The Importance of Knowledge
Wilson works collaboratively with school districts of all sizes across the country to develop and implement achievable, sustainable literacy plans that ensure teacher and student success.

Wilson Language Training and Wilson® Accredited Partners have received accreditation by the International Dyslexia Association.
The Importance of Knowledge

Theme Editors’ Introduction
Barbara Davidson and Natalie Wexler

Comprehension in Disguise: The Role of Knowledge in Children’s Learning
Susan B. Neuman

Why Children Should Be Taught to Read with More Challenging Texts
Timothy Shanahan

The Connections Between Writing, Knowledge Acquisition, and Reading Comprehension
Judith C. Hochman and Natalie Wexler

What a Knowledge-Building Approach Looks Like in the Classroom
Barbara Davidson and David Liben

Book Reviews
Louisa Moats
Nancy Chapel Eberhardt

The International Dyslexia Association (IDA) supports efforts to provide individuals with dyslexia with appropriate instruction and to identify these individuals at an early age.

While IDA is pleased to present a forum for presentations, advertising, and exhibiting to benefit those with dyslexia and related learning disabilities, it is not IDA’s policy to recommend or endorse any specific program, product, speaker, exhibitor, institution, company, or instructional material, noting that there are a number of such which present the critical components of instruction as defined by IDA.
The Role of Knowledge in Structured Literacy

We read to learn, enjoy, and understand. To become a successful and accomplished reader we need a variety of skills, including phonological awareness, phonics, vocabulary, syntax, and morphology. These skills have been discussed in previous issues of Perspectives on Language and Literacy. But even with all these skills, without an understanding of the basic subject matter, it would be difficult to comprehend the text. The articles in this issue provide strategies to help develop the readers’ understanding of the text.

The authors discuss ways of developing knowledge of the world as an aid to reading comprehension. They note that challenging readers with more complicated texts can help develop not just knowledge but also inference and reasoning skills.

The articles in this issue are filled with practical suggestions that bring research into the classroom. They reflect a sometimes misunderstood and overlooked aspect in Structured Literacy: the need to build a young reader’s knowledge base in addition to decoding and other fundamental literacy skills. Knowledge in this context becomes an equalizer and potent motivator for all readers, including those who are disadvantaged or have reading disabilities. We hope practitioners find these strategies useful and rewarding.

Linda S. Siegel, Ph.D.
Editor-in-Chief

“Pathways to Progress” by Mary Silliman.
Knowledge Transforms Educators

Become a Member Today

Join The Reading League at thereadingleague.org

Choose from a variety of membership options, each with a unique opportunity to further your professional learning about evidence-aligned reading instruction.

Find us on:
As readers of Perspectives are undoubtedly aware, providing all children with the skills they need to decode words is crucial. But, as they also surely understand, it is not enough. To be successful in school and in life, students must also be able to comprehend what they read. As complex as the process of decoding is, the web of factors involved in reading comprehension is even more intricate. And it has been misunderstood by most educators for far too long, to the detriment of untold numbers of children.

Clearly, educators are cognizant of the importance of reading comprehension, especially in this age of high-stakes standardized reading tests. But deficiencies in reading comprehension have been seen as a matter of neurobiology—deficits in oral language comprehension, for example, or executive function—or, more commonly, as a lack of generally applicable comprehension skills. Children spend hours every week practicing supposed skills like “finding the main idea,” “making inferences,” and—in recent years, as more nonfiction has been introduced into elementary classrooms—“identifying nonfiction text features.”

The theory has been that what students are reading matters less than whether they’re developing comprehension “skills” they can theoretically apply to any text put in front of them. While they may have a choice of topic, they’re restricted to practicing these “skills” on texts at their individual levels, which are considered easy enough for them to read with little or no assistance and which may be well below their grade level. Beyond that, the assumption has been that students need to “learn to read” before they “read to learn,” with the result that many students get little or no exposure to subjects other than reading and math during the elementary grades—and, if they continue to struggle with reading, often in higher grades as well.

What this well-intentioned approach has overlooked is the vital role of knowledge in comprehension, something that cognitive scientists have been aware of for decades. The International Dyslexia Association (IDA) has long recognized that background knowledge is crucial to reading comprehension, but—within the IDA and elsewhere—the distinction between “activating” knowledge and developing it deserves additional attention. The goal of this issue of Perspectives is to convey that message to practitioners, explain how our current approach to literacy instruction discourages teachers from building knowledge, and describe how we can change educational practice so that all children can develop to their full potential.

As the article by Susan B. Neuman details, research by cognitive psychologists has shown that reading comprehension depends far more on background knowledge of the particular topic at hand than on generally applicable comprehension

Continued on page 8
skills. A now-iconic experiment carried out in 1987 found, for example, that students who did poorly on a standardized reading test but knew a lot about baseball were better able to comprehend a reading passage than “good” readers who knew little about baseball—when the subject was baseball (Recht & Leslie, 1988). That finding, which has been replicated many times, indicates that the most effective way to boost students’ reading comprehension is to expand their base of knowledge and the vocabulary that goes with it.

When schools overlook the need to build knowledge in favor of focusing on comprehension skills, they are in effect privileging children who are already privileged—that is, those who come from well-educated families and are more likely to acquire knowledge at home. The gaps in knowledge between those privileged students and their unluckier peers grow with each passing school year and become harder to narrow. To stave off that snowballing effect, schools need to begin building all students’ knowledge as early as possible, including while children are still learning to decode.

There are a variety of ways to build knowledge, but one crucial method is to read aloud to children from texts that are too complex for them to read themselves. Children’s listening comprehension exceeds their reading comprehension, on average, through middle school (Fisher & Frey, 2014). And by familiarizing young students with sophisticated concepts and vocabulary, teachers will be equipping them with the knowledge they will need to unlock the meaning of texts they encounter at upper grade levels and beyond.

To be sure, children need to engage in their own reading as well. But the standard approach of limiting students to books at their own reading level—as determined by tests that fail to take account of levels of background knowledge that vary with the topic—is not only unnecessary but damaging. As Timothy Shanahan explains in his article, there is no evidence that the widespread practice of leveled reading boosts comprehension. Indeed, studies show that having students read at what is considered their “frustration level” is actually beneficial, as long as they’re provided with support from a teacher or other more able readers. Too often, as reading researcher Alfred Tatum has said, leveled reading leads to leveled lives.

Another overlooked aspect of literacy—and one closely connected with building the knowledge that is vital to students’ success—is writing. The article by Judith C. Hochman and Natalie Wexler lays out the deficiencies in our current approach to writing instruction, not the least of which is that it is generally disconnected from the content of the curriculum. To have students write only about their personal experiences or what they’re provided with support from a teacher or other more able readers. Too often, as reading researcher Alfred Tatum has said, leveled reading leads to leveled lives.

Failed Educational Theories

We hope the articles in this issue will help bridge the longstanding chasm between research into the importance of knowledge to reading comprehension and current practice. While the switch to a knowledge-building approach may not happen overnight, and it may be difficult for individual practitioners or parents to engineer single-handedly, the first step is simply to understand why so many of our efforts to boost reading achievement have failed to yield significant benefits.

Despite the generally bleak landscape in elementary literacy instruction, an increasing number of schools and school districts are now beginning to focus on building knowledge in the elementary grades. In their article, Barbara Davidson and David Liben describe the ways in which schools are implementing various elementary-level content-rich curricula that have been developed in recent years. While there are often challenges in making this transition, given deeply ingrained habits, the results have convinced many teachers that the effort is more than worthwhile. Often, it is the students who have been labeled “struggling readers” who have benefited the most from the new approach.

We close the issue with two book reviews. Louisa Moats reviews Why Knowledge Matters: Rescuing Our Children from Failed Educational Theories by E.D. Hirsch, Jr., who has devoted himself to arguing the case for building knowledge—especially for the most vulnerable students—for over 30 years. And Nancy Eberhardt reviews Inside Information: Developing Powerful Readers and Writers of Informational Text Through Project-Based Instruction by Nell K. Duke, which argues for a method of building knowledge through projects that integrate reading, writing, and other activities.

References


Barbara Davidson, B.A., is an education industry leader with deep, hands-on experience in K–12 education policy and practice. As president of StandardsWork, Inc., she also directs the Knowledge Matters Campaign. A former teacher of students with learning disabilities, she has worked for three different educational publishing companies and served four years in the U.S. Department of Education. Her career has been dedicated to the advancement of high-quality K–8 reading/language arts curriculum.

Charlotte Andrist would have engaged you first with sparkling eyes, a warm smile, and her infectious laugh. As you got to know her, you realized this unassuming woman was incredibly intelligent, a life-long learner, and tenacious about her passions, one of which was making the world better for struggling readers.

An individual with dyslexia herself, although undiagnosed until in a master's program, Charlotte took honors classes in high school, described by her friends as wicked smart and competitive, yet always being real.

Graduating in 1968 from the University of Illinois with a Bachelor of Science degree in Psychology, Charlotte Giovanetti married Harry Andrist and accepted her first professional position as local director of Project Follow Through in the Tupelo, Mississippi Public Schools. Funded by the federal government, this project was charged with determining the most appropriate methods for teaching basic skills to at-risk students.

In 1969, Charlotte joined her husband at the University of Oregon, pursuing graduate study in learning disabilities and earning a Master of Arts in Educational Psychology. Upon graduation, she became a research associate and instructor in the university's Department of Special Education.

From 1971 to 1986, Charlotte and Harry lived in Sheffield, England, Boulder, Colorado, and then Cleveland Heights, Ohio. During this time, she explored new endeavors: throwing pottery, gardening, forming food co-operatives, and caring for their three children.

Charlotte received a graduate fellowship from the National Institute of Child Health and Human Development as she entered a doctoral program in cognitive psychology at Case Western Reserve University. Upon graduation she did cognitive research under a U.S. Air Force Faculty Research Award at Brooks Air Force Base in San Antonio, Texas.

In the fall of 1971 Charlotte accepted a faculty position at Notre Dame College in South Euclid, Ohio, and became a member of the Northern Ohio Branch of IDA. She served on the NOBIDA Board or Advisory Council for 11 years, facilitating joint courses between the college and IDA. At Notre Dame she designed and implemented the graduate reading program. Charlotte taught graduate and undergraduate courses, supervised over 50 master's degree research projects, and founded and directed two reading clinics that provided free tutoring for students elementary through high school while training teachers in Structured Literacy. Always working to

Continued on page 10
remove barriers for students with learning differences, without lowering expectations, Charlotte planted the seeds for what would become the Academic Support Center at Notre Dame, a center that has received national recognition for excellence.

In 2002, the Andrists relocated to Columbus, Ohio. Charlotte became active on the Central Ohio Branch IDA Board, serving as president. She continued to serve IDA on the national Professional Development, Program Review and Exam committees, continuing her work to ensure that all teachers receive a strong foundation in the science of reading. Locally, she continued to do independent educational evaluations and Orton-Gillingham tutoring. She became a Certified Master Trainer with Orton-Gillingham International (OGI) under Ronald Yoshimoto, F/AOGPE and coordinated OGI trainings in Ohio.

Charlotte's adventure into dyslexia legislation began at a round table in Texas at an IDA Conference in 2008 surrounded by a group of women from Ohio. This group, after listening to how Texas developed its dyslexia law, began to discuss how Ohio could do the same. Charlotte took the lead since she was grounded in Columbus, the state capital, and knew the key players. The three Ohio dyslexia branches met together over the years with Charlotte taking the leadership role. She became the chair of this Ohio Dyslexia Legislation Group and chaired the Ohio Teacher Education Task Force in Dyslexia. Her connections with legislators were instrumental in passing the first Ohio dyslexia laws which recognized dyslexia and made it part of the Ohio statutes. The laws led to a dyslexia pilot project with the Ohio Department of Education, and a second law on professional development for teachers through the Educational Service Centers. Charlotte connected with the Chancellor of the Ohio Board of Regents, Jim Petro, leading the movement toward incorporating the dyslexia IDA standards for pre-service teachers in the Institutions of Higher Education in Ohio.

