

RESEARCH BASE

Amplify CKLA: The research behind the knowledge-based approach to reading comprehension

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It's not enough to be able to just decode the words on a page. See why the knowledge-based approach is improving literacy, and the best ways to implement it in your classroom.

When the Osmond A. Church School in Queens, New York, adopted a knowledge-based approach, only half of the students were meeting state standards. Almost all of the students in this K–8 school qualified for free or reduced price lunches, some were homeless and many were learning English as a second language. Once the knowledgebased curriculum was in full swing, though, the students were outpacing their city peers: In state tests of English Language arts, for instance, 70 percent of the school's eighth-graders and 75 percent of the school's fourth-graders met or exceeded standards, compared with 43 percent and 61 percent, respectively, for all New York City public schools.

Valarie Lewis, who was principal of the school from 2005 to 2014, says, “When the children went into high school, the high schools started calling me and asking me what we had been doing. They were so far ahead. They were very strong writers.” It was all because of the knowledge-based approach, she explains.

What is the knowledge-based approach to reading comprehension?

Knowledge-based learning is a curricular approach that focuses on building students' general knowledge, along with skills, in order to help them become strong readers and writers. The philosophy is based on the idea that strong reading comprehension is deeply connected to whether or not students understand the context of what they're reading—recognizing vocabulary and concepts they're already familiar with. In other words, students need both world knowledge and word knowledge in order to succeed. With its focus on both content and skills, knowledge-based learning also seamlessly aligns with the new, rigorous standards that have been adopted by states across the country.

“Children at young ages are interested in so many complex ideas, and yet a lot of content has been lost in early elementary school in order to focus on the skills of reading,” says Linda Bevilacqua, president of the Core Knowledge Foundation, which is dedicated to promoting this curricular approach. “But research tells us that students need content to become literate. Schools need to help students develop a broad foundation of knowledge by exposing them to specific, key topics. That knowledge will truly prove useful in later grades, so it needs to be built systematically from the early grades.”

A critical part of knowledge-based learning is that students build knowledge by learning about certain topics with increasing depth over multiple grades. For instance, when students are learning about the human body, in kindergarten they would start by learning about the five senses. In first grade, they learn about the parts and systems of the body. In second and third grades, there would be a deeper dive into each system of the body. In this way, knowledge-based learning is a sequenced, coherent and intentional approach to developing the knowledge base that students need.

The origins of knowledge-based learning

The idea of knowledge-based learning is the brainchild of E.D. Hirsch Jr., emeritus professor of education and humanities at the University of Virginia. In the ‘70s, while he was doing research on students at two colleges in Virginia, he observed that background knowledge played a key role in a student’s ability to comprehend a passage. “African-American students at a Richmond community college could read just as well as University of Virginia students when the topic was roommates or car traffic, but they could not read passages about Lee’s surrender to Grant,” he recalls, on the Core Knowledge Foundation’s website. “They had not been taught the various things that they needed to know to understand ordinary texts addressed to a general audience. The results were shocking. What had the schools been doing? I decided to devote myself to helping right the wrong that is being done to such students.”

Hirsch continued his research and founded the Core Knowledge Foundation in 1986. In 1987, he laid out his theory in a book, *The Dictionary of Cultural Literacy: What Every American Needs to Know*, which quickly became a best-seller. Hirsch also published a series of guides for parents outlining what cultural knowledge children should have by each grade, from PreK–6. The foundation began to develop a curriculum and teacher resources for implementing a knowledge-based approach in schools.

“All students need a good, liberal arts, humanistic education,” Hirsch says. “It was clear that looking at reading as simply a technique was not enough. I wanted to make people understand that reading and writing are primarily about knowledge.”

The idea of specifying particular cultural information that students should learn was controversial in the '80s, but since then, research has shown that cultural literacy—as Hirsch defined it in his book—is linked with student achievement, as well as higher incomes and greater civic involvement in adulthood.

“The most desirable goals of education—critical thinking, problem solving, reading comprehension, and general academic achievement—are knowledge dependent,” says Alice Wiggins, executive vice president of the Core Knowledge Foundation. “You can’t think critically about topics that are foreign to you. Problems are solved by applying knowledge.”

