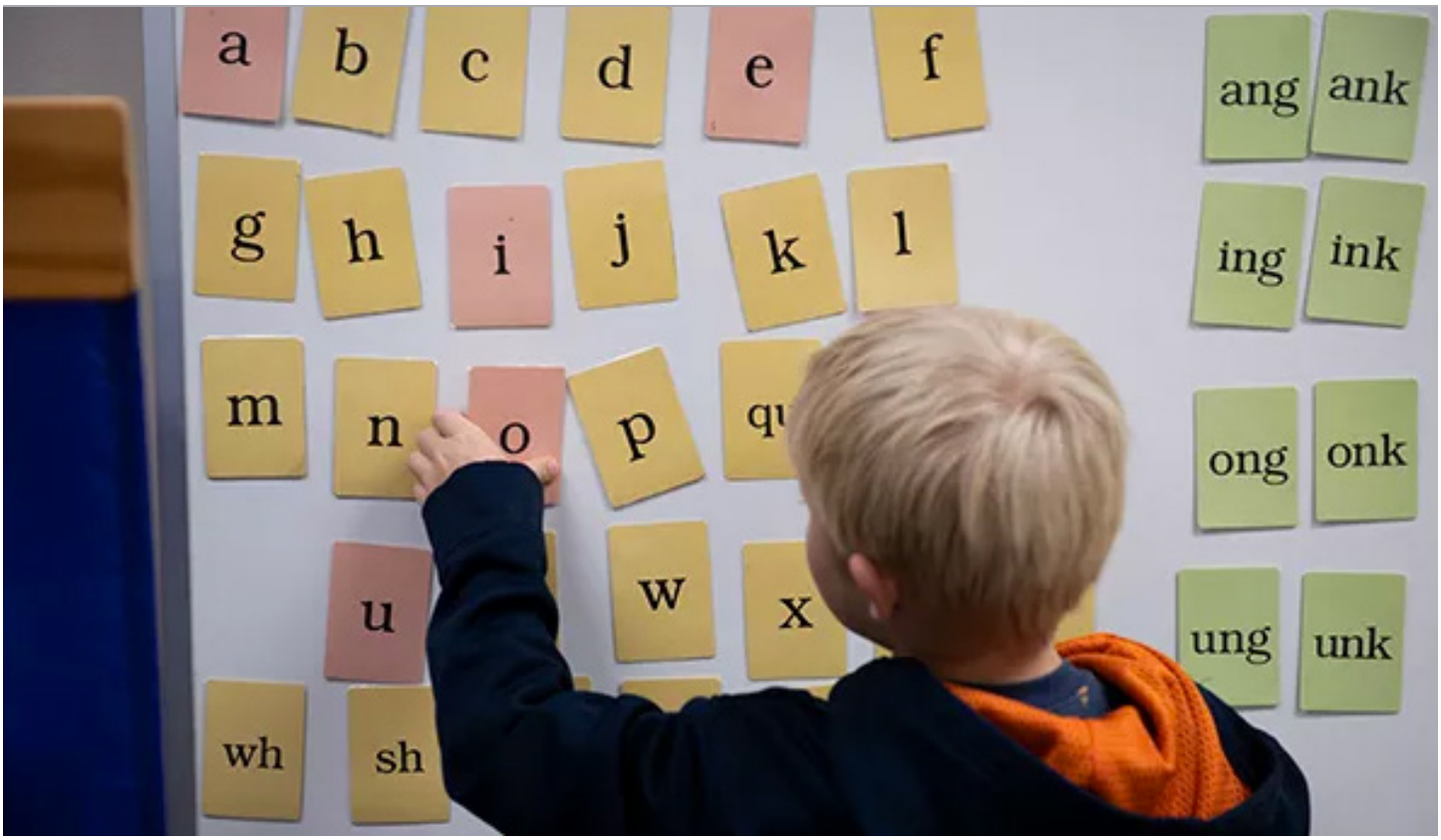
EDUCATION WEEK
2020

SPOTLIGHT



— Graeme Sloan/Education Week

Braydan Finnerty, 2nd grade, chooses letter magnets off the board while doing a spelling exercise in front of the rest of the class at Beverly Gardens Elementary in Dayton, Ohio.

SCIENCE OF READING

EDITOR'S NOTE

Educators are continuously exploring the most effective ways to teach reading instruction. In this Spotlight, learn about methods teachers are using to teach reading, what science says about early readers, and how classrooms are overhauling reading instruction.