Charlotte Andrist will be remembered for the energy and positivity she brought to every room she entered. An amazing teacher who trained untold numbers of teachers, taught students, and worked to revise national and statewide legislation, she was a mighty force in the field of dyslexia. Although her untimely death signals the end of a very special and wonderful life, it is also a powerful reminder of how service to and advocacy for others represents the highest ideals of a life worth living.
Imagine You Had the Tools to Teach Every Child to Read

Evidence-Based Teacher Training
Digitally-Delivered • Personalized • IDA-Accredited

www.aimpathways.com

Gow is a college preparatory boarding and day school, grades 6-12, for students with dyslexia and related language-based learning disabilities. Gow provides the right environment and the right tools for dyslexic students to rethink the learning process and reinvent themselves.

Rethinking Learning, Reigniting Lives

2491 Emery Rd • South Wales, NY 14139 • P 716.687.2001 • F 716.687.2003 • gow.org
Comprehension in Disguise
The Role of Knowledge in Children’s Learning

by Susan B. Neuman

Although many contentious issues still plague the field of reading, most scholars would agree on this particular topic: Reading comprehension is critically important to the development of children’s reading skills. Comprehension entails the understanding of written text, a process in which information from the text and the knowledge possessed by the reader act together to produce meaning (Anderson, Hiebert, Scott, & Wilkinson, 1985). In this respect, the text is not so much a vessel containing meaning as a source of partial information that enables the reader to use already-possessed knowledge to determine an intended meaning.

In fact, one could argue that there has emerged a rare consensus among researchers on how comprehension works (National Reading Panel Report, 2000). Rather than a set of isolated skills, reading is a complex, active process of constructing meaning. In addition to gaining information from the letters and words in a text, reading involves selecting and using knowledge about people, places, and things, and knowledge about texts and their organization. It is interactive, strategic, and adaptive, involving not just the reader, but the context, the purpose, and the different types of text and how they are used for different kinds of reading (Dole, Duffy, Roehler, & Pearson, 1991). In short, good readers skillfully integrate new information in the text with what they already know to produce meaning.

If this sounds like a rather exotic recipe, you are not alone. Boil it down, and this is what you get: Comprehension is about bringing what you already know to what you may want to learn. And the antecedent for whether you are selective, strategic, and interactive in monitoring your comprehension is a widely acknowledged but often overlooked factor: knowledge.

Not entirely overlooked, however. Starting with the National Commission on Reading’s report, Becoming a Nation of Readers (Anderson et al., 1985), and continuing with the National Reading Panel report (2000) and other National Academy updates (Snow, Burns, & Griffin, 1998; Bransford, Brown, & Cocking, 2000), background knowledge has always been in the mix in concocting this elixir. Students have been encouraged to “activate” their background knowledge when reading a text. But just in case you do not have any knowledge on the topic to activate, there are other remedies as well. The National Reading Panel Report, for example, highlights a host of different techniques including asking yourself questions, strategizing, summarizing, and figuring out the story or text structure.

If you find that these potential remedies fail a basic logic test, you would have company. For in order to be able to ask a reasonable question, it makes sense that you need to have at least some comprehension. Similarly, to summarize a text accurately, you would likely know something about it. And while recognizing the structure of a text might give you some indication of what to look for, it would hardly be sufficient to understand what the section of the particular text might actually mean.

All of this might strike educators as paradoxical and impractical, at least when reading comprehension is regarded as a generic skill. But what if instead comprehension is seen as the development of knowledge networks built and sustained by applying research-based principles?

The Case Against Comprehension as a Generic Skill

Comprehension is the process of constructing meaning from text. So, let’s start with a simple example adapted from the Becoming a Nation of Readers’ consensus report (Anderson et al., 1985):

When Melissa arrived at the restaurant, the woman at the door greeted her, checked her coat and looked for her name. A few minutes later, Melissa was escorted to her table, and shown the daily specials. The attendant was helpful but brusque, almost to the point of being rude. Later, she paid the woman at the door and left.

For those reading this text, it probably brings to mind past associations with restaurants. The woman at the door is the maître d’; the attendant is the waiter or waitress. However, no text is completely self-explanatory. Throughout the reading, you probably made connections and inferences based on the text and the knowledge you already possess. But take a minute more to look at the last two sentences, and here it gets a bit more complicated. Why did Melissa probably pay the maître d’ and not the waiter? One could infer that Melissa was angry with the poor service and chose not to leave a tip.

The paragraph highlights several important points about comprehension. In interpreting text, readers draw on their store of knowledge about the topic. You were able to use your prior knowledge to fill in the gaps in the message and integrate the different pieces of information in the message. As someone probably familiar with restaurants, you were able to infer that Melissa had a reservation, was directed to the table, selected her meal from the daily specials on the menu, and was likely

Abbreviation

SES: Socioeconomic status
frustrated with the service she received. Yet none of this information is expressly mentioned in the text.

These are all inferences that bring together the information presented in the text and the knowledge the reader already has about restaurants. Good readers, according to these consensus reports, are thought to integrate information in the text with what they already know, whereas less mature readers may struggle with its meaning. However, here’s the irony. Although good readers may read the above paragraph with greater fluency than less mature readers, the inferences they make are not likely based on their overall ability to monitor their comprehension or make inferences. Rather, whether good or poor readers, those inferences had to do with their knowledge of what goes on in a restaurant. With more knowledge, a reader could likely make sense of the text and fill in those gaps.

Now let’s try another paragraph, this time from an informational science text. The text reads as follows:

The fastest mammal on land, the cheetah can reach speeds of 60 or perhaps 70 miles an hour over short distances. It usually chases its prey at only about half that speed, however. After a chase, a cheetah needs half an hour to catch its breath before it can eat.

Typical of many exercises, this brief paragraph is followed by a set of comprehension questions. The first, “What is the cheetah?” is right there in the text, and can probably be easily answered by saying, “It’s the fastest mammal on land.” Similarly, the second question, “How fast can the cheetah run?” is another example of a literal question, right there in the text. But the third question attempts to go a bit deeper, asking “Why would the cheetah slow down to catch its prey?” To answer this question, you’d have to go beyond the literal text to make an inference. You would need to know the meaning of the vocabulary word, “prey.” And to make an accurate inference, you’d probably have to know something about mammals, and how they often stalk their victims.

If knowledge is merely a supporting player, then it might only represent the existing schemas readers bring to the text, essentially a static characteristic that one applies while reading. But if we reverse roles, placing knowledge on center stage, we now see knowledge as an alterable characteristic, one that needs to be developed and nurtured.

No educator would likely quibble with the conclusion that background knowledge played a role in comprehending these paragraphs. The problem, however, has been in defining that role. For example, if knowledge is merely a supporting player, then it might only represent the existing schemas readers bring to the text, essentially a static characteristic that one applies while reading. But if we reverse roles, placing knowledge on center stage, we now see knowledge as an alterable characteristic, one that needs to be developed and nurtured.

These distinctions are important because the previous limited role of knowledge in comprehension instruction has placed low-income children at a great disadvantage. This became all too clear in a three-part experiment with children from low-income and middle-income families (Kaefer, Neuman, & Pinkham, 2014). In the first experiment we assessed preschoolers’ background knowledge about birds by creating a task with fictional characters and names. “This is a toma. A toma is a bird. Can a toma live in a nest?” and other items in a similar format. As predicted, low-income (defined by socioeconomic status, or SES) children had significantly more limited background knowledge than their middle-income peers. We then created a storybook that featured the adventures of four types of birds. After the reading, we asked children to make causal inferences about the story, and once again, found the low-SES children scored significantly lower than the middle-income children.

Whether it’s comprehension, vocabulary development, content learning, critical thinking, or problem-solving, one might attribute learning to a single variable: When one has some knowledge, it’s easier to develop more knowledge.

But in our third experiment we neutralized background knowledge by introducing a storybook narrative that would include a novel topic to both groups of children. The storybook used a novel category (i.e., wugs, a pseudoword) and was designed around the adventures of four species of wugs. Here was our reasoning: If children’s preexisting background knowledge underlies these differences in comprehension, then we would expect that there would be no differences in learning among our differing SES groups. And our results confirmed our hypothesis: Low-income and middle-income children scored similarly in word learning, comprehension, and the ability to make inferences. In other words, the differences between groups were not in the skills associated with comprehension (e.g., inferencing) but in the knowledge to make these words comprehensible.

If this were the only study to highlight the starring role of knowledge, in contrast to its supporting role, then more research would be needed. However, its contribution to comprehension, vocabulary, and learning has been well-established among cognitive scientists, linguists, educators, and computer scientists for years (Hambrick, 2003). For example, Dick Anderson and Peter Freebody formulated the knowledge hypothesis (Anderson & Freebody, 1979) to explain how the size of one’s vocabulary was actually a measure of one’s deeper and broader knowledge. Processing certain word meanings (e.g., vocabulary) is only a sign that the individual may possess some
knowledge of a topic. For instance, the child who knows the word *mast* is likely to have some knowledge about sailing. Instructional practices, however, have tended to focus on “word meanings” rather than the knowledge networks they represent. In fact, whether it’s comprehension, vocabulary development, content learning, critical thinking, or problem-solving, one might attribute learning to a single variable: When one has some knowledge, it’s easier to develop more knowledge. Simply put, knowledge is power in cognitive development.

### Developing Knowledge Networks

If we recognize that knowledge is not a static characteristic, but rather one that is highly alterable, then how do we develop it? Children need a fairly extensive knowledge network of vocabulary and concepts to read and successfully comprehend in later grades. But to get started, we begin in the early years to help children organize large amounts of information into meaningful networks with plenty of opportunities for repeated practice and extended learning (Neuman & Wright, 2013).

In our research studies of vocabulary, we use shared book reading time as an opportunity to expand children’s content knowledge in science and mathematics. Topics in science, for example, *wild weather* and *habitats*, tend to intrigue children, and they also provide rich opportunities to build content and conceptual knowledge essential for developing knowledge networks. For example, if children learn that *tornadoes, blizzards, and hurricanes* are all a type of *wild weather*, they begin to understand certain properties of a category: that wild weather can cause damage, and that people need to take safety precautions.

Based on our research, knowing a word’s meaning is not sufficient unless it is tied to a network of concepts that helps children understand their world. Using both narrative nonfiction books and informational text, we work to deepen their knowledge about a particular topic, introducing additional content-related words throughout our sessions. We concentrate on the topic over three weeks, building and adding new words along the way, so that by the end, children have acquired over 100 words connected to a network of concepts.

These knowledge networks act like schemas, a type of organizational prosthetic that can serve to diminish the information-processing load in future learning. As children learn about new words within a topic, they begin to form a mental representation of these concepts, devoting less mental energy to how words relate to one another. For example, if children are introduced to the word *hurricane* as a type of wild weather, they can begin to understand the properties of a category; in this case, that wild weather can be damaging and destructive, and they need to find shelter. In this respect, learning words in categories has inductive potential (Neuman, Newman, & Dwyer, 2011). By diminishing the information-processing load, children are able to access existing knowledge and acquire new information more rapidly (Neuman, 2001).

Understanding the basic concept of wild weather, for example, enables children to quickly make new associations, creating additional and refined schemas (e.g., tropical wild weather) that become increasingly differentiated with more knowledge. In this respect, as Hirsch has powerfully demonstrated (Hirsch, 2006), “knowledge begets knowledge.”

### Five Research-Based Principles to Build Knowledge Networks

Based on what we’ve learned about developing knowledge networks, we propose five instructional principles that thread throughout our work and that of other researchers (Gonzalez et al., 2011) who have focused on knowledge-rich instruction.

**Principle #1: Big Ideas.** We start our planning process with the big ideas we want children to learn. Big ideas are concepts and principles that allow for the most efficient and broadest acquisition of knowledge across a range of examples in a domain (Neuman & Wright, 2013; Pollard-Durodola et al., 2012). For example, big ideas in our topic of “marine mammals” include the fact that they have life cycles, have ways of protecting themselves, and live in habitats based on their needs (see Figure 1). These big ideas serve as cross-cutting themes, linking one topic to another. Insects, pets, and wild animals, for instance, will share these common features, allowing children to understand commonalities across this broad domain (e.g., living things). Big ideas, therefore, serve to emphasize what is important, while concepts focus on smaller units of knowledge. In the case of marine mammals, we focus on concepts like how whales, manatees, and seals all have lungs and breathe oxygen. Words cluster around a concept with similar properties.