Numerous studies of schools that have adopted knowledge-based approaches have shown that the philosophy is linked with higher student scores and a diminished gap between advantaged and disadvantaged students. Knowing and leveraging what has been taught previously, rather than relying on prior experiences, supports all children, not just those fortunate enough to have had knowledge-building experiences outside of school.

Research supporting the knowledge-based approach

In 1990, researchers Georgia Kosmoski, Geneva Gay and Edward L. Vockell tested the relationship between cultural literacy and student achievement in grade schools and found that high scores on a cultural literacy test were positively correlated with high scores on a test of basic skills, regardless of ethnicity. Researcher Joseph F. Pentony later had similar findings when he examined cultural literacy in college students and community college students.

In the late '90s, researchers Thomas G. Sticht, C. Richard Hofstetter, and Carolyn H. Hofstetter found a positive correlation between declarative knowledge, literacy practices and power, as indicated by subjects' occupation, income level and political activity. The correlation was there even when age, education and ethnicity were held constant. In other words, those with strong cultural literacy were achieving the American dream. “Educational practices that downplay the importance of content knowledge in favor of processes of thinking or learning should be reconsidered,” they wrote.

Many studies have found that in nations with rigorous national curricula, such as Finland and Japan, students have higher achievement scores on national and international tests—especially in math and science. In the '90s, researcher Harold Stevenson compared math performance of eleventh-graders in Japan with the U.S., controlling for socioeconomic level and other variables. He found that much larger percentages of U.S. students, who had no national curriculum in their schools, were performing at low levels.

Over the past few decades, cognitive scientists have established a link between broad background knowledge and reading comprehension. “Cognitive science is clear that knowledge helps you both take in and remember new information,” says Alice Wiggins, executive vice president of the Core Knowledge Foundation.

Helping students meet the standards

A knowledge-based approach is suitable for all children, and knowledge-based curricula align well with the new, rigorous standards for college- and career-readiness that many states have adopted, which clearly define exactly what students should learn in each grade. These standards state, “By reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them the background to be better readers in all content areas. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades.”

To meet these standards, many educators have focused on incorporating more nonfiction texts, from topics in history and science, into their curricula. But Wiggins stresses that an intentional and coherent approach is crucial; it's not enough for schools to simply sprinkle nonfiction texts haphazardly here and there. Students need to be taught knowledge systematically, through an organized curriculum in which specific, related knowledge is gradually taught over multiple grades.

Adopting a knowledge-based approach

Schools can adopt a knowledge-based approach by choosing or designing a curriculum that intertwines the processes of building a strong knowledge base and teaching students the foundational skills of reading—i.e., how to decode words. Ideally, the two processes should be linked: Students should be learning to read the words that they encounter in texts, or, in the very early grades, in read-alouds.

The Core Knowledge Sequence is a series of content and skill guidelines from the Core Knowledge Foundation that outlines the progression with which to teach specific knowledge in language arts/English, history, geography, visual arts, music, mathematics and science, for grades K–8. The foundation provides curriculum guides, lesson plans and other resources for educators free on its website.

The Core Knowledge Sequence informed the development of Core Knowledge Language Arts (CKLA), a comprehensive reading and language arts curriculum for pre-kindergarten through fifth grade. There are two instructional strands for the early grades: a Listening and Learning Strand, or Knowledge Strand, to instill background knowledge; and a Skills Strand, to develop the foundational skills of decoding language. The two strands are linked throughout, as students learn to read certain words and simultaneously discover the meaning and context for those words through read-alouds discussions and activities. The two strands integrate into a single strand as students progress through grade levels.

“CKLA is a great way for schools to start implementing a knowledge-based approach,” Lewis says. Recently, a three-year pilot program introduced CKLA in 10 New York City schools and compared students’ progress with that of students in 10 other, demographically matched city schools. Students who went through the CKLA curriculum had significantly higher scores on Terra Nova reading tests than their peers in the control schools.