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Commentary

Published on December 3, 2019, in Education Week's Special Report: Getting Reading Right

A Look Inside One Classroom's Reading Overhaul

Wary teachers say they're now seeing gains with structured programs

By Catherine Gewertz

DAYTON, OHIO

Kim Kohlrus' 2nd grade classroom is alive with wiggling, chanting children. They're on their feet, swaying and twisting as their teacher leads them in a call-and-response of letter combinations.

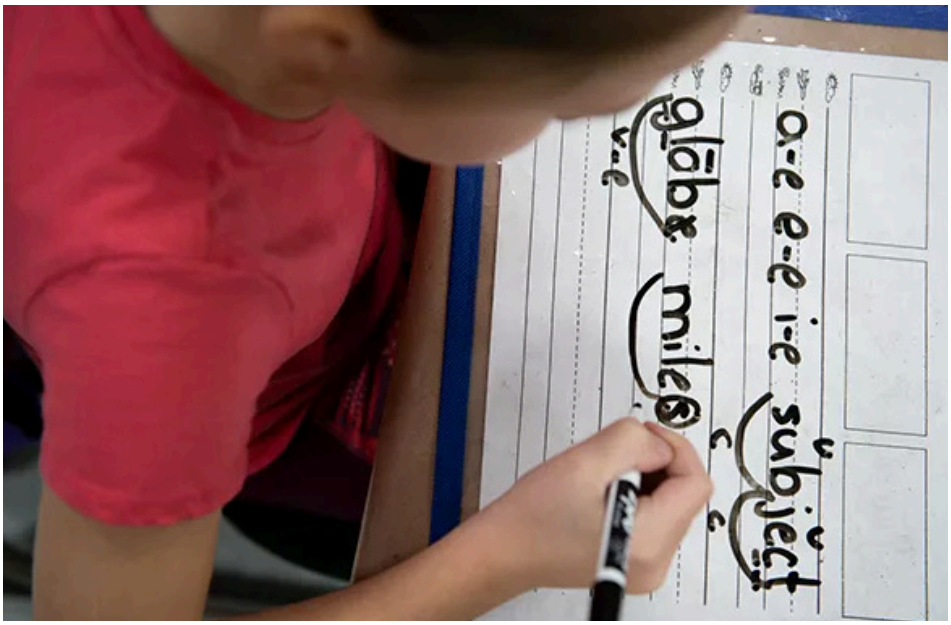
"I-n-k, pink, ink," they chime in a bouncy rhythm, "o-n-g, song, ong." It's a phonics warmup, to help them remember vowel-consonant groupings. Then they dive into a lesson on multisyllabic words, tackling the new challenge in various ways.

Kohlrus writes words like "kindness" and "fantastic" on the board, and the children tell her where to draw curved lines underneath to divide them, using the rules they've learned about open and closed syllables. In their notebooks, they make sentences with those words and draw more curved lines to divide the sentences into phrases. For "trick words" that are hard to sound out, like "often," the children trace the letters on their classmates' backs while saying the letters and words out loud.

These scenes play out in a typical American classroom, trimmed in cheerful shades of green and purple. But what's happening here at Beverly Gardens Elementary reflects something less than typical: Kohlrus' district, the Mad River Local Schools, has purposefully reshaped its early literacy instruction to reflect the science of reading.

With a clear research base to back them up, Mad River's leaders have paired carefully structured phonics lessons in K-2 with related practices that are known to support good reading skills: helping students build content knowledge and strong vocabularies.

As the project enters its fourth year, Mad River's leaders are hopeful. State test scores in English/language arts have risen sharply in the buildings where children have had the most exposure to the new approach, and principals notice that more students—even the struggling ones—are better at tackling tough reading passages.



—Graeme Sloan/Education Week

Kara, 2nd grade, identifies syllables and letter sounds while doing a letter exercise.

"The difference between now and five years ago, I wouldn't have believed it," said Cory Miller, the principal of Virginia Stevenson Elementary, which dove into phonics in 2013-14, four years before Mad River adopted its new phonics curriculum, Fundations.

"[Students'] fluency is much better, and they're attacking words in systematic ways," he said. "They're not getting stuck on words."

Teachers and administrators in this Ohio district, which serves a working-class population near Wright-Patterson Air Force base, long knew something was missing from their literacy instruction. Most years, barely half of its 3rd graders scored proficient on state reading tests.