Many of our children come to school with significant disparities in their depth and breadth of knowledge. We do them harm when we assume that they have the background experiences to activate knowledge. Rather, to significantly close these gaps, we need to identify the domains of knowledge they will need to possess and teach them deeply.

**Principle #2: Word Knowledge.** Vocabulary is children’s entry to knowledge and the world of ideas. In order to have a good conversation or inquiry lesson in science, for example, children need a threshold of content-specific words in order to talk about their ideas.

---

**Words are learned incrementally and cumulatively after many different exposures. As children encounter a word repeatedly and in multiple contexts, they accumulate more and more knowledge.**

We need to focus intensively on vocabulary in the earliest grades. Words are learned incrementally and cumulatively after many different exposures. As children encounter a word repeatedly and in multiple contexts, they accumulate more and more knowledge. To develop a deeper understanding of words, we
start with child-friendly definitions of words, making sure that children have a common understanding of them, and review them frequently through our shared reading activities.

We select words in categorical sets (e.g., manatee, whale, seal) to help children begin to develop imagery and mental models of concepts (Neuman & Kaefer, 2013; 2018). In this respect, we strongly depart from the notion of “Tier 2” words, often described as words used by mature language users (i.e., sophisticated) across a wide variety of domains. Because of their lack of redundancy in oral language, Tier 2 words (e.g., obvious, verify) can present challenges to young children who primarily meet them in print. Rather, we select words to focus on our big ideas and identify important, depictable words that are thematically related and that can be applied to higher-order concepts. Often described as “Tier 3,” these words are central to building knowledge and conceptual understanding and are integral to content learning in various academic domains. For instance, children learn to classify vocabulary pictures by categories (e.g., this is a living thing; this is not a living thing), and to describe how words relate to one another. For example, seals and otters are both a type of marine mammal. This helps children to understand how words may be hierarchically related to concepts.

Principle #3. The Use of Multiple Genres. Children develop deeper knowledge when they are exposed to a topic through multiple genres (Neuman & Kaefer, 2018). For example, storybook narratives, particularly narrative nonfiction books, are a wonderful source for learning new words and developing an emotional connection between the characters and the topic. On the other hand, informational books often include more dense vocabulary, concepts, and are likely to provide factual information about the social and natural world. When we use both genres (narrative nonfiction, informational) we can provide a more intensive experience for children, allowing them to deeply process lexical sets of content vocabulary and related concepts. That is, the integration of texts in topical units promotes both frequent encounters with words and knowledge across book genres and creates a deeper and more thorough understanding of the topic.

![Figure 1. World of Words Marine Animals](image)

**At a Glance:**

**Big Ideas:**
- MARINE ANIMALS have life cycles.
- MARINE ANIMALS live in certain habitats based on their needs.
- MARINE ANIMALS have ways of protecting themselves.

**In this topic, children will learn that:**
- MARINE ANIMALS are living things.
- MARINE ANIMALS spend their whole lives in or around water.
- MARINE ANIMALS get their food from their water habitat.
- MARINE ANIMALS live in different zones of the ocean, some warm and some cold.
- MARINE ANIMALS either hatch from eggs, are born alive, or duplicate themselves.
- There is a large variety of MARINE ANIMALS; some microscopic and others extremely large.

**MARINE ANIMALS Vocabulary:**
- Types of MARINE ANIMALS: anemone, coral, dolphin, eel, manatee, shark, whale
- Words that help us talk about MARINE ANIMALS: aquarium, blubber, coast, seaweed
- Challenge Words: frog, octopus, polar bear, seashell

The integration of texts in topical units promotes both frequent encounters with words and knowledge across book genres and creates a deeper and more thorough understanding of the topic.

**Principle #4. Distributed Review.** Successful learning also depends on distributed review to reinforce the essential building blocks of information within a content domain. However, simple repetition of information won’t reliably ensure learning. According to research (Simmons, Pollard-Durodola, Gonzalez, Davis, & Simmons, 2008), review requires: i) sufficient amount of time on a topic; ii) that it be distributed over time (e.g., not in one dose); iii) that it be cumulative, with less complex information integrated into more complex tasks, and iv) varied contexts to illustrate its wide application to children’s understanding of information.

*Continued on page 16*
The Role of Knowledge in Children’s Learning continued from page 15

**Principle #5: Intentional Opportunities for Language Engagement.** Opportunities to talk about and more deeply process information are essential for developing knowledge. Children will need to build a strong oral language foundation in conjunction with many opportunities to learn content and connected concepts (Neuman, Pinkham, & Kaefer, 2015). One instructional technique that we have used is to have children make contrasts and comparisons—to describe what is similar or different about the properties of certain concepts. For example, we give children puzzlers like, “Is an artichoke a type of fruit? Why is it or is it not a kind of fruit?” Puzzlers help children think outside the immediate context and consider the reasoning behind the contrasts and comprehension, which can further stretch their understanding of categories and concepts. This type of activity requires more complex thinking and encourages them to problem-solve, helping children manipulate the knowledge that they are acquiring to develop new knowledge.

**Knowledge as a Foundation for Comprehension**

Comprehension is critically important to children’s reading success. Yet despite the numerous consensus reports on the extent research on comprehension, we have ignored the factor that most powerfully predicts it: knowledge. Instead, we have fallen prey to quick fixes, a wish fulfillment that some sort of monitoring, activation, or strategy might repair what has been lacking in background knowledge.

It hasn’t worked. Children’s reading comprehension scores have not substantially improved on any measure, no matter what nationally recognized assessment you may reference (Baldi, Jin, Skemer, Green, & Herget, 2007; National Assessment of Educational Progress (NAEP), 2018). Despite the enormous investments in education and reading remediation, we remain essentially at a standstill in terms of achievement. But perhaps even more tragically, our focus on comprehension strategies, almost as if they were magical potions, has taken time away from the kind of instruction that would benefit economically disadvantaged children. For many of these children, the stresses and realities of poverty have led to more limited access to resources, affecting their initial background knowledge of concepts and vocabulary critical for comprehension and later learning. Furthermore, with limited background knowledge, the newer demands of state standards emphasizing more challenging narrative and informational texts have placed them at even greater disadvantage, only magnifying other risk factors.

These children will need skillfully engineered systematic instruction that is rich in content and that maximizes the valuable resource of time. Without greater efforts to enhance knowledge, differences in children’s background experiences may further exacerbate the differences in children’s comprehension. Consequently, the imperative to foster children’s knowledge as a means for providing a firm foundation for comprehension and learning is greater than ever. Our children deserve no less.

**References**


**Susan B. Neuman, Ed.D.,** is a Professor of Teaching and Learning at New York University. She has served as the U.S. Assistant Secretary for Elementary and Secondary Education and was on the International Reading Association Board of Directors from 2001–2003. She has received two lifetime achievement awards for research in literacy development and is a Fellow of the American Educational Research Association. She has written over 100 articles and authored or edited 11 books.
A major instructional tenet of the past 70 years has been that students will make progress in reading only if they are taught with relatively easy texts—texts at their so-called “instructional levels.” This theory has been embraced by both reading educators and special educators and is widely honored in U.S. classrooms and in remedial interventions. The argument has been that learning will be disrupted if teachers try to teach using texts that elicit too many word-reading errors or that students may not fully understand from the start. However, this nearly universal assumption turns out to be completely unsupported by evidence.

Of course, the idea of placing students in texts in ways that would facilitate their learning to read has always been plagued by technical inadequacies (Klare, 1974–1975; Nilsson, 2013), though these problems evidently have not been enough to dissuade teachers trying to match children to text. For instance, even the most scientifically rigorous readability formulae have difficulty distinguishing text levels, such as determining whether a text is best for second- or third-grade readers. That’s why the most widely used readability schemes estimate grade placements in bands (e.g., grades 2–3, 4–5, 6–8) and why, even with this, there is so much overlap in the grades the texts are assigned to; many texts may be assigned to two or more of these ranges.

Likewise, the measures used to estimate a child’s reading levels have been dubious, as well. There have been controversies over what counts as errors and the ability of teachers to accurately make these judgments on the fly as they listen to children read. Basically, these text and student measures are able to provide no more than rough guestimates, neither being precise nor reliable enough for accurate individual decision making, and neither having been validated for the purpose of matching children to books in a way that would facilitate learning. There have been many articles exploring these measurement problems (Pikulski & Shanahan, 1982; Zamanian & Heydari, 2012). This article, instead, will consider the validity of the “instructional level” construct. That is, if we match texts to students in the ways that have been recommended, is learning actually facilitated?

**Early Responses to Student Struggles with Texts**

Throughout the first half of the 20th Century, retaining students at lower grade levels was seen as the solution to the age-old problem of students unable to read their textbooks adequately. The way to protect against too great a mismatch between student and book was to prevent students from progressing up the grades (and, up the textbook levels) unless their growth in reading justified the advancement. Of course, it would have been possible to simply use texts that were, for example, at a third-grade level in a fifth-grade class. Educators at the time must have been discomfited by this alternative, as there are no contemporary references to that idea as far as I can tell. The result of this practice of retention, according to various teacher memoirs of the time, was that increasingly older and larger students were using texts that were far below their maturity or interests, a situation that, not surprisingly, led to serious disciplinary problems and disaffection.

The result of the practice of retention, according to various teacher memoirs of the time, was that increasingly older and larger students were using texts that were far below their maturity or interests, a situation that led to serious disciplinary problems and disaffection.

During this period, psychologists were exploring the possibility of measuring the readability or comprehensibility of texts. Philosophers had long opined on the idea that texts varied in their depth or complexity, but until the 1920s and ’30s there was no objective or scientific way of teasing out these differences. That began to change with the development of readability formulae that allowed texts to be placed on a continuum of difficulty roughly corresponding to grade levels.

This innovation in the measurement of text difficulty opened the possibility of matching students to text scientifically. By the late 1930s, educators began to speculate that it would be possible to match text difficulties not just to grade levels, but to individual students’ reading levels. The idea that this practice could facilitate learning grew in popularity, though there was not yet any forcefully articulated theory or technology that could bring this notion to fruition.

**Instructional Level Theory**

That changed in 1946 with the publication of Emmett Betts’ *Foundations of Reading Instruction*, which was to become the major reading-education textbook for teachers in that era. Betts not only argued that learning was facilitated by placing students at their reading levels, but he also described it as a research-based approach and provided a set of operational criteria that could be used to match students with appropriate texts. As Betts stated, “Maximum development may be expected when the learner is challenged but not frustrated” (Betts, 1946, p. 448). Over time this idea gained adherents, and after the publication of Irene Fountas and Gay Su Pinnell’s *Guided Reading* in 1996, what is known as “leveled reading” became the dominant approach in U.S. classrooms (Fountas & Pinnell, 1996).

*Continued on page 18*
Betts claimed that readers have three levels of performance, all linked to how closely the demands of a particular text correspond to their skills. The independent level referred to texts that readers would find easy enough to read and learn from on their own, with no teacher assistance needed. Texts at an instructional level would be a bit harder, requiring some teacher guidance if the student was to learn from them. And frustration level texts were those presumed to be too challenging from which to learn even with the support of a good teacher. (Against the background of a period in which Freud was king, avoiding frustration was a high priority for psychic health.)

Betts further asserted that these reading levels could be determined by examining students’ accuracy in recognizing words and their degree of comprehension. He claimed that students learned best from texts in which their oral reading accuracy was in the range of 95 to 98% and their reading comprehension (on a cold read with no teacher assistance) was 75 to 89%. Betts cited as his source for these criteria the dissertation of one of his doctoral students, Patsy Aloysius Killgallon (1942).

How did Killgallon go about this research? One might assume Killgallon matched students with various texts and found that more learning occurred when students were working with texts at their instructional levels. Surprisingly, that was not at all what the study considered. Killgallon’s dissertation, which has remained unpublished except for some brief excerpts (Shanahan, 1983), started from the premise that for students to learn from a text, they had to be able to read it with 75 to 89% comprehension. The source of this premise is unknown; when interviewed years later Betts and Killgallon could no longer remember from whence this criterion had come (Beldin, 1970). The study merely found that children who read with less than 95% accuracy usually failed to accomplish the required 75 to 89% comprehension outcome; which is the source of the widely used standard for accuracy. Killgallon did not explore the impact of different reading “levels” on learning but simply correlated the number of oral reading errors with a target comprehension level, based on results from a small number of fourth graders.