With CKLA, students learn about key knowledge “domains”: literature, global and American history, and the sciences. Because students learn about these areas in multiple grades, there’s repeated exposure, constant reinforcement and many opportunities for teachers to help if students are struggling.

School success with the knowledge-based approach

Debbie Jenkins, elementary curriculum and instruction supervisor of Bogalusa City Schools in Louisiana, noticed that students in her district were reaching upper grades with the skills to read words but not the knowledge to understand them. “We needed a program that would help students build up knowledge as well as foundational reading skills,” she says.

After implementing CKLA for kindergarten through second grade, the district saw dramatic improvement in achievement. Before CKLA, 88 to 89 percent of Bogalusa’s kindergartners hit the reading benchmark; with the curriculum in place, the number jumped to 95 percent. First-grade percentages improved from the 60s to the 80s. The district is now at work on expanding the curriculum to third through fifth grades. Jenkins calls the difference in student achievement “unbelievable.”

Valarie Lewis also watched her students make substantial gains with the knowledge-based approach while she was principal of Osmond A. Church School in Queens, N.Y. She had been searching for a new curricular approach to implement at the school, and the knowledge-based approach seemed to make the most sense. “We wanted to get back to teaching content, like social studies and science,” Lewis says. “We realized that we were teaching content superficially.” The knowledge-based curriculum helped the teachers dive deeper. Not only did student achievement improve, but also the school became a wonderful community of teachers that were working together to deepen their own content knowledge, Lewis says.

What to look for in a knowledge-based curriculum

When choosing and implementing a knowledge-based curriculum, it's important to keep in mind the key criteria of a knowledge-based approach. Here are some questions to ask as you evaluate curriculum.

1. Is it content-specific?

A knowledge-based curriculum should identify important knowledge that students need to learn over multiple grades, in areas such as history, math, geography, language arts, science and the fine arts.

2. Does it support the coherent building of related knowledge?

A knowledge-based curriculum should allow students to learn about important knowledge areas over multiple grades in a systematic way, progressing from macro to micro or vice versa. For instance, in the case of the human body, students would progress from learning about body parts in the early grades to body systems in the later grades. In astronomy, they would progress from learning about parts (earth, moon, sun) in the early grades to learning about the larger solar system and the universe in later grades. Prerequisite vocabulary and understandings should come before units that rely upon those understandings. For instance, students should learn about plants before farms, before focusing on how Native Americans lived off the land.

3. Does it integrate related content into a cohesive context?

A knowledge-based curriculum should integrate related content into meaningful contexts, such as: teaching scientific processes and concepts within the context of science topics; teaching geography within the context of history topics; following chronology with history to build an understanding of both when and why in relation to what came before.

4. Are students learning both knowledge and skills, and are these two areas intentionally intertwined?

Ideally, in a knowledge-based curriculum, the knowledge that students learn should reinforce the skills they are learning. For instance, in kindergarten, students should be learning to decode the same words that they are hearing read aloud to them in stories. Developing vocabulary through oral learning will make it easier for students to recognize the words as they read them.

How to get started with implementation

Looking to adopt a knowledge-based approach at your school? Here are five simple steps to get the ball rolling, says Bevilacqua, of the Core Knowledge Foundation.

1. Choose a general knowledge topic to be taught in a short unit.

It could be from the state history or science standards, or from “The Core Knowledge Sequence.” The unit should be taught in 10 to 15 days.

2. Meet first vertically with representatives from other grade levels.

Ideally, you would be meeting with other teachers in K–5, but you could start smaller, such as just K–3.

3. Starting with the earliest grade level, identify core content objectives.

Decide what knowledge you want students to learn about this topic in this grade; write objectives in measurable, observable terms.

4. Continue building from objectives in the earliest grade level, expanding and deepening knowledge and expectations at each subsequent grade level

You can also design a knowledge-based curriculum backwards, starting with a knowledge goal for the final grade level and working backwards to identify prerequisites at each previous grade level.

5. Check to make sure your plan meets the four standards of coherence and cohesiveness mentioned in “What to look for in a knowledge-based curriculum” on page 6.

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