, etc.);
- 12 percent had science content; and
- less than 6 percent had content in any other major subject-matter area, including art or music.[13]

And, the lower the grade, the emptier. In second-grade books, 52 percent of the texts had no subject-matter content at all. Some 11 percent had science content and 14 percent social science.[14] Taken as a whole, U.S. elementary schools in the 1980s were woefully thin on content.

Since the 'Eighties

Since then, little has changed. The content-poor curriculum remains a staple at the elementary level. In contrast to secondary schools, most of the reform energy at the elementary level has focused on beefing up instruction in basic reading and math skills, with no infrastructure for driving improvements in the content areas. Even the academic content standards developed by states were typically weakest in the elementary grades.

The Fordham Institute has evaluated state standards in science and history periodically since 1998. Its reviewers have often aimed their greatest criticism at the early-grade standards. Consider this vague fourth-grade science standard from New Jersey in 2012: "Demonstrate understanding of the interrelationships among fundamental concepts and the physical, life, and Earth systems sciences." The reviewers concluded: "These expectations contain virtually no content; it's impossible to determine what students should know or be able to do. Furthermore, standards are frequently repeated from grade to grade, offering no clear progression of content or rigor."[15]

In social studies, where the average grade was a "D," the reviewers wrote in 2011 about Kentucky's standards: "Primary grades (K–3) focus on general concepts of American democracy, local Native American tribes, and national symbols and holidays…. But no specific subject matter—beyond the grade block's broad generalizations—is spelled out."[16]

Like standards, textbooks have continued to neglect the content that underlies reading comprehension. For example, twenty years after Schmidt's study of basal textbook content, Kate Walsh, now director of the National Council on Teacher Quality, reviewed in 2003 the first- and second-grade texts from five top-selling basal-reader series. She found that they offered "mostly incoherent, banal themes that missed opportunities to develop word and world knowledge by offering and exploiting content-rich themes."[17]

Even Less Time for Content

The recent policy emphasis on reading skills has led schools to further increase the time devoted to the English language arts block, leaving even less time devoted to history/social studies, science, and the arts than in earlier years. According to the National Survey of Science and Mathematics Education (NSSME), the total time spent in grades K–3 on both science and social studies has dropped forty-five minutes per week from 2000 to 2012—from 3 hours and 40 minutes in 2000 to 2 hours and 55 minutes in 2012. (It had risen slightly from 1977 to 2000; it is now lower than it was in 1975.) In grades 4–6, the drop from 2000 to 2012 was 95 minutes per week! (Table 1 shows minutes per **day**.)

Table 1. Minutes spent per day on science and social studies

NSSME/Horizon	1977	2000	2012
K–3 social studies	21	21	16
4–6 social studies	34	33	21
K–3 science	17	23	19
4–6 science	28	31	24

Sources: E. R. Banilower et al., *Report of the 2012 National Survey of Science and Mathematics Education* (Chapel Hill, N.C.: Horizon Research, 2013), Table 4.2; Weiss, *Report of the 1977 National Survey of Science, Mathematics, and Social Studies Education,* Table 25; and *Report of the 2000 National Survey of Science and Mathematics Education,* Table 4.3.

In 2010, in a national survey of teachers conducted by Common Core (an independent organization, unconnected to—though supportive of—CCSS),[18] 67 percent of regular elementary teachers indicated that social studies had been getting "less instructional time and resources over the past ten years" (or since they had begun teaching, if that was less than ten years earlier). Fifty percent said that science had been getting less; and 49 percent and 37 percent said the same, respectively, of art and music.

The squeeze on content was even tighter for struggling students. When elementary teachers were asked during what time period struggling students received extra instruction in ELA or math, 60 percent said that they were pulled from social studies class; 55 percent said from science class.[19] The bottom line: For decades, elementary schools have neglected to build the content foundation that students need and that the CCSS require for success. This reality is now ingrained in decades of elementary school practice.

To provide students with the necessary content foundation, the elementary curriculum must be thoroughly revamped. Once revamped, curricular tools (curriculum frameworks, course outlines) and classroom materials that embody the new curriculum must be produced.