There was no districtwide curriculum; each teacher in its four elementary schools "did their own thing," drawing on old Scott-Foresman textbooks or cobbling together their own materials, said Amy Holbrook, one of Mad River's instructional coaches.

Ohio's adoption of the Common Core State Standards in 2010 made it painfully clear: Mad River's teachers did not have the materials they needed to meet these new standards. They tried different things without much satisfaction, Holbrook said.

A Coordinated Approach

During those years, though, the instructional coaches kept poking around. They saw the pileup of studies on the importance of systematic phonics instruction. They took an online course in foundational skills created by Student Achievement Partners, a nonprofit created by the common core's main writers, and later taught a version of it to all their K-2 teachers. It was becoming apparent to the coaches that the district needed a coordinated approach to reading, and teachers were increasingly asking for one, Holbrook said.

They found two curricula that covered the foundational skills that research calls for, and tried them out. In 2016-17 they used Wit & Wisdom, designed by Great Minds to build content knowledge, comprehension, and vocabulary, schoolwide in one elementary building, and in scattered grades and classrooms in other buildings. The following year, the district expanded Wit & Wisdom to all K-8 classrooms and added Fundations, a program

that includes phonics by Wilson Language Training, in all K-2 classrooms. (Fundations met most, but not all, of the requirements for a good-quality phonics program in a recent review by the curriculum reviewer EdReports.)

A couple of fall mornings in Kohlrus' classroom offered a glimpse of what the combination looks like. After reading aloud to her 17 students from a picture book, she gave them free-reading time, letting them choose books from the themed baskets in her classroom library ("family," "biographies," "animal babies").

While the children read, Kohlrus worked on reading fluency with three boys at a small table. They read aloud from a Wit & Wisdom handout in the curriculum's current module, which is organized around the theme of change. "In the fall, many things are changing," Channing Wray read aloud. As he read, Kohlrus helped him sound out tricky words.

As a whole group, the class then focused again on phonics. At their desks, the children divided words into syllables, or sentences into phrases, and said them aloud together. They stood up to chant letter sounds or move around the room in an exercise about prefixes and suffixes. Each child had a word written on a strip of paper ("connect") and had to find a companion whose paper showed a prefix or suffix that changes its meaning ("dis-").

Moving into the comprehension piece of the lesson, Kohlrus used themed sets of books to explore ideas and language. In a book about why fall leaves change color, the children learned about chlorophyll and pigments, and they discussed vocabulary words, using their bodies to act out words like "curl" and "uncurl." They explored the text structure, too, identifying topic sentences, bits of evidence, and conclusions.

Kohlrus is a convert to the new literacy approach, but she hated it at first. She was teaching kindergarten then, and thought the new curricula expected too much too soon from 5-year-olds. She also didn't like the carefully scripted nature of Fundations. "I like to add my own flair, and it felt limiting to me," she said.

Like many teachers, Kohlrus didn't hear much about phonics in her teacher-prep program nearly 20 years ago, or in her master's program in literacy. Those courses were infused with the ideas that shaped the "whole language" approach to literacy that's now out of favor but many critics say persists in U.S. classrooms under the guise of balanced literacy.

Kohlrus used those ideas—including the "cueing systems" that encourage children to use pictures and other clues to guess what words say—to shape her reading instruction over 17 years of teaching kindergarten and 1st grade. Here and there, she wove in bits of phonics instruction she felt were appropriate for 5- and 6-year-olds.

Being asked to embrace a structured, systematic phonics program "meant unlearning everything I'd learned," Kohlrus said. Instructional coaches provided training, but even still, the challenges of the phonics shift, combined with learning two new, demanding curricula "made us all want to get in the fetal position and cry," she said.

As she began teaching 2nd grade last year, Kohlrus felt her mind shifting, she said. She began to see the sense in the new approach.

"I have finally bought into it," she said. "I can see the skills the children are bringing into 2nd grade. It's making a difference. Now these kids have solid phonics skills. They can go past sounding out letters to sounding out multisyllabic words like nobody's business."

Kohlrus doesn't spend much time lamenting the way she taught reading in the past, but sometimes it bothers her. "I used what I had," she said. "And that was all I had."

Changing a System

Many teachers resist abandoning what they learned about teaching reading, since they trusted their preparation programs to provide the best advice, Mad River's coaches said. Ann Pearce, who travels nationwide to train teachers in Fundations, sees this all the time.