Killgallon did not explore the impact of different reading “levels” on learning but simply correlated the number of oral reading errors with a target comprehension level, based on results from a small number of fourth graders.

Research into Matching Texts to Students’ Reading Levels
Throughout the 1950s, “instructional level” was widely recognized as more theory than proven fact. An early empirical attempt to determine the effects of instructional level placements on children’s learning was carried out by J. Louis Cooper in 1952. This ambitious study pre- and post-tested more than 800 students in grades 2 to 6 from eight different schools, using two reading achievement tests to determine each student’s instructional level. Cooper then monitored the texts that students were actually taught in, hoping to determine which student-book matches resulted in the greatest learning (Cooper, 1952).

Unfortunately, in practice student ability was totally confounded with book placement; that is, teachers placed the best readers (who also had the highest IQ scores) in books at their independent levels and assigned the lowest readers to what were, for them, the most difficult books relative to their abilities. Essentially, Cooper found that the children who made the biggest learning gains were the ones who could, from the start, already read their instructional books perfectly (in other words, there would be nothing to learn in these books). He himself concluded that this was meaningless. Nevertheless, this study illustrates why teachers might conclude that particularly easy book placements would lead to the most learning: The best readers are most likely to be placed in relatively easy texts and to make the best learning progress, too. This relationship is obviously not a causal one, but the pattern may encourage an assumption of causation.

Since that first failed attempt at validation of the instructional level construct, there have been several additional attempts to evaluate whether such text placements facilitate learning. But even replications of the original Killgallon study, which merely linked oral reading performance and text comprehension, have not been particularly reassuring. For example, Powell replicated the Killgallon study and concluded that students could often comprehend text well despite evidencing many more oral reading errors than Betts’ criteria prescribed. That would suggest that Betts’ benchmarks were placing students in books that were too easy. And, correlational studies have not been encouraging either, reporting that frustration-level book placements were more associated with learning than instructional level ones (Powell & Dunkeld, 1971).

The randomized controlled trial is the gold standard for validating the effectiveness of an instructional practice, and in those kinds of studies instructional-level theory has fared poorly, as well. For example, in a study of second graders, children’s instructional levels were identified using Betts’ criteria, with children randomly assigned to one of three treatment groups (Morgan, Wilcox, & Eldredge, 2000). One group worked at their instructional level and two others were placed in texts that were either two or four grade levels above their instructional levels. Student learning was then monitored across the school year to determine if these placements provided any learning advantages. Both frustration-level groups outperformed the students who were taught at their instructional levels. This study has been replicated with third graders as well (Brown, Mohr, Wilcox, & Barrett, 2017). Other experimental studies—conducted with learning disabled students with Individualized Education Programs (O’Connor, Swanson, & Geraghty, 2010), and with second, third and sixth graders (Homan, Hines, &
Kromrey, 1993; Kuhn et al., 2006)—have either concluded that the instructional level offered no advantage or that it actually resulted in lesser amounts of student learning.

Reading is the ability to make sense of text, and that means being able to negotiate any barriers to understanding that texts may include.

Learning from More Challenging Texts

Why such consistently negative results? Reading is the ability to make sense of text, and that means being able to negotiate any barriers to understanding that texts may include. Accordingly, if students are working with texts that they can already read quite well—a description that certainly applies to instructional level texts—there is little opportunity for learning since the students can already negotiate the vocabulary and other features of that text. Students taught from a steady diet of relatively easy texts may make some progress, but not as much as would be possible with more complex texts, since the easier texts would provide fewer opportunities for dealing with sophisticated vocabulary, morphology, complex syntax, subtle cohesive links, complicated structures, and richer and deeper content.

Of course, reading comprehension entails the use of prior knowledge, the knowledge that readers already have prior to reading with a particular text. The more a reader already knows about the information presented in a text, the better the comprehension is likely to be. Instructional level placements, since they emphasize relatively high initial reading comprehension, discourage the use of texts that present much information that students do not already know. This both reduces the opportunity to learn new content and also limits what students can be taught effectively about how best to make sense of texts that present much unfamiliar information.

Still, it would be foolish to conclude that facilitation of learning requires no more than that we place students in more demanding texts. That is a necessary condition, but possibly not a sufficient one. Several of the experimental studies already cited that placed students in markedly harder text for instruction also engaged the students in extensive fluency work—reading the texts multiple times orally with guidance. In other words, though the students may have initially had difficulty reading these instructional texts, by the time they finished, their performance levels with these texts had advanced markedly.

But fluency practice is just one of many scaffolds or supports that teachers can provide to students to help them to gain understanding of complex texts. One frequent barrier to text comprehension is that readers may lack the background information or content knowledge that would allow them to gain full understanding of a text. Authors make assumptions about what their readers will know about a topic or event, but these assumptions do not always match with the actual knowledge that readers may bring to the text. Schools could avoid the possibility of this kind of mismatch by providing students with texts that relate to knowledge they have previously acquired through the curriculum. Sometimes young readers have relevant background knowledge, but they fail to apply it when they read. Scaffolding in such situations entails encouraging students to think about the related knowledge before and during the reading. However, students need to learn to make sense of texts even when they do not have a lot of specific background knowledge, and teachers can introduce them to strategies that can help in those situations, too—for instance, drawing on analogous situations they are familiar with, or seeking additional information from outside the text.

Additionally, scaffolds may help students with unfamiliar vocabulary and support them in making sense of the linguistic or conceptual demands of a text. Strengthening students’ abilities to parse sentences, make accurate cohesive links, and analyze the organizational plan or structure of a text can boost comprehension. Instruction in comprehension strategies such as summarizing, self-questioning, monitoring, or visualizing can help, too, as long as the strategies are attached to understanding the specific content of a text and not pursued as ends in themselves.

Any text feature or characteristic used by an author to communicate information can stymie some readers and, thus, can become the focus of potentially useful instructional scaffolding or support. Of course, the actual supports provided by a teacher in a given instance will depend upon the specifics of the text and whether those features are actually disrupting a student’s comprehension. Table 1 provides a partial list of some of the possible categories of scaffolds and supports that can be provided to readers to allow them to gain a more complete understanding of a text.

<table>
<thead>
<tr>
<th>TABLE 1. Categories of Scaffolds or Supports that Teachers Can Provide to Readers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Decoding/fluency supports</td>
</tr>
<tr>
<td>• Enhancements of prior knowledge</td>
</tr>
<tr>
<td>• Vocabulary supports</td>
</tr>
<tr>
<td>• Syntax guidance</td>
</tr>
<tr>
<td>• Coherence links</td>
</tr>
<tr>
<td>• Genre guidance</td>
</tr>
<tr>
<td>• Text structure/organization supports</td>
</tr>
<tr>
<td>• Author’s tone supports</td>
</tr>
<tr>
<td>• Literary device assistance (e.g., metaphors, symbols, allusions)</td>
</tr>
<tr>
<td>• Text features assistance (e.g., italics, bolding, bullets)</td>
</tr>
<tr>
<td>• Data-presentation device (e.g., tables, charts) assistance</td>
</tr>
<tr>
<td>• Comprehension strategy guidance</td>
</tr>
<tr>
<td>• Motivational encouragement</td>
</tr>
</tbody>
</table>

The Role of Instructional Support

From the research conducted so far, it is impossible to recommend a particular degree of text difficulty with which students should be dealing within instruction. Obviously, the

Continued on page 22
STEP UP FOR DYSLEXIA
... Until Everyone Can Read

IDA is creating a future for every individual who struggles with dyslexia and other reading differences —

because reading changes lives.

Make your year-end donation today.

www.DyslexialDA.org
Delaware Valley Friends School
Building bright futures for students who learn differently

• Lower School
  GRADES 3-5
  Closing the gap in foundational skills at just the right time

• Middle School
  GRADES 6-8
  Rediscovering excitement in learning

• Upper School
  GRADES 9-12
  Preparing for success in college and beyond

DVFS is the only area Quaker school dedicated to educating students with learning differences in elementary through high school.

Learn more at [www.dvfs.org/admissions](http://www.dvfs.org/admissions)  See our video at [www.dvfs.org/video](http://www.dvfs.org/video)

**GRADES 3-12**  610.640.4150  19 E. Central Ave., Paoli, PA  admissions@dvfs.org

www.DyslexiaIDA.org

**REGISTER NOW** for Mayerson Academy’s
**IDA Accredited Plus**

**Orton-Gillingham**
Multisensory Reading Practicum 1
New cohort begins

January 2020

[advertisement]

Turn your struggling students into successful readers and writers
Become Certified as a teacher of Orton-Gillingham

100% ONLINE

mayersonacademy.org/literacy
For more information: info@mayersonacademy.org or 513.263.2210

[advertisement]

ACADEMICS • CHARACTER • COMMUNITY

Mayerson Academy
mayersonacademy.org/literacy
For more information: info@mayersonacademy.org or 513.263.2210

Turn your struggling students into successful readers and writers
Become Certified as a teacher of Orton-Gillingham

100% ONLINE

mayersonacademy.org/literacy
For more information: info@mayersonacademy.org or 513.263.2210

[advertisement]
harder a text is for a student, the more there is to learn, which is a positive thing. But it is also clear that the harder a text is relative to the current reading abilities of the students asked to read it, the greater the instructional support needed for success. The appropriateness of text challenge levels is probably less a matter of “how hard is the book for the student” and more an equation that would consider both this gap between student and text and the degree of support that teachers are willing and able to provide. The harder the book is for the student, the greater the instructional support needed for success.

**The harder a text is for a student, the more there is to learn, which is a positive thing. But it is also clear that the harder a text is relative to the current reading abilities of the students asked to read it, the greater the instructional support needed for success.**

In one study, the successful students *ended up* with what we have traditionally called an instructional level (Ehri, Dreyer, Flugman, & Gross, 2007). That is, students were taught from frustration level books, but by the time they finished working with one, they could read it with 98% accuracy and very high comprehension (these were first-graders so the major challenges were with the decoding). There is not enough research of this kind to mandate such an instructional approach, but I find it provocative. With this approach, both teachers and students could easily see the difference between where the students started with a text and how they ended up, something almost impossible to discern when students are placed in relatively easy materials. As they gain greater knowledge of the content and vocabulary that they are reading about, work through the confusing or complicated linguistic or textual demands, and develop fluency with the particular decoding requirements of the text, students should be able to read that text with high proficiency, at which point it would be time to move on to another text.

Another concern is whether it makes sense to place beginning readers in difficult texts. Various theories suggest that it might be wiser to start beginners out more gradually, lest they become overwhelmed. I suspect the issue is not so much the degree of challenge as what aspect of the text is challenging. Beginning readers struggle mostly with issues of decoding, and the texts used to teach them are often constructed to provide decoding support in a plethora of ways. The options include decodable texts, which ensure that a high percentage of the words can be decoded using the skills mastered to that point; texts with controlled vocabulary, providing children with a severely limited but gradually increasing collection of words; and texts with orthographies and printing techniques that give young readers cues to pronunciation, through pronunciation keys such as those provided in dictionaries or the assignment of different colors to the letters associated with particular letter sounds. For beginners, more challenging text would usually use vocabulary with less repetition and a greater multiplicity of spelling patterns, which may slow these beginners’ development of proficiency.

Accordingly, no state has established text complexity standards for kindergarten or first-grade readers, and no instructional programs, to my knowledge, have ramped up text difficulties at these levels. I think this caution is prudent. Make sure that children have solid foundational skills in decoding—say through a high first-grade or a beginning second-grade level—before increasing the complexity of the texts used to teach reading. Several studies have shown that second grade is not too early for students to deal with more complex text successfully, a level by which those basic decoding skills should be well in hand.