Reimagining the Elementary Curriculum

Consider the changes needed for a content-rich curriculum to thrive. First, much more time must be devoted to learning content. In theory, this time could be made available through much-expanded science and history/social studies classes. A more likely, viable alternative is to infuse the content into the ELA class, an idea that E. D. Hirsch broached in his 2006 article, "Bringing Knowledge to the Language Arts." He argued that the constantly expanding ELA time block could aid content education rather than be an obstacle to it, if "we can impart to all students, in language arts classes and throughout the day, the knowledge that will enable them to read with strong comprehension."[20] This approach to integrating content into ELA is reflected in the CCSS, as evidenced by their section titled "How to Build Knowledge Systematically in ELA K–5."[21]

Second, to build foundational knowledge in history/social studies, science, and the arts, the CCSS call for a curriculum that "is intentionally and coherently structured to develop rich content knowledge within and across grades."[22] The best learning proceeds when new material is connected to previously learned material; that is when the Velcro of existing knowledge can best grab hold of the new material.

The coherent curriculum that the CCSS call for requires frameworks for teaching history/social studies, science, and the arts that identify the ultimate end-of-school learning goals for each subject and translate them into year-by-year topic sequences (much as the CCSS does for ELA). These sequences must indicate what content and skills are to be addressed in each grade, at what level of complexity, in what detail, and how it connects to content taught in previous and subsequent grades (again, much as the CCSS do for ELA). In a handful of states, the specificity and coherence of the existing history and science standards will suffice; but we know that in most states, the current standards in these subjects do not provide the necessary, coherent, grade-by-grade specifics.[23]

In theory, these curriculum frameworks could be developed by a school district or a state (or even a school). The benefit of establishing them at the state level is simply so that when students transfer from one school or district to another (disproportionately experienced by poor children), their education will not be further disrupted by the gaps and repetition that inevitably occur when they face a different curriculum after each move.

Third, once new frameworks clarify the content that should be taught at each grade, choices must be made about how to apportion the content to stand-alone subject classes or to content-infused ELA classes. Ideally, these choices should be reflected in course outlines. As with the frameworks themselves, there are advantages to establishing the course outlines at the state level. In this case, textbooks and curricular materials prepared for the ELA and subject classes could be developed for and shared across the state.

Fourth, CCSS requires that for each grade's ELA instruction, "texts—within and across grade levels—[are] around topics or themes that systematically develop the knowledge base of students. Within a grade level, there should be an adequate number of titles on a single topic that would allow children to study that topic for a sustained period. The knowledge children have learned about particular topics in early grade levels should then be expanded and developed in subsequent grade levels to ensure an increasingly deeper understanding for these topics." The frameworks and course outlines referred to earlier are what make it possible for teachers to introduce topics in early grades and know that they will be "expanded and developed" in later ones. The CCSS liken the linking of these texts within and across grades to "giving children various pieces of a puzzle in each grade that, over time, will form one big picture." This text selection could be made at the state or district level or at a school where teachers had time to take up such curricular work.

For some teachers, these raw materials—the grade-by-grade topic sequences and possibly the texts—will be all the guidance they want or need. Within this curricular framework, they can create and assemble a coherent collection of daily lessons from online resources, from their own files and materials, and via collaboration with their colleagues. But most elementary teachers will appreciate and benefit from (as will their students) a much fuller complement of curriculum materials that enable them to address the ELA skills and content knowledge prescribed for their grade. These include lesson plans, texts for students, read-alouds for teachers, classroom exercises, assignments, benchmark assessments, and vocabulary lists. Some of these curriculum materials would be customized for ELA classes, using the sequence of knowledge-building texts called for in the CCSS; others would be designed for separate classes in science, social studies, and the arts. Depending on their needs and skills, teachers would use a lot or just some of the provided materials. Either way, the materials would constitute a curricular spine around which teachers could improvise, confident that they were providing their students with the requisite knowledge. ("A Model for Content Instruction at the Elementary Level"—see sidebar—describes a curriculum that meets these criteria.)

As the Common Core standards kick in, and states and schools gird for the new assessments aligned with them, to what extent is such a revamped content-rich curriculum being laid? As states undertake implementation of the CCSS, are they focused narrowly on the 300+ skill standards? Or are they taking steps, as CCSS urges, to upgrade dramatically the content that is taught, through coherent content-infused ELA curricula and/or through new expanded courses in the content areas? Do the newly revised basal readers, which publishers claim are now aligned with the CCSS, integrate the necessary content? Or is their content still banal and their focus on skills still the overwhelming emphasis?