"You run into, 'We didn't learn this, so is this the right thing to do?' They didn't learn systematic phonics, and then to be expected to teach this way, it's hard," Pearce said. "I tell teachers, I got my master's in reading, and I never learned any of this. But when I did learn, it was an eye-opener."

One of the toughest pieces of the transition to a phonics-based literacy approach is that teachers often wrestle with beliefs about themselves, said Mad River instructional coach Rebecca Parker. She was teaching 3rd grade when the district started its new literacy approach, and she thought it was too hard for her students. That resistance sparked a difficult internal journey.

"I started to ask myself, do I believe that 'kids can'? I finally realized it was about me, that what I really wondered about was if I could help them, if I was good enough," she said. "But now there's evidence in front of me. The kids showed me they could do it.

"Teaching is very personal and emotional. This [change] pushes you to reflect on yourself. It was scary, and it brought me to my knees. But I learned to focus on the students, and not on myself."

Struggling to Maintain Focus

A big challenge in moving to a comprehensive literacy approach, Holbrook says, has been watching the district's attention to it ebb and flow.

Dubbed a "focus district" by the state, Mad River redeployed its instructional coaches from the literacy project to broader duties; only one now is devoted to that project, instead of three. The district has ongoing struggles with absenteeism, had to grapple with a technology crisis, and has had to siphon attention to training staff to handle trauma from opioid use in its students' families.

Krista Wagner, the assistant superintendent who oversees curriculum and instruction, as well as student services, said she "feels horrible" about the uneven focus on the literacy initiative.

"We're right there where things are starting to take a turn," she said. "I know it feels as if sometimes more attention is on it and sometimes less is on it. But we're fully committed to it."

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There are signs that the literacy work is paying off: Scores on state tests in English/language arts have risen districtwide since the two new curricula arrived, particularly in two schools using the approach the longest. In the elementary school that has had both curricula the longest, 3rd grade test scores went from the worst in the district—44 percent proficient in 2016—to the best, 71 percent in 2019. Third grade reading proficiency districtwide moved from 53 percent in 2016 to 64 percent in 2019.

But it's hard to know what really drove those improvements. Was it the phonics program or the knowledge-building curriculum that made the difference? Or did other dynamics produce the score improvements? Wagner and the instructional coaches can't tell. The district switched interim-assessment providers, making it hard to track the impact of the new curricula. Fundations and Wit & Wisdom also include interim tests, but teachers are still learning to use them in uniform ways, so consistent data across school buildings aren't available yet, Holbrook said.

Even without those data, though, Mad River's leaders feel they're onto something important. And as they move forward, they're keenly aware of the stakes riding on their work.

—Graeme Sloan/Education Week

Lylian Burdick and Jonathan Bland, 2nd graders in Kim Kohlrus' class at Beverly Gardens Elementary School in Dayton, Ohio, practice reading out loud early in the day's lesson.

"If kids aren't hitting 3rd or 4th grade using all these foundational skills to access complex text, we'll have kids guessing. We'll have huge gaps," Holbrook said. "And we won't be overcoming that in high school." ■

Published on October 2, 2019, in Education Week

How Do Kids Learn to Read? What the Science Says

By Sarah Schwartz and Sarah D. Sparks

How do children learn to read?

For almost a century, researchers have argued over the question. Most of the disagreement has centered on the very beginning stages of the reading process, when young children are first starting to figure out how to decipher words on a page.

One theory is that reading is a natural process, like learning to speak. If teachers and parents surround children with good books, this theory goes, kids will pick up reading on their own. Another idea suggests that reading is a series of strategic guesses based on context, and that kids should be taught these guessing strategies.

But research has shown that reading is not a natural process, and it's not a guessing game. Written language is a code. Certain combinations of letters predictably represent certain sounds. And for the last few decades, the research has been clear: Teaching young kids how to crack the code—teaching systematic phonics—is the most reliable way to make sure that they learn how to read words.

Of course, there is more to reading than seeing a word on a page and pronouncing it out loud. As such, there is more to teaching reading than just teaching phonics. Reading requires children to make meaning out of print. They need to know the different sounds in spoken language and be able to connect those sounds to written letters in order to decipher words. They need deep background and vocabulary knowledge so that they understand the words they read. Eventually, they need to be able to recognize most words automatically and read connected text fluently, attending to grammar, punctuation, and sentence structure.

But knowing how to decode is an essential step in becoming a reader. If children can't decipher the precise words

on the page, they'll never become fluent readers or understand the passages they're reading.