The caution given here for young readers also would make sense for older readers who still decode like kindergartners or first graders. Don’t worry about taking students beyond “instructional level” texts until they are able to decode as well as a successful first-grader. I am sometimes told that this is still too early for learning-disabled readers because it might lead them to guess at rather than decode words in the harder texts. However, one study showed that learning-disabled children in grades 3 through 5 who read at a beginning grade 2 level or lower gain no advantages from being limited to books at their instructional level (O’Connor, Swanson, & Geraghty, 2010). Restricting students to easier materials usually means preventing them from dealing with content at their age- or maturity-levels and may serve to isolate these children from their social peers. These students are also aware that they are being relegated to the “dumb books,” with serious consequences for their self-esteem. And while the theory is that students will gradually make their way up the ladder of text complexity by reading voluminously at their own levels, the fact is that many children who begin at lower levels remain permanently behind. Without access to the more sophisticated concepts and complex vocabulary that their peers are being exposed to, they have no opportunity to acquire the knowledge and skills that could enable them to catch up.

A final concern oft expressed by teachers and parents is that teaching students from supposed frustration-level texts will be harmful to their motivation. Even the designation “frustration level” suggests that the damage might be less to learning and more to engagement. It is certainly possible that students would be discouraged by consistent placements in texts they will struggle to read. However, there are countervailing possibilities as well. For instance, research finds challenge itself to be motivational (Killeen, 1994). Also, studies have failed to link text complexity with lowered motivation or misbehavior (Fulmer & Tulis, 2013; Gambrell, Wilson, & Gantt, 1981), and it is evident that even good readers frequently choose harder texts when reading independently (Donovan, Smolkin, & Lomax,
2000). The motivational field of reading consists not just of the text, but also the explanations, instruction, support, and scaffolding provided by teachers—and most importantly, the provision of the knowledge required to understand the text. These may be sufficient to offset any sense of being overwhelmed that might occur if students were reading on their own.

It is certainly possible that students would be discouraged by consistent placements in texts they will struggle to read. However, there are countervailing possibilities as well. For instance, research finds challenge itself to be motivational.

Balancing Challenges with Supports

Contrary to long-standing assumptions, research has not supported the idea that there is a particular level of text with which students should be taught. Learning to read means learning to overcome the barriers and to exploit the possibilities of written language, and texts that students cannot already read well provide the greatest opportunity for helping them achieve that goal. But while it is reasonable to teach students with challenging texts, it is also essential that they develop proficiency with and derive knowledge from each text they work with. For that to happen, teachers need to provide students with scaffolding and support by—among other things—building the knowledge, vocabulary, and facility with features such as syntax and structure that are required to glean meaning from text.

References


O’Connor, R. E., Swanson, L. H., & 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.


Timothy Shanahan, Ph.D., is Distinguished Professor Emeritus at the University of Illinois at Chicago and Founding Director of the UIC Center for Literacy. A former Director of Reading for the Chicago Public Schools, Shanahan is author/editor of more than 200 publications on literacy education. His research emphasizes the connections between reading and writing, literacy in the disciplines, and improvement of reading achievement. His blog, www.shanahanonliteracy.com, is widely read.

ADVERTISE WITH US!

Reach over 10,000 readers by advertising in Perspectives!

For more information, please contact Denise Douce at ddouce@DyslexialDA.org
Appropriate for teachers in mainstream and remedial settings
Instruction is based on scientifically validated research
Live video streaming available for large groups
Certification offered in Multisensory Structured Language Education (IMSLEC)
Classes offered in Manhattan and Westchester
Online registration available

FOR MORE INFORMATION:
thewindwardschool.org/wtti
or 914-949-6968 ext. 1221
facebook.com/WindwardTeacherTrainingInstitute
twitter.com/WindwardTTI

VISIT US AT THE 2019 IDA CONFERENCE
NOVEMBER 7-10 | OREGON CONVENTION CENTER | PORTLAND, OR
Academy Sponsored Reception:
Friday | November 8th | 5:30 pm - 7:00 pm | Location: TBA
AOGPE Booth 314 | Alliance Booth 407
AOGPE is a member of the ALLIANCE for Accreditation and Certification of Dyslexia Specialists.

SAVE THE DATES
2020 AOGPE CONFERENCE
“The Depth and Breadth of the Orton-Gillingham Approach”
April 3-4 (Friday & Saturday) | Atlanta Marriott Buckhead Hotel | Atlanta, GA
Keynote Speakers: Hugh Catts, Ph.D. and Marilyn Zecher, M.A., CALT
CALL FOR PROPOSALS IS OPEN
Please visit the Academy’s website for more information.
OPEN TO ALL! Academy Members, Educators, Administrators, Parents, Psychologists, Speech Pathologists, Teachers, Individuals with Dyslexia

2020 FELLOW/FIT WORKSHOP
April 5 (Sunday) | 8:30 am -12:30 pm | Atlanta Marriott Buckhead Hotel | Atlanta, GA
About the Academy
The Academy of Orton-Gillingham Practitioners and Educators was established in 1995 to sustain the principles of the Orton-Gillingham Approach set forth by Dr. Samuel Orton and Anna Gillingham by establishing and maintaining professional and ethical standards. It certifies teachers and accredits instructional and training programs that meet these standards. The Academy also promotes public awareness of the needs of individuals with dyslexia and of the Orton-Gillingham Approach for the treatment of dyslexia. It is a nonprofit 501(c)(3) organization.

Learn more about the Academy by visiting our website: www.ortonacademy.org or contact us at info@ortonacademy.org
Monica was diagnosed with dyslexia as a child. After repeating first grade, she received over 100 hours of tutoring. But by fourth grade she had fallen behind again. By the time she arrived in high school, she had low expectations. “I didn’t think I was going to go to college because I was special ed,” she told an interviewer, “and special ed kids don’t go to college” (The Writing Revolution, Inc., 2017; Tyre, 2012). Just three years later, however, Monica had passed her New York Regents exams in English and American history—scoring an impressive 91 on the latter. Eventually, she not only attended college but graduated with a degree in sociology.

What resulted in improvements for Monica—and many other struggling students at her school, whether diagnosed with dyslexia or not—was not a reading program or tutoring. It was explicit classroom instruction in a series of strategies that children will simply pick up the conventions of written language if they read and write enough. But low proficiency rates on national writing tests indicate that for many students, that never happens.

There are, in addition, two fundamental flaws in the writers’ workshop approach as it relates to knowledge. First, it has focused primarily on having students write narratives about their personal experience rather than anything that relates to the content of the curriculum. As with reading, writing in elementary schools has been walled off from the content areas and confined to a largely skills-focused “literacy block.” This artificial disjunction between writing and the rest of the curriculum represents a huge wasted opportunity to build children’s knowledge of the world. It also fails to prepare them for the kind of expository and analytical writing they will be expected to do in high school and beyond.

Second, the assumption has been that students should write at length beginning in the earliest grades. Writers’ workshop advocates often urge children to “flash draft,” writing at a furious pace with little or no advance planning (Calkins, n.d.). When encouraged to produce pages of prose, inexperienced writers can easily become so overwhelmed that they lack the cognitive capacity either to produce coherent writing or to deepen their knowledge.

Why Writing Is Such a Challenging Task

Although there is ample research on the cognitive processes involved in reading, less attention has been focused on writing. Still, it is clear that writing, being expressive rather than receptive, is the more challenging task. That is particularly true when writing is “knowledge-transforming” rather than “knowledge-telling”—that is, when the writer is not merely putting down whatever thoughts occur to her but is engaged in a recursive process of developing and expressing ideas (Bereiter & Scardamalia, 1987; ETS, 2002). Even when asked to produce a sentence, inexperienced writers may be juggling things like letter formation, spelling, word choice, and sentence structure—in addition to organizing and expressing their thoughts on the content they are trying to write about (ETS, 2002).

When students are asked to write at length, they confront additional daunting challenges, such as adhering to a topic, creating smooth transitions, and avoiding repetition, along with ensuring that the overall organization of a piece is coherent.

The Interplay of Writing with Knowledge

To be sure, writing is a skill, or a set of skills, involving everything from spelling and handwriting (or keyboarding) to the organization of ideas. But it is also intimately bound up with content knowledge. You cannot write about what you do not know, and the more you know about a topic the better your writing is likely to be (ETS, 2002). Writing also reveals gaps and misconceptions in the writer’s grasp of a topic, requires critical thinking, and generally deepens and strengthens the knowledge a writer begins with (Graham & Perin, 2007). Unfortunately, most writing instruction in the U.S. overlooks this symbiotic relationship between writing and knowledge.

Traditionally, writing instruction has consisted of having students memorize parts of speech and rules of grammar. Following the rules of grammar is critical to good writing, yet as studies going back a century have determined, simply having students memorize those rules has no positive impact on students’ writing—and sometimes has a negative impact. (Graham & Perin, 2007) Over the past several decades, a different approach has taken hold in U.S. schools, especially at the elementary level. Often referred to as “writers’ workshop,” it avoids focusing on rules of grammar and puts a premium on encouraging children to find their “voice” and write with fluency. The assumption is that children will simply pick up the conventions of written language if they read and write enough. But low proficiency rates on national writing tests indicate that for many students, that never happens.

The assumption is that children will simply pick up the conventions of written language if they read and write enough. But low proficiency rates on national writing tests indicate that for many students, that never happens.
All of these factors impose heavy burdens on executive functions—the cognitive processes that enable us to perform a series of actions—and on working memory, which has a limited capacity both in terms of the number of items it can hold and the length of time those items can be retained (Bereiter & Scardamalia, 1987). Given these demands, it is all too easy for students to lose their train of thought. No wonder many experience stress when asked to write—and stress itself can interfere with concentration and the ability to organize one’s ideas (Luethi, Meier, & Sandi, 2009; Shields, Sazma, & Yonelin, 2016).

These problems are only compounded at upper grade levels, where it’s assumed that students have already acquired basic writing skills. Given the flaws in the writers’ workshop approach at the elementary level, that is not the case for many students—including Monica. In ninth grade, when asked to write an essay about Alexander the Great, she was able to produce only six simple sentences, one of which made no sense (Tyre, 2012). Like most elementary teachers, many high school teachers have received little or no training in teaching the fundamentals of writing (Goldstein, 2017). Even teacher-prep programs for high school English teachers may not cover writing instruction, and those that do seldom focus on basics like constructing sentences. In any event, high school teachers are likely to feel that teaching basic writing skills is not part of their job. They may not assign much writing or simply overlook the myriad errors and deficiencies that confront them. The result is that many students graduate without being able to express themselves clearly in writing. And because of the cognitive demands imposed by writing at length, they have also been deprived of opportunities to acquire the deep knowledge and analytical abilities that writing can foster.

The writing process needs to be broken down into manageable chunks that students then practice, with guidance and prompt feedback from a teacher, to the point where they become lodged in long-term memory.

Many people assume, as writers’ workshop proponents do, that students will absorb the conventions of written language intuitively from their reading. But even students who are proficient readers often write the way they speak—in fragments, with unclear references, and using sentences that are either excessively simple or run on far too long (Graham & Perin, 2007). For many students, including many native English speakers, written English is essentially a second language, with syntax and vocabulary that need to be taught explicitly. As Lisa Delpit has observed, the writers’ workshop approach can “create situations in which students ultimately find themselves held accountable for knowing a set of rules about which no one has ever directly informed them” (Delpit, 2006). Or as Monica told an interviewer, “There are phrases—specifically, for instance, for example—that help you add detail to a paragraph. Who could have known that, unless someone taught them?” (Tyre, 2012).

The key to unlocking writing’s potential to boost knowledge is not just to teach students about rules and conventions. Rather, the writing process needs to be broken down into manageable chunks that students then practice, with guidance and prompt feedback from a teacher, to the point where they become lodged in long-term memory. Just as with reading, the more students can rely on long-term memory, the fewer factors they need to juggle in working memory, and the better they will be able to absorb and analyze new information.

### Begin with the Sentence
The method used to help Monica—and many other struggling students—begins with the sentence. Sentences are the essential building blocks of all writing, and the challenges they pose are frequently underestimated. In the traditional approach, students may simply be taught the abstract definition of a sentence as a “complete thought, containing a subject and a predicate.” Writer’s workshop advocates assume students will just pick up the ability to construct coherent sentences without explicit instruction. Researchers, too, have generally overlooked the sentence. In a meta-analysis of writing interventions, only one of the studies reviewed focused on a sentence-level approach: having students combine two or more short sentences into one longer one, using techniques such as conjunctions and embedded adverbial and adjectival clauses (Graham & Perin, 2007). For example, students could be given these three short sentences:

- Mohenjo-Daro and Harappa were twin cities.
- Mohenjo-Daro and Harappa had urban planning.
- The cities had a system of plumbing.