A Model for Content Instruction at the Elementary Level

The Core Knowledge Foundation (on whose board I serve) promotes the educational ideas of E. D. Hirsch. In 1988, the foundation first published the *Core Knowledge Sequence.*[24] It identifies the content from all subjects that students must learn by the end of grade eight to be well prepared for rigorous high school academics. Then it translates that content into grade-by-grade guidelines in which topics taught in one year build off the previous year's learning and create the platform for the next year.

The foundation has also produced Core Knowledge Language Arts (CKLA), a preschool through third-grade ELA curriculum designed for the extended ELA block and anchored by the coherent grade-by-grade content set forth in the *Core Knowledge Sequence.* The curriculum allows ample time to teach both the reading skills and the content that students need, which lays the foundation for more advanced reading and learning in later grades. Specifically, the CKLA curriculum:

- Engages students in the literary, arts, historical, and scientific content essential for broader and deeper studies in later grades.
- Builds knowledge sequentially and cumulatively, connecting topics and concepts within and across grades, using the grade-by-grade *Core Knowledge Sequence* as the spine of the coherent curriculum.
- Uses domain immersion to sustain attention on each topic, thus taking advantage of the finding that students can grasp the meaning of more and more complex domain-related vocabulary (and presumably, the ideas represented) when a topic is revisited at least several sessions in a row.
- Uses a heavy dose of teacher read-alouds (also recommended by the CCSS), so that long before children have fully developed reading skills, they can learn and discuss material presented orally by teachers.[25]

As a result, a second-grader, for instance, would get a substantial education in twelve domains, each of which builds on prior learning and sets the stage for future learning. Among the domains are: Fairy Tales and Tall Tales, Early Asian Civilizations, The Ancient Greek Civilization, Greek Myths, Westward Expansion, The U.S. Civil War, Fighting for a Cause, Cycles in Nature (plant, animal, human, and seasons), and Insects.

After learning from such curriculum in grades K–5, a middle schooler will possess the content foundation to read and comprehend complex grade-level texts across a wide range of topics in each of the core subjects—and then be ready to tackle the complex high school texts prescribed by the CCSS.

Implementation: The Evidence So Far

CCSS implementation is now well under way. According to the Center for Education Policy, "curricula aligned to the CCSS in math and English language arts are already being taught in at least some districts or grade levels" in thirty states.[26] The major publishers have revised their textbooks, issuing new versions that purport on their covers or on their websites to be aligned with the CCSS. While there is no comprehensive, detailed report of implementation activities, it is possible to glean impressions. To do so, I reviewed news coverage, several recent studies on CCSS implementation, and the CCSS/ELA areas on a handful of state education department websites. I also closely examined the second-grade basal readers from three popular textbook publishers.

Clearly, states and textbooks are emphasizing certain elements of the CCSS and not others. Specifically, both have focused on the CCSS call for: 1) early grades reading selections to be split 50–50 between fiction and non-fiction, which is an important way in which the CCSS hope that content knowledge will be built; 2) emphasizing the reading and interpretation of the text itself—citing its evidence, understanding its arguments, comparing it to other texts—in contrast to interpreting it through the lens of student experience and opinion; and 3) reading texts of grade-level complexity as opposed to leveled texts which are chosen to match, not stretch, students' reading levels. Each of these emphases is noted repeatedly in the 300+ numerated standards. In contrast, the call for building knowledge coherently within and across grades can't be captured by individual CCSS standards; and it is neglected in new textbooks and in states' implementation efforts. Here are the highlights of what I learned, beginning with the textbooks.

The Revised Basal Readers

Education Week reporter Stephen Sawchuck reviewed the pre– and post–Common Core versions of a number of fifth-grade texts to determine what changes had been made. He reported a number of changes, all of which related to meeting the CCSS's skill standards. "In the 2013 version of its Reading Street series, Pearson officials have excised 'reader response' questions and replaced them with prompts asking students to 'use examples from the text to justify your answer.'"[27] In another case, a revised assignment asked students to focus on "sensory details and other language" (a requirement of the CCSS). Sawchuck also spotted a number of changes related to how, and how often, students approached writing tasks.

But do the basal readers focus sustained attention on important topic domains, thus building students' content knowledge, as called for by the CCSS? In his comparison of the newest textbooks and their immediate predecessors, Sawchuck reported no major changes in the amount, quality, or coherence of the books' content except that they included additional non-fiction passages. But had the textbooks *already* improved their content from a decade ago when Walsh last reviewed them? If they had, that attention would not have been picked up by Sawchuck's look at only the most recent revisions.

To find out, I carefully reviewed the first-semester textbook from the second-grade basal series published by each of three major textbook publishers: Scott Foresman, Reading Street: Common Core; Houghton Mifflin, *Journeys: Common Core;* and *Macmillan, Treasures.*[28] As suggested in their titles, both *Reading Street* and *Journeys* have published newly revised textbook series that purport to reflect the Common Core Standards. As of this writing, Treasures had not yet issued a new series, but it has published an alignment guide, suggesting that its 2011 version is already aligned with the CCSS.

Vague, Content-light Themes. More Non-fiction but No More Coherence

Remember that the CCSS explicitly recommend that ELA texts be selected "around topics or themes that systematically develop the knowledge base of students." These textbooks do not do so. In two of the three textbooks (*Reading Street* and *Treasures*), the themes remain, as Walsh reported in 2003, vague "catch-all labels" that "address only utterly ordinary day-to-day knowledge."[29] Examples are "Friends and Family," "Community Heroes," "Working Together," and "Creative." The third textbook (*Journeys*), which consistently has stronger content than the other two, does not name its units by themes but gives a topic for each week of lessons. The topics are a mix of the substantive and commonplace—for example, "Animal Traits" and "Places Around Town."

There appears to be more non-fiction in these textbooks than what either Schmidt or Walsh found. A small number are excellent, informative readings containing foundation-building content, including readings on Helen Keller, the desert, and African-American inventors; and a book "Super Storms," by noted children's science author Seynour Simon. Most of the non-fiction is middling, offering light doses of random content.

Hardly Any Sustained Knowledge-building

In this random content lies the greatest weakness of these Common Core-ready books. The CCSS is explicit about the texts that should be used in ELA classes: "Within a grade level, there should be an adequate number of titles on a single topic that would allow children to study the topic for a sustained period." To measure prolonged attention, I established a very, very low standard—the 2+1 rule: I carefully reviewed each of these first-semester textbooks to identify content of any grain size—ideas, facts, concepts—that appeared at least twice in a one-week unit and then at least once more in another unit, in the first semester textbook *OR the second-semester textbook.*[30]

A startlingly small amount of content reached this threshold. In one textbook,[31] just one piece of content met this threshold—and it's a stretch: The reading selections included a strong passage on the desert, a companion piece on rain forests, a later reading about anteaters, and, many weeks later, a folktale that took place in a rain forest. Together, these selections, in an albeit loose arrangement, convey the broad idea that animals differ, live in different environments, and their features (e.g., size, amount of fur) and habitats relate to one another.

In another textbook,[32] a larger number of topics/ideas/concepts/facts receive at least minimally sustained attention, but the content on each topic is extremely thin and the array of topics random. For example, using the 2+1 rule, students would learn the definition of "immigrant," that immigrants come to the U.S. for work or family, and that their existence can be lonely—but virtually nothing more. There is nothing on the history of American immigration or the conditions that drove immigrants from their home countries. The only story about an immigrant is of a young girl, whom we learn nothing about except that she is lonely and it takes her a while to feel comfortable in her new school. About a dozen other pieces of content, of roughly the same thinness, meet this threshold.

In the third textbook,[33] a topic is truly developed over a number of readings across more than a single one-week unit. Multiple readings introduce ideas and facts that will enable students to understand later the concepts of species and of adaptation (though neither word is used). In these various readings, students are introduced to many different animals (e.g., Komodo lizards, bush dogs, various insects), some of their distinct features (e.g., puppies stay with their moms for eight weeks) and some ways in which they differ from each other (e.g., "bushy" vs. "skinny"). There are many memorable selections, including a wonderful chapter on jellyfish and another on animal habitats, and more. There is much to recommend in these readings. But let's put this text's very strong handling of this *one* topic in perspective: Recall that the second-grade CK/ELA unit provides a comparable immersion (possibly stronger) in twelve domains over a year; if this textbook provides an equally strong treatment of a second topic in the second-semester book, it would nonetheless still amount to only two immersions in a year!