They might combine them to create a sentence such as:

- Mohenjo-Daro and Harappa were twin cities that had urban planning and a system of plumbing.

The study found that sentence-combining has a positive effect, and we have seen that many other kinds of sentence-level activities also have significant benefits for struggling writers.

For example, students often need to be explicitly taught how to use conjunctions—even simple ones like because and but. They are even less likely to know how to use conjunctions that frequently appear in written but not spoken language, such as although and despite. Teachers can accustom their students to using such constructions by giving them sentence stems like these:

Frederick Douglass advocated voting rights for black men because _________.

...
Frederick Douglass advocated voting rights for black men, but _____________________________.

Although Frederick Douglass advocated voting rights for black men, _____________________________.

In providing phrases to finish these statements, students are learning—in an experiential way—the meanings of these conjunctions. They begin to understand that because provides an explanation (e.g., “Frederick Douglass advocated voting rights for black men because he didn’t think they could be truly free without them”) and that but and although signal contrasting information (e.g., “Although Frederick Douglass advocated voting rights for black men, he was criticized for not advocating women’s suffrage”). After repeatedly engaging in activities at the sentence level, students are able to store the strategies they target in long-term memory. In effect, these activities provide students with what psychologists call “deliberate practice,” repeated efforts to perform aspects of a complex task in a logical sequence, with a more experienced practitioner providing prompt and targeted feedback (Ericsson & Pool, 2016).

Sentence-level activities lodge more than knowledge of writing conventions in long-term memory. When embedded in the content of the curriculum, they also help cement knowledge of that content.

When they engage in their own independent writing, students can draw on their knowledge of these strategies with relatively little effort, freeing up capacity in working memory for comprehension and analysis of content. They are also better able to understand the conventions and syntax of written language when they encounter them in their reading, boosting their ability to add to their knowledge independently. “Before, I could read, sure,” Monica told an interviewer. “But it was like a sea of words. The more writing instruction I got, the more I understood which words were important” (Tyre, 2012).

Gaining Content Knowledge

But sentence-level activities lodge more than knowledge of writing conventions in long-term memory. When embedded in the content of the curriculum, they also help cement knowledge of that content. For example, completing the sentence stems above about Frederick Douglass requires students to recall information they read or heard recently, but not so recently that the response is automatic. As cognitive psychologists have found, that kind of activity—known as “retrieval practice” or “the testing effect”—is a powerful boost to acquiring lasting knowledge (Roediger & Karpicke, 2006). The cognitive benefits of writing about content are also similar to those derived from explaining a topic to another person, or “the protégé effect” (Boser, 2017). When students are still so young or inexperienced as writers that it is challenging for them to engage in sentence-level activities independently, they can derive almost as much benefit from doing them collectively and orally under the guidance of a teacher.

To maximize the chances that students will use the strategies in their independent writing, teachers should incorporate sentence-level activities into instruction at all grade levels and across the curriculum—not just in English class. The knowledge-building benefits of the activities are often greatest in subjects like science and history. For example, a science teacher might provide students with the stem, “Aerobic respiration is similar to anaerobic respiration” and ask them to complete it in three ways, using the conjunctions because, but, and so. Once students have become familiar with various ways to construct sentences—such as beginning with a phrase that tells the reader when something happened—a history or social studies teacher could give students a brief kernel sentence such as “Pyramids were built.” The teacher could then ask students to draw on both their knowledge of the writing strategies they’ve been taught and their knowledge of the subject matter to expand the sentence into something like, “In ancient times, pyramids were built in Egypt to protect the body of the deceased pharaoh.”

Although teachers at upper grade levels may feel that constructing sentences is too low-level an activity for their students, the rigor depends on the content in which the sentences are embedded. At the college level, a philosophy professor could ask students to complete the following stem: “Immanuel Kant believed that space and time are subjective forms of human sensibility, but _____________________________."

These activities also foster students’ ability to think critically and analytically. A math teacher might give students a multi-step equation by a fictional student and the kernel sentence “She made a mistake,” asking them to analyze and explain in writing where the student went wrong. Even a simple conjunction like because requires students to review information to determine a causal relationship among a mass of details. Change-of-direction conjunctions like but and although involve the more challenging task of identifying countervailing factors. These activities lay essential groundwork for the demands of analytical, persuasive, and argumentative writing.

Numerous studies have shown that making an outline tends to lead to better-quality writing—and that children, especially those with learning disabilities, generally engage in little planning before they write.

Preparing for Lengthier Writing

Before students embark on lengthier writing—whether a single paragraph or a multiple-paragraph essay—they need to be taught how to create a specific, linear outline, with key ideas supported by related details. Numerous studies have shown that making an outline tends to lead to better-quality writing—and that children, especially those with learning disabilities, generally engage in little planning before they write. Continued on page 28
write (ETS, 2002). Simply plunging into a piece of writing without advance planning is of dubious value for inexperienced writers even when composing personal narratives. When the practice is applied to the more challenging genres of expository and persuasive or argumentative writing—and to content beyond the writer’s own experience—it imposes a crippling cognitive load.

When students are asked to plan before writing, they’re often encouraged to use nonlinear concept and “bubble map” diagrams (see Figure 1). Although these devices can help with brainstorming ideas, the guidance they provide is so vague that the working memories of inexperienced writers will still be overburdened. A linear outline can specify the order in which students should present their ideas and prevent them from repeating points and wandering off topic (see Figure 2). And as with sentence-level activities, writers who are not yet ready to plan paragraphs and compositions independently can still reap many of the same benefits by creating outlines orally and collectively, with a teacher’s guidance.

Planning is one of the two most crucial phases of writing; the other is revising. Although the cognitive load is lighter during this phase, students will need to rely on their knowledge of sentence-level strategies in order to make their writing smooth and coherent. If they see a need to vary their sentence structure, they can draw on their knowledge of subordinate introductory clauses, such as those beginning with “although,” or of appositive phrases describing a noun, such as “George Washington, the first President of the United States…”). If they need to connect their thoughts or introduce an example, they will have a storehouse of transitional and connective words and phrases at their fingertips.

---

**The Single-Paragraph Outline (SPO)**

1. complete sentence

2. key words & phrases, abbreviations & symbols

3. complete sentence

---

Copyright © 2017 The Writing Revolution. All rights reserved.
An Emphasis on Quality, Not Quantity

The adoption of the Common Core literacy standards in many states has only intensified the cognitive challenges that writing poses. In an effort to prepare students for the demands they will face in high school and beyond, the standards call for less narrative and more expository and persuasive writing, even in lower grades. Unfortunately, however, the Common Core adopts the writers’ workshop ethos of emphasizing quantity, specifying that students should produce a minimum of one typed page per sitting in fourth grade, two pages in fifth, three in sixth, and so on. If students haven’t first learned to compose coherent, complex sentences and to plan before writing, these length expectations will be counterproductive. Teachers will encourage students to engage in tasks that impose such heavy cognitive loads that they will neither learn to write nor acquire the deeper knowledge that writing can lead to.

The challenge is daunting, but there are signs of progress. An increasing number of teachers are being trained in a method of writing instruction—the method Monica was exposed to—that carefully modulates cognitive load. Although the method has not yet been evaluated in a peer-reviewed study, data collected on schools that have implemented it in partnership with the organization that disseminates it show that most have achieved higher-than-average growth on state assessments and increased graduation rates at the high school level. Ideally, children will be introduced to this method in the early elementary grades, so that by the time they reach middle or high school they have become familiar with various sentence-level strategies and know how to plan and revise lengthier writing. If introduced at higher grade levels and implemented across the curriculum, the method is also capable of dramatically increasing students’ writing ability while expanding and deepening their knowledge and fostering their critical thinking skills.

When embedded in the content of the curriculum and begun at the sentence level, explicit writing instruction is potentially the most powerful lever we have for building and deepening knowledge.

When embedded in the content of the curriculum and begun at the sentence level, explicit writing instruction is potentially the most powerful lever we have for building and deepening knowledge. It is one of the few interventions that can compensate for crippling gaps in background knowledge, even for high school students. And when begun at earlier grade levels, it can help prevent gaps in knowledge—and skills—from arising in the first place.

References
Mount St. Joseph University is committed to providing an educational and employment environment free from discrimination or harassment on the basis of race, color, national origin, religion, sex, age, disability, sexual orientation, or other minority or protected status. Visit msj.edu/non-discrimination for the full policy and contact information.

**DYSLEXIA CERTIFICATE**
Meets the requirements for IDA-CERI Structured Literacy/Dyslexia Specialist

**MASTER OF ARTS DEGREE**
Pathway to IDA-CERI Structured Literacy/Dyslexia Interventionist

**FULLY ONLINE READING SCIENCE PROGRAM**
www.msj.edu/reading-science

**Neuhaus Education Center** offers evidence-based professional learning that addresses all components of reading and all phases of tiered intervention.

- Oral Language
- Phonological and Phonemic Awareness
- Comprehension
- Written Composition
- Spelling
- Grammar
- Fluency
- Vocabulary
- Phonics

**School Transformation Services**
To partner with us to create sustainable school improvement that can transform your school or district contact us at 713.664.7676.

**Convenient Classes**
Study at your leisure and earn CEUs with our on-demand online class offerings.

- 17 classes offered online
- Up to 90 days to complete each class
- Over 95 CEUs available to earn!

**What is it like to have dyslexia?**
A lively, thought-provoking group activity, Experience Dyslexia® is a popular simulation kit from the International Dyslexia Association of Northern California. Recently updated, it offers participants insight into the challenges and frustrations faced each day by people with this learning difference.

Experience Dyslexia® is available at norcal.dyslexiaida.org

Teaching Teachers and Empowering Parents

**Mount St. Joseph University**

Mount St. Joseph University is committed to providing an educational and employment environment free from discrimination or harassment on the basis of race, color, national origin, religion, sex, age, disability, sexual orientation, or other minority or protected status. Visit msj.edu/non-discrimination for the full policy and contact information. 09-WO-001349/19/1
If we want to ensure academic success for all children, understanding the importance of knowledge to reading comprehension is a vital prerequisite—but it is only the first step. As a practical matter, educators and parents also need to understand how to build the knowledge students need in the classroom. It is certainly possible for individual practitioners to switch the focus of their questions and class discussion to the content of texts and away from comprehension “skills.” But a far more effective way to ensure that students acquire knowledge is through the schoolwide—or perhaps districtwide—adoption of a content-rich literacy curriculum.

A high-quality, content-rich curriculum can provide teachers with appropriate topics and texts along with suggestions for how to present them, relieving them of the burden of searching for instructional materials and enabling them to focus their limited time on how best to deliver content to their particular students. For students, the advantage of a coherent curriculum is that the topics it covers can build on one another, with one unit providing a foundation of knowledge for others that come later, both throughout a single school year and across grade levels. When related concepts and vocabulary show up in texts, students are more likely to retain information and acquire new knowledge; knowledge sticks best when it has associated knowledge to attach to.

The advantage of a coherent curriculum is that the topics it covers can build on one another, with one unit providing a foundation of knowledge for others that come later, both throughout a single school year and across grade levels.

Changing Emphasis on Curriculum

“Curriculum” is a term with a wide range of definitions and implications. In the earliest days of the movement for accountability in education, its leaders talked about the three-legged stool of standards, curriculum, and assessments. Standards were the what, curriculum the how, and assessments were generally assumed to supply the why. But when early accountability champions stood the stool up in this way, they were referring to a set of state standards that included not only skills-oriented goals in English language arts (ELA) and mathematics, but also content-focused frameworks for science, social studies, and sometimes the arts. In other words, the “what” included both skills and content.

Sadly, as No Child Left Behind (NCLB) put an ever-increasing emphasis on “adequate yearly progress” in ELA and math, with annual tests used as the metric, time spent on social studies and science in elementary school dropped precipitously. In a survey conducted five years after the enactment of NCLB, 44% of districts reported that they had cut time on science, social studies, and other non-tested subjects, while increasing time on the tested subjects of ELA and math by 42% (McMurrey, 2007.) By 2012, schools reported that less than three hours a week was being devoted to science and social studies instruction in kindergarten through third grade, and just three hours and 40 minutes in grades 4 to 6 (Banilower et al., 2013, p. 54). Given that these figures are self-reported, and that time officially scheduled for content-area subjects often ends up being devoted to reading or math, even these numbers may well be overstatements.