In sum, these textbooks have generally taken seriously the skill requirements outlined in the Common Core Standards. As Sawchuck noted, there is much more attention to analyzing the text and much less on student opinions; more activities require students to find evidence, read closely, compare texts, and write. Yet these textbooks do not build content knowledge coherently over the elementary years. In schools that rely on these or similar basal readers for their ELA instruction, the CCSS commitment to building knowledge would be met only if students were also experiencing strong, coherent social studies, science, and arts curricula. We know, based on data from the last decade (reviewed here in earlier sections), that such curricula have not been in place. Has that changed with the implementation of the Common Core?

State Implementation Efforts

States have invested a good deal of effort in Common Core implementation, especially by revising curricular materials, invigorating websites, and providing teaches with professional development. But my review of major reports, news coverage about implementation, and a half-dozen state websites suggests that, with one exception, the needed curricular are still absent.

Major Curriculum Reboots: Almost None

To bring in the amount of new content necessary and provide it coherently, teachers need new curricula. But with one major exception (described below), it appears that no curricular reboot is under way in the states. The Center for Education Policy has conducted multiple surveys of states about CCSS implementation.[34, 35] While the survey asks no specific questions about revamping the content curriculum, it does pose open-ended questions about major priorities and challenges—which could elicit responses related to curriculum revamping. But no such effort surfaces in any form. There is no mention of curriculum integration, of creating new content curricula to complement the CCSS, or of increasing class time for learning subjects such as history and science. Likewise, my modest exploration of state CCSS websites reveals no announcement of new curricula aimed at greatly expanding the content knowledge of elementary students. In fact, unless the website includes a copy of the full CCSS document, there is often no acknowledgment that reading at CCSS-prescribed levels requires far more content knowledge than has typically been provided!

It is hard to prove a negative. Perhaps a substantial push for new content is revealed elsewhere on the website. Maybe the surveys of states and districts simply did not ask the right questions. Maybe the significance of expanded content and materials to support such instruction is provided in professional development programs. Maybe I looked at unrepresentative state websites. And, of course, in some districts and states, the teaching of content is likely stronger than what has been described in these pages. But it does not appear that putting coherent, content-rich curricula into place is a major priority. Perhaps state curriculum officials missed the message in the standards; or perhaps they do not take the message seriously because it is not in the words of the 300+ standards themselves; or perhaps they think that their students already receive the necessary content.

The Exception: A Fully Integrated, Comprehensive Curriculum

The big exception is New York State, which is offering its early elementary teachers the fully integrated Core Knowledge/ELA program for grades K–2, free, online.[36] This provides teachers with a full year's worth of ELA units for each grade that address the CCSS skills and strategically selected, coherently sequenced history/social studies, science, literature, and arts content. But, even so, New York does not mandate this or any curriculum at the state level. It develops, recommends, and offers model curricula to its districts; yet it is impossible to know how many

schools and teachers will actually make use of it. Still, providing high-quality coherent curriculum materials that are accessible to teachers is a tremendously important step.

New Resources: Excellent Units to Be Found—But Typically One-Offs

Based on their websites, states appear deeply engaged in CCSS implementation, but the focus seems narrowly trained on the CCSS skills, not the broader CCSS call for building students' content foundation. For example, websites may include crosswalks between a state's old ELA standards and the CCSS, recommendations for using text-based questions, and implementation timetables.

In addition, a number of states are investing heavily in friendly, navigable websites that offer a variety of model CCSS lessons and units and/or links to organizations that provide such material, including such prestigious providers as PBS and the National Archives, and Student Achievement Partners, whose is mission is to provide support for Common Core implementation. Many of the lessons and units are beautifully created, providing substantial and interesting content plus strong instructional guidance, as well as CCSS-required skills.

But these models are typically one-offs. The content may (or may not) be compatible with a state's content subject standards but is not offered as part of a coherent sequence. Units are not typically available on each topic, and the length and emphasis of each unit bear no relationship to the importance of the topic in the overall curriculum.[37] Because most states' standards for elementary history and science are not sufficiently detailed and specific, there is little likelihood that the lessons will build on previously learned material or provide a platform for whatever next year's teacher teaches. To use the analogue of the CCSS, these units do not add up to the full set of puzzle pieces; and since the picture underlying the puzzle is not clear, teachers or districts cannot know which pieces to add or when. Further, it's hard to know how much traction these units will get in classrooms. Simply reviewing the unit options on the website is time-consuming.