And how has this grand experiment in decimating the content of the elementary curriculum succeeded? It hasn’t. Despite the increased time and attention to English language arts, reading scores on the National Assessment of Educational Progress have remained stubbornly flat, with less than 38% of fourth and eighth graders scoring at a proficient level.

The authors of the Common Core State Standards, first promulgated in 2010 and at one time adopted by all but a handful of states, restricted their efforts to ELA and math. And, to avoid political conflict, they framed the ELA standards almost entirely in terms of skills rather than content. Nevertheless, they cautioned against the idea that these standards would suffice to provide students with a high-quality education. Acknowledging the evidence on the importance of background knowledge to literacy, the authors of the standards inserted the following passage in the preamble to the ELA document: “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.”

Continued on page 32

Abbreviations

ARC: American Reading Company
CKLA: Core Knowledge Language Arts
ELA: English language arts
NCLB: No Child Left Behind
Unfortunately, few educators and policymakers have been aware of this language. But in recent years, at least two states—New York and Louisiana—and several new private educational groups have taken this call to heart and designed or promulgated literacy curricula that are intentionally designed to build knowledge of the world. Significantly different from what preceded them, these curricula currently represent about 11% of the elementary ELA textbook market (EdReports, 2019).

We were interested in seeing how the content-rich approach common in elite private schools might work in public school settings more typically associated with test-driven or skills-oriented instruction.

Examples of Content-rich Curricula

In the winter of 2018, we were part of a group touring elementary schools across the country that have adopted some of these new curricula. We visited schools in the Los Angeles suburbs, rural Louisiana, downtown Detroit, and points in between—all serving large numbers of children living in poverty. This was by design. We were interested in seeing how the content-rich approach common in elite private schools might work in public school settings more typically associated with test-driven or skills-oriented instruction. Carried out under the aegis of the Knowledge Matters Campaign, our school tour enabled us to find out what traction the new curricula are gaining and the level of popularity they enjoy.

The first school we visited, Bryant School of Arts & Innovation, was probably the most compelling; it had been using a content-focused curriculum longer than the others, allowing teachers to become more accustomed to a new way of teaching and students to reap more cumulative benefits. Located in a working-class neighborhood in Riverside, California, Bryant at one point ranked 27th out of 29 elementary schools in the district in terms of test scores. Since adopting the Core Knowledge Language Arts (CKLA; see Table 1) curriculum eight years ago, it has moved up to seventh.

Compared to other new content-rich curricula, CKLA may do the best job of building students’ knowledge in a coherent, cumulative way. Despite the wide variety of topics CKLA covers, at Bryant we repeatedly heard teachers and students making connections between the subject at hand and others that had been covered in previous years or would be later on. During a discussion among fifth graders of the “grace and elegance” of Renaissance art, the teacher asked, “Remember last year in the Middle Ages, the art was all dark and serious?” Second graders learning about the role of waterways in the War of 1812 were advised, “You’ll be learning more about the Great Lakes—one of the waterways important in the War of 1812—in third grade.” These exchanges were concrete examples of the ways that a sequential, content-focused curriculum can enable children to acquire new knowledge. When students are jumping from one unrelated topic to another, as is the case in schools that focus on reading comprehension skills, that kind of logical knowledge-building isn’t possible.

Another increasingly popular ELA curriculum we saw was EL Language Arts, formerly called Expeditionary Learning (Table 1). While all the new curricula build knowledge, they have different approaches that may appeal to different

<table>
<thead>
<tr>
<th>Table 1. Comparison of High-Quality Elementary ELA Curricula*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>ARC Core</td>
</tr>
<tr>
<td>Core Knowledge Language Arts</td>
</tr>
<tr>
<td>EL Language Arts (formerly Expeditionary Learning)</td>
</tr>
<tr>
<td>Wit &amp; Wisdom</td>
</tr>
</tbody>
</table>

IRLA = Independent Reading Level Assessment; OER = open education resource

*While not discussed in the article, Bookworms (Open Up Resources), Match Fishtank (Match Education), and Ready Gen (Pearson) should also be investigated as part of any search for a high quality elementary ELA curricula. Bookworms, though brand new, has already shown big increases in reading scores in low-income districts.
convened us something exceptional was happening for both teachers and students.

A third entrant into the array of new knowledge-building ELA curricula is Wit & Wisdom, which includes the study of great works of art—not only for their aesthetic features but also because, like complex written text, art can fuel discourse and add nuance to reading and writing assignments (Table 1). At the Wit & Wisdom school we visited in Dayton, Ohio, a second-grade unit on “civil rights heroes” included not only books about Martin Luther King, Jr., and poems by Langston Hughes, but also the iconic photograph “U.S. Marshals Escorting Ruby Bridges.” Here we also witnessed third graders participating in a “Socratic seminar” on the value of the United States space program, part of a unit on outer space that kicked off with Peter Sis’s award-winning book about Galileo, *Starry Messenger.*

> Although students’ independent reading is often at lower complexity levels at the beginning of a unit, as they acquire knowledge about the core topic they are generally able to read texts on their related topic at complexity levels greater than their diagnosed grade level.

Yet another of the new ELA curricula, American Reading Company’s ARC Core, places a priority on having students read voluminously (Table 1). As with the other programs, ARC Core features a core text. In kindergarten through second grade, all children listen to teachers read aloud texts that are significantly above grade level, while in later grades all students read grade-level core texts themselves. Units are organized around genre and include informational and literary texts that draw on science and social studies topics—for example, bugs in kindergarten, or animal stories in second grade. In addition to reading or listening to the core text with the class as a whole, each student is responsible for picking a related topic for independent reading, choosing from texts at a range of grade levels. When the third-grade core text is about weather and climate, students may choose to read about different types of weather events; fifth graders reading a core text about the Civil War may opt to focus on weaponry and battles. Because ARC works with more than 250 publishers, the company has a library of over 150,000 titles at its disposal, allowing for a wide variety of related texts at a range of complexity levels. Although students’ independent reading is often at lower complexity levels at the beginning of a unit, as they acquire knowledge about the core topic they are generally able to read texts on their related topic at complexity levels greater than their diagnosed grade level.

**Programs’ Common Elements**

All the programs described here have been independently verified to align with the Common Core and other college-and-career-ready literacy standards. More importantly, though, they all expose students to the kind of background knowledge essential if students are to achieve those standards. And in every school we visited, we observed some common elements that convinced us something exceptional was happening for both teachers and students.

First, students had the opportunity to immerse themselves in meaty content for multiple days, even weeks, enabling them to acquire what cognitive psychologists call “domain knowledge.” “ARC focuses on one thing, one topic at a time—where you can really get an idea of what it means, what happens, instead of half of this and half of that,” said one fifth grader in Greensboro, North Carolina. Not only did students clearly find this more enjoyable than jumping around from topic to topic in order to practice some comprehension strategy or skill, teachers told us it was a lot more rewarding for them as well. A first-grade teacher in Kinder, Louisiana, told us she loves the complexity of the texts in Guidebooks, the curriculum created by that state, which allow her to delve into “deep questions with her kids that foster incredibly engaging discussions even among six-year-olds.” The classrooms we visited were lively, and it was more the exception than the rule that we noted students who were disengaged.

Second, the greater time spent on each topic enabled these students to acquire more vocabulary, as recent research has shown (Cervetti, Wright, & Hwang, 2016). For example, second graders studying Early Asian Civilizations as part of CKLA are likely to acquire words related to the topic, like source, conquer, prosperous, and fertile—the last of which they encountered the year before while studying Ancient Mesopotamia. Perhaps more surprising, evidence shows that students who delve deeply into a topic are also more likely to acquire general academic vocabulary such as develop, value, produce, and surface—words that appear in a wide range of text types. In fact, it turns out that the best way to grow knowledge of words is to grow knowledge of the world. Cognitive psychologists refer to this as “indirect” vocabulary instruction. There is still a place for traditional “direct” vocabulary instruction, but most words are in fact learned indirectly.

Third, we saw students falling in love with books and valuing them for the world of adventure, knowledge, and discovery they revealed. In many schools we’ve visited that follow the usual skills-focused curriculum—including some that consider themselves to be doing a great job of implementing the Common Core and similar rigorous standards—we have seen students reading from a host of digitally-delivered articles on a wildly disconnected range of topics. That approach to reading instruction deprives children of the chance to experience the delights that come with immersing themselves in a rich, engaging text—and the rewards that come when they do so.

*Continued on page 34*
“When I was in kindergarten I didn’t like to read because it was so hard and really boring,” a first grader outside of Dayton named Moria told us. “I really like to read now because it’s so fascinating.” Jaden, a fifth-grade student in Greensboro, North Carolina, hadn’t been engaged in school in previous years, his teachers said. But when we visited, he told us, “I like it when we read a book together because you can get others’ opinions. I like being in book arguments.”

In each classroom we visited, all students engaged in the discussion of shared complex texts, allowing those who might not have been able to read all the words access to the same key vocabulary and content knowledge their classmates were getting.

Perhaps most importantly, all children in the schools we visited were able to participate as full-fledged members of the classroom community. We certainly saw the full range of student reading levels one would expect in schools serving high-needs populations, often including children with diagnosed learning disabilities and large numbers of English learners. And students did spend time independently reading text at different levels of complexity. But in stark contrast to our experiences elsewhere, we saw no permanent “underclass” of students in these schools—no kids shuttled off to work in groups at their “just right” level, far below that of most of their classmates. In each classroom we visited, all students engaged in the discussion of shared complex texts, allowing those who might not have been able to read all the words access to the same key vocabulary and content knowledge their classmates were getting.

This approach, which allows students to read a volume of text at their own levels while also participating in the communal analysis of texts at grade level or above, is essentially new pedagogy in our country. And it’s simply not possible without a strong curriculum that provides topics that unfold in a logical sequence, units and lessons that are designed to focus on content, and carefully choreographed instructional “moves” and scaffolds.

Benefits and Challenges

With social and emotional learning a topic of considerable interest to educators today, we can’t help reflecting on the positive cultures we witnessed at the schools along the tour. While some of the curricula used in these schools have, to their credit, intentionally built social and emotional learning into their materials, we’re talking about something more: the profoundly egalitarian sense that because students are learning together as a group, they are authentically committed to each other’s success. This showed up in the respect students showed one another during a Wit & Wisdom Socratic seminar (in which all students participated); the coaching students provided their peers when working collaboratively; the way children spoke about book discussions they had with their friends; and teachers’ observations—at every stop along the tour—that their struggling students “have never been so engaged.”

Without question, the most powerful experience of the school tour was the enthusiasm and confidence we observed in the children with whom we interacted. They were excited about the topics they were learning about, whether that was Greek gods, characters in R. J. Palacio’s Wonder, or the early English explorers who settled Roanoke Island. And their ability to engage in lively discussions about that content gave them—all of them, regardless of reading level—a self-assurance that was exciting to witness.

While the benefits are clear, the transition to this kind of content-rich, structured literacy instruction has not been easy for teachers. “I struggled last year a lot; I called [the coach] and said I can’t do this,” one teacher in Ohio told us. When we asked one of her colleagues, who happened to be a chief driver behind bringing the new curriculum in, how hard that first year was on a scale of 1 to 10, she said, “I was very excited, but I’d still have to say 8 to 9.” She then went on to say it was also “the greatest professional development I’ve had in my career.”

What all the teachers along the tour told us—in one way or another—was that the hardest thing was to let go: to let go of their belief that the children could not tackle the topics, that they would be frustrated by the complexity of the texts, that without explicit strategies instruction they would do poorly on tests. Their best advice to teachers implementing one of the new curricula was “have trust.” “Give it a year and you’ll see the whole picture,” said one teacher who compared getting comfortable with the curriculum to putting together furniture from IKEA. “I thought there were too many of these parts, and that things were missing over there. Then I realized, ‘Oh, they know what they’re doing! It all works.’ I had to see the whole picture.”

Some schools that are using these curricula have already seen statistically significant gains in reading scores. If more schools and districts adopt this approach, and if teachers’ implementation improves over time, it seems likely that this trend will continue.

“If I had read for hours and hours, I could never have select-ed this particular mix of texts,” one eighth-grade teacher said. “I could never go back to what we did before because now I’ve seen how beautifully it can be pulled together.”

The knowledge-building curricula we saw in action are still very new, and it takes time for the results of this kind of
curriculum to show up in the form of improved standardized test scores. Knowledge-building is a gradual, cumulative process. Nevertheless, some schools that are using these curricula have already seen statistically significant gains in reading scores (Walpole, McKenna, Amendum, Pasquarella, & Strong, 2017). If more schools and districts adopt this approach, and if teachers’ implementation improves over time, it seems likely that this trend will continue.

For over half a century, the stubborn gap in test scores and other measures of educational achievement between students from low-income families and their more affluent peers hasn’t budged (Hanushek, Peterson, Talpey, & Woessmann, 2019). During this time elementary literacy instruction also has not substantially changed. What we have seen in the schools we visited is a fundamental transformation that not only has the potential to increase test scores but also can bring more joy, meaning, and equity into classrooms and into students’ lives. It is fitting that providing children with access to knowledge of the world is driving this improvement. Isn’t that, after all, what education is about?

References

Barbara Davidson, B.A., is an education industry leader with deep, hands-on experience in K–12 education policy and practice. As president of StandardsWork, Inc., she also directs the Knowledge Matters Campaign. A former teacher of students with learning disabilities, she has worked for three different educational publishing companies and served four years in the U.S. Department of Education. Her career has been dedicated to the advancement of high-quality K–8 reading/language arts curriculum.

David Liben, M.A. Ed., is a former K–16 teacher (all levels) and national literacy expert who synthesized much of the research guiding development of the Common Core State Standards in English Language Arts. Founder of two innovative school models in New York City, he is a frequent speaker/trainer at educational conferences. He received his B.A. in Economics and Psychology from the University of Wisconsin and Master’s in Educational Administration from Columbia University.
Why Knowledge Matters: Rescuing Our Children from Failed Educational Theories
E. D. Hirsch, Jr.
Harvard Education Press, 2016
270 pages

E. D. Hirsch, the eminent professor emeritus of Education and the Humanities at the University of Virginia, has for four decades argued on behalf of the “knowledge-based curriculum.” A defined set of key concepts, facts, disciplinary principles, and cultural touchstones, he asserts, should be taught in all U.S. schools and learned by all people in our society, not just the academically and socially privileged. Equal opportunity for economically disadvantaged students, who often attend schools with low expectations and impoverished curricula, depends on access to the “shared knowledge of the community”—especially the knowledge we assume well-educated people possess, and which advantaged students are more likely to acquire at home. A substantive, defined, curriculum framework in each content area, especially in the elementary grades, is Hirsch’s antidote to bankrupt ideas that infect U.S. education and aggravate social, economic, and academic inequalities.

Hirsch’s Core Knowledge Foundation has created a set of knowledge-based curriculum guidelines, expressed in the Core Knowledge Sequence, which specifies what all students should know and learn about literature, the arts, science, math, history, social studies, and civics, from preschool through eighth grade. More recently, the foundation developed a literacy curriculum for preschool through fifth grade, Core Knowledge Language Arts, that is infused with the same kind of content.

In its series of eight essays, this book advances the proposals of Hirsch’s previous works, including Cultural Literacy (1987), The Schools We Need and Why We Don’t Have Them (1996), and The Making of Americans (2009), but casts a broader critical eye on “failed educational theories” and their consequences. Targets for Hirsch’s critiques include misplaced beliefs in individualism, naturalism, and a skills-oriented curriculum, all of which, he argues, have undermined U.S. educational excellence, diminished our international standing, promoted inequity, and distanced schools from research-based practices. These bankrupt ideas interfere with schools’ commitment to substantive learning. Common manifestations of Hirsch’s legitimate concerns are classrooms in which it is impossible to tell what students are actually expected to know; generic instruction on “critical thinking skills”; and report cards that name Common Core standards but fail to specify content.

In support of his argument, Hirsch points to the success of many Core Knowledge schools in raising the achievement levels of disadvantaged students. He also contrasts the content-light approach of U.S. schools with the content-rich, detailed national curricula of top-performing nations like Japan and Finland. He presents data showing that France, once at the top of international rankings, experienced a precipitous decline in achievement and equity after it (foolishly) imported the same wrongheaded ideas that undermined U.S. excellence.

Hirsch directly links “failed educational theories” to common classroom teaching practices. For example, if, as many educators believe, individual natural development should determine what is taught and when, it makes no sense to aim the whole class toward a defined content knowledge goal. If learning styles and needs differ substantially, as many educators claim, it becomes acceptable to allow some students not to learn key content. If students can acquire general skills like “making inferences” or “finding the main idea” and then apply them across a variety of texts, topics, and contexts—another common belief—there is no reason to teach any particular body of knowledge. If children’s interests should determine what is read and studied, adults have no responsibility to assert what is valuable to know and why it should be prioritized.

Although the “intellectual monopoly” of such ideas and practices deserves the harsh treatment handed it by Hirsch, there is one area in which this book is much less satisfying and its theses more questionable—the topic of reading comprehension and how students acquire the many language proficiencies necessary for full literacy. In both instances, Hirsch oversimplifies what’s in play for students and teachers and fails to acknowledge the role of explicit, structured, skills-focused language teaching in leveling the academic playing field.

For example, Hirsch writes that “topic familiarity” is the “secret to both comprehension and word learning” (p. 170). To Hirsch, learning to read with comprehension depends primarily on the background knowledge the reader brings to the task. It is true that those who already know more about the topic at hand will process new vocabulary in context with relatively less effort and will assimilate new information into existing knowledge structures more efficiently, but many other academic language skills also contribute substantially to reading comprehension.

Importantly, learning to read, which typically takes the first three to four years of schooling, is a prolonged process for many individuals that depends not only on background knowledge and vocabulary, but on the complex interaction of

Continued on page 38
Inside Information: Developing Powerful Readers and Writers of Informational Text Through Project-Based Instruction

Nell K. Duke
Scholastic Teaching Resources, 2014
Paperback, 208 pages

What instructional approach addresses the requirements of the Common Core State Standards (CCSS), increases the use of informational text, and makes lessons engaging and motivating—while also building knowledge? According to Nell Duke, the answer is project-based instruction. In Inside Information: Developing Powerful Readers and Writers of Informational Text Through Project-Based Instruction, Duke proposes the approach as one solution to her decades-old concern regarding the scarcity of informational text in the primary grades (Duke, 2000). She argues that, in addition to simply increasing the time students spend working with informational text, projects create important opportunities for students to interact with such texts for authentic purposes. Through projects, they read and write to acquire information they want or need to know in order to answer a question, solve a problem, or address a real-world situation. Duke cites research demonstrating that the authentic nature of project-based instruction enhances students’ learning, especially when projects build on their interests. She stresses that “The most important thing is that students see the project as having a real purpose for reading, writing and learning beyond just satisfying a school requirement” (p. 37).

Duke lays out an overall framework—a Project-Based Unit Planning Template—that is designed to help teachers integrate a variety of instructional goals. These include fulfilling specific reading and writing demands in the CCSS; meeting the requirements of other standards in domains such as science, social studies, and the arts; and building on students’ interests and strengths.

Duke identifies five phases of a project and devotes a chapter to each. The launch is the point at which students learn the project’s purpose, product (such as a brochure or a video), and audience. The main goal at this point is to get students excited about what they’re undertaking. For example, a third-grade class might study an actual blog about marine life before creating their own blog about plants and animal life in the vicinity of their school, directed primarily to an audience living nearby.

The chapter explaining the reading and research phase is particularly meaty. In this phase, the focus is on building the knowledge students will need in order to execute the project. Duke stresses that students cannot address the purpose or product of the project without appropriate information. The third-graders who study the blog on marine life might apply the blogger’s fact-gathering approaches to their own environment, learning how to observe plants and animals and each choosing something specific to observe—perhaps moths or maple trees. They might rely on a variety of sources, including interviews with people about their interactions with plants and animals.

The writing and research phase focuses on drafting or creating the product, and, when needed, doing additional research. In this chapter, Duke draws upon evidence showing that different types of text structures require different writing strategies. When writing explanatory text, for example, students may find graphic organizers helpful (p. 123), but when composing persuasive text, they may benefit from an approach known as “TREE,” an acronym for Topic sentence, Reasons, Examine reasons, and Ending. For biographical writing, a timeline is useful.

The revision and editing phase involves making improvements to the product, which often—but not always—includes writing. Duke makes the important distinction between revision, which entails understanding genre-specific features, and editing, when students apply general rules of spelling, capitalization, and punctuation.

The presentation and celebration phase conveys the product to the intended audience and celebrates that accomplishment. Students who create a blog, for example, might be thrilled to get comments on their posts from members of the public, while those in a multicultural classroom might present reports on their countries of origin—or other countries of their choice—to an audience consisting not only of their classmates but also other students in the school and members of the local community. From launch to celebration, Duke explains how students acquire skills in reading and writing informational text while building knowledge for a purpose that holds meaning for them.

Inside Information does not explicitly lead readers through the process of planning and executing a project by providing a concrete example—perhaps because Duke does not want to appear to limit the approach to a single topic or grade level. Although the process might have been clearer with more examples, the book nevertheless serves as a “how to” guide for conducting project-based instruction. In addition to describing how to carry out each phase of project-based instruction, Duke makes effective use of graphics, frequently using call-out boxes, tables, and links to related content. For example, she provides

Continued on page 38
lower-level and higher-level language abilities. Teaching students to read and write is most successful when the lessons explicitly, systematically, and cumulatively shed light on how language is structured. Language structure includes the systems of speech sounds (phonology), the nature of the spelling system (orthography), the meaningful parts of words (morphology), the relationships among word meanings (semantics), the interpretation of complex sentence structure (syntax), and the use of language in social context (pragmatics). Furthermore, navigating around academic text requires some explicit “skills” instruction. If Hirsch were to include “language structure and use” on his list of critical content areas in the curriculum, and fleshed out what students should know about it, this oversight might be resolved. In fairness, the Core Knowledge Language Arts program, which Hirsch helped to develop, does not ignore these aspects of reading instruction as this book does.

Why Knowledge Matters is one of Hirsch’s strongest manifestos on behalf of a knowledge-based curriculum—what it is, how it contrasts with the status quo, and why it is important to embrace if educational equity is valued. To complete this otherwise compelling portrait of what (and how) our schools should be teaching, however, readers will need more knowledge about language, learning to read, and learning to teach reading to students with a range of language proficiencies. Useful supplements to this book include Mark Seidenberg’s (2017) Language at the Speed of Sight, Louise Spear-Swerling’s (2015) The Power of RTI and Reading Profiles, and David A. Kilpatrick’s (2015) Essentials of Assessing, Preventing, and Overcoming Reading Difficulties.

Louisa Moats, Ed.D., has served as a National Board member and Vice President of IDA. In addition to the LETRS professional development series, her books include Speech to Print: Language Essentials for Teachers; Spelling: Development, Disability, and Instruction; Straight Talk About Reading (with Susan Hall); and Basic Facts About Dyslexia & Other Reading Problems (with Karen Dakin).

The opinions of this reviewer are not necessarily the opinions of the International Dyslexia Association.

Structured Literacy Works, But What Is It?

IDA has released Structured Literacy: An Introductory Guide. This practitioner-friendly publication will help educators and others better understand the definition, characteristics, and purpose of the term and its affiliated principles and practices. https://dyslexiaida.org/structured-literacy-works-but-what-is-it/
Universal Dyslexia Screening Is within Reach

Amira Learning™, powered by artificial intelligence (AI), combines an accurate and reliable oral reading fluency assessment, a universal screener for dyslexia, and practice into one digital solution.

- Can assess multiple students simultaneously in less than five minutes
- Produces highly reliable and accurate results
- Developed from 20+ years of research from leading universities
- Generates actionable reports so intervention can happen quickly

Request a live demo at hmhco.com/amira.
CELEBRATING
70 YEARS OF IDA

GET YOURS NOW
SHOPIDA.ORG
Support 70 years of IDA with your purchase!
Use code "PER10" and get 10% when you spend $50.