On the bright side, the abundance of units suggests that the CCSS have unleashed lots of creative energy, from states, to teachers, and even independent organization Educational units from independent providers are not new; but by incorporating the CCSS, these units appear stronger than those offered in the past. Materials provided by Common Core (the independent organization, not the creators of the standards),[38] for instance, offers something between the comprehensive sequence offered by Core Knowledge and the one-off units typically available on state websites. As an example, for each of eighteen time periods in American and world history, Common Core offers one lower-grade and one upper-grade unit that is strongly aligned with the standards. While these units do not constitute a complete history curriculum, they provide teachers with a ready supply of lessons that integrate the CCSS with interesting, important historical content.

Certainly, many of these lessons will provide more content instruction than the ones that they are replacing. And, while good units inserted here and there into a child's learning are better than none, it is a stretch to think that these stand-alone units can add up to what is needed.

So far, sadly, there is little evidence that the coherent content-rich curriculum called for by CCSS is being put in place. Such a curriculum is not embodied in the new purportedly Common Core-aligned textbooks, nor is it (generally) being established by states. Therefore, it seems that the high ambitions of the CCSS are unlikely to be met—unless, of course, there is a major push to alter how content is treated and taught, especially in the elementary grades.

Endnotes

1. E. D. Hirsch, Jr., *The Schools We Need: And Why We Don't Have Them* (New York: Anchor, 1996), 20.

2. Marilyn Jager Adams, "The Challenge of Advanced Texts: The Interdependence of Reading and Learning," in *Reading More, Reading Better: Are American Students Reading Enough of the Right Stuff?*, ed. Elfrieda H. Hiebert (New York: Guilford, 2009).

3. For a short review of key cognitive science findings and their connection to reading comprehension, see Daniel Willingham, "How Knowledge Helps: It Speeds and Strengthens Reading Comprehension, Learning—and Thinking," American Federation of Teachers, 2006, http://www.aft.org/newspubs/periodicals/ae/spring2006/willingham.cfm (originally in *American Educator*, spring 2006); and Adams, "The Challenge of Advanced Texts."

4. National Governors Association Center for Best Practices, Council of Chief State School Officers, *The Common Core State Standards Initiative for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects* (Washington, D.C., 2010).

5. *Common Core State Standards*, 10.

6. National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform* (Washington, D.C.: U.S. Department of Education, 1983).

7. National Center for Education Statistics, *Digest of Education Statistics* (2012), Table 199: Credit Requirements and Exit Exam Requirements for a Standard High School Diploma and the Use of Other High School Completion Credentials, by State, 2011 and 2012; and idem, *Digest of Education Statistics* (1996), Table 152: State Requirements of High School Graduation, in Carnegie Units, 1980 and 1993.

8. Center on Education Policy (CEP), *State High School Exit Exams: Trends in Test Programs, Alternate Pathways, and Pass Rates* (Washington, D.C., 2009), 16; and idem, *State High School Tests: Changes in State Policies and the Impact of the College and Career Readiness Movement* (Washington, D.C., 2011), 4.

9. National Center for Education Statistics, *Digest of Education Statistics* (2011), Table 159: Average Number of Carnegie Units Earned by Public High School Graduates in Various Subject Fields, by Sex and Race/Ethnicity: Selected Years, 1982 through 2009.

10. Iris Weiss, *Report of the 1977 National Survey of Science, Mathematics, and Social Studies Education* (Research Triangle Park, N.C.: Center for Educational Research and Evaluation, 1978), Table 25: Horizon-research.com/2012nssme/wp-content/uploads/2013/02/1977-Report.pdf.

11. Perhaps this inattention to other subjects was not such a great loss, considering the often trivial quality of the little that was offered. Diane Ravitch reported in 1987 in *The American Scholar* on the state of the elementary social studies curriculum: "[T]here exists a national curriculum in the social studies. Regardless of the state or the school district, children in kindergarten and the first three grades study home, family, neighbors, and the local community." Yet this curriculum "is virtually content-free…. It contains no mythology, legends, biographies, hero tales, or great events in the life of this nation or any other. It is tot sociology" —known more popularly in the education world as "expanding horizons." Diane Ravitch, "Tot Sociology," *American Scholar* 56, no. 3 (summer 1987): 343–354.

12. Basal readers are textbooks used to teach reading and have, for many years, served as the spine of the reading curriculum.

13. William Schmidt et al., "Educational Content of Basal Reading Texts: Implications for Comprehension Instruction," Research Series no. 131, Institute for Research on Teaching, Michigan State University (February 1983), 10.

14. Ibid., 16.

15. Thomas B. Fordham Institute, "The State of State Science Standards 2012" (Washington, D.C., 2012), 126.

16. Sheldon M. Stern and Jeremy A. Stern, "The State of State U.S. History Standards 2011" (Washington, D.C.: Fordham Institute, 2011), 68.

17. Kate Walsh, "Basal Readers: The Lost Opportunity to Build the Knowledge That Propels Comprehension," *American Educator* (Spring 2003): 24.

18. Common Core is an independent advocacy group unconnected to (though supportive of) the Common Core State Standards. See also *Learning Less: Public School Teachers Describe a Narrowing Curriculum* (Washington, D.C.: Common Core, 2012). The data used here are from cross-tabulations that are not included in the public report but were provided by Common Core.

19. It is important to note that 53 percent of these elementary teachers believe that, as a result of the extra attention and resources, student learning in one or both of these subjects has "improved." These teachers are not saying that the English/math focus is an unmitigated disaster or a waste of time. Rather, they are saying that there are serious trade-offs. These trade-offs exist at all grades but are most palpable and extreme at the elementary level, where a single teacher is typically responsible for addressing all the subjects—math and English, plus all the rest. "All the rest" simply does not get a lot of attention in American elementary schools.

20. E. D. Hirsch, Jr., "Building Knowledge: The Case for Bringing Content into the Language Arts Block and for a Knowledge-Rich Curriculum Core for all Children," *American Educator* (Spring 2006).

21. *Common Core State Standards,* 33.

22. Ibid., 10.

23. Fordham Institute, "The State of State Science Standards"; and Stern and Stern, "The State of State U.S. History Standards."

24. *Core Knowledge Sequence: Content and Skill Guidelines for Grades K–8* (Charlottesville, Va.: Core Knowledge Foundation, 2013).

25. *Core Knowledge: English Language Arts* (Charlottesville, Va.: Core Knowledge Foundation, 2013).

26. CEP, *An Overview of States' Progress and Challenges: Year 3 of Implementing the Common Core State Standards*, 2.

27. Stephen Sawchuck, "Retooled Textbooks Aim to Capture Common Core," *Education Week* (November 13, 2012).

28. Diane August et al., *Treasures: A Reading/Language Arts Program* (New York: Macmillan/McGraw Hill, 2011); James Baumann, *Journeys: Common Core* (Orlando, Fla.: Houghton Mifflin Harcourt, 2014); and Peter Afflerbach et al., *Reading Street: Common Core* (Upper Saddle River, N.J.: Pearson Education, 2013).

29. Kate Walsh, 2003.

30. If a piece of content appeared first in the second semester textbook, and again in that textbook, that content would not get picked up in this study.

31. Afflerbach et al., *Reading Street.*

32. August et al., *Treasures*.

33. Baumann, *Journeys*.

34. Jennifer McMurrer and Matthew Frizzell, *Year 3 of Implementing the Common Core State Standards: State Education Agencies' Views on Postsecondary Involvement* (Washington, D.C.: CEP, 2013); Diane Stark Rentner, *Year 3 of Implementing the Common Core State Standards: States Prepare for Common Core Assessments* (Washington, D.C.: CEP, 2013); Diane Stark Rentner, *Year 3 of Implementing the Common Core State Standards: An Overview of States' Progress and Challenges* (Washington, D.C.: CEP, 2013); Nancy Kober et al., *Year 3 of Implementing the Common Core State Standards: Professional Development for Teachers and Principals* (Washington, D.C.: CEP, 2013); and Moses Palacios et al., *Implementing the Common Core State Standards: Year Two Progress Report from the Great City Schools* (Washington, D.C.: Council of the Great City Schools, 2013).

35. The Council of the Great City Schools has also surveyed its member districts on CCSS implementation. Based on that survey, it seems unlikely that more than a few districts are substantially revamping their curricula.

36. See http://www.engageny.org/english-language-arts.

37. E.g., in New York State, the Core Knowledge curriculum provided for grades K–2 is complemented by model units for grades 3–5 produced by expeditionary learning; these include content from the state's history and science standards—but not all of it, making it hard for teachers (or students) to assemble the puzzle.

38. Common Core, *The Wheatley Portfolio and The Alexandria Plan.*