That's why we've put together this overview of the research on early reading, in grades K-2. It covers what's known about how we should teach letter-sound patterns, and what we don't know for sure yet. It touches on what else should be part of early reading programs. And it explains why we know that most children can't learn to read through osmosis or guessing.

Here's what the evidence shows.

Don't children learn to read the way they learn to speak?

Infants learn to speak by listening to and repeating sounds made by adults and connecting them to meanings. They don't consciously distinguish individual sound units (called phonemes) when hearing spoken language. Some research suggests infants learn probabilistically—for example, hearing the sound "ball" at the same time as the sight of a round, bouncy object over time makes the child associate the two—while other studies suggest children map meaning to a word after experiencing it just once or twice. Within the first two years, typically developing toddlers' brains focus on the most common sounds in their native languages and connect those sounds to meaning. A child develops understanding of speech through exposure to language and opportunities to practice the "serve and return" patterns of conversation, even without explicit instruction.

By contrast, children do not naturally develop reading skill through exposure to text. The way they learn to connect oral and written language depends on what kind of language they are learning to read.

Alphabetic languages, like English or French, use letters to stand for sounds that make up spoken words. To read an alphabetic language, children must learn how written letters represent spoken sounds, recognize patterns of letter sounds as words, and match those to spoken words whose meanings they know. This differs from Chinese, for example. It uses a tonal spoken language, conveying meaning with small differences in stress or pitch. Its writing system is partially logographic—in which written symbols correspond directly to a word or concept—and also includes words that couple symbols for meaning and symbols for sound. Someone reading Chinese hanzi characters could not "sound out" unfamiliar words character by character.

What is systematic, explicit phonics instruction, and why is it important?

Connecting printed letters on a page to written sounds isn't intuitive. While some young children may make those connections themselves, most do not. One set of studies from 1989-90 illustrates this phenomenon well.

In these studies, conducted by Brian Byrne and Ruth Fielding-Barnsley, researchers taught young children between ages 3 and 5 to read whole words aloud, like "fat" and "bat." These children didn't already know their letter names.

Then, the researchers tested whether the children could transfer their knowledge to reading a new word. They gave them the word "fun," and asked whether the word was "fun" or "bun." Very few of the students could do this successfully. They couldn't break down the original word into phonemes and then transfer their knowledge of those phonemes to a new word.

But children could succeed on this task if they were first given some explicit instructions. When children were taught how to recognize that certain letters represented certain sounds, and taught how to segment words to identify those individual letters and sounds, they had much greater success on the original transfer test. Neuroscience research has since confirmed and helped explain these findings. When learning how to read new words in an unfamiliar made-up language, participants had more long-term success if they were first taught which symbols correspond to which sounds, than if they tried to remember words as wholes. Brain imaging of these readers finds that the two teaching strategies tap into different neural pathways in the brain. Readers taught to connect print to meaning directly could recall words initially more quickly, but less accurately; readers taught to connect print to sound and then to meaning read aloud more quickly and correctly, better recalled the correct meanings of words, and transferred their knowledge to new words.

Decades of research has shown that explicit phonics instruction benefits early readers, but particularly those who struggle to read.

That's because small strengths or deficits at the start of reading compound over time. It's what reading expert Keith

Stanovich in 1986 dubbed the "Matthew Effect in Reading," after the Bible verse in which the rich get richer and the poor get poorer: "The combination of deficient decoding skills, lack of practice, and difficult materials results in unrewarding early reading experiences that lead to less involvement in reading-related activities," Stanovich wrote. "Lack of exposure and practice on the part of the less-skilled reader delays the development of automaticity and speed at the word recognition level. Slow, capacity-draining word-recognition processes require cognitive resources that should be allocated to comprehension. Thus, reading for meaning is hindered; unrewarding reading experiences multiply; and practice is avoided or merely tolerated without real cognitive involvement."

My reading curriculum includes letter-sound instruction. Am I providing enough phonics?

Not all phonics instruction is created equal.

The most effective phonics programs are those that are systematic. The National Reading Panel found this in 2000, and since then, further research reviews have confirmed that this type of instruction leads to the greatest gains in reading accuracy for young students.

A systematic phonics program teaches an ordered progression of letter-sound correspondences. Teachers don't only address the letter-sound connections that students stumble over. Instead, they address all of the combinations methodically, in a sequence, moving on to the next once students demonstrate mastery. Teachers explicitly tell students what sounds correspond to what letter patterns, rather than asking students to figure it out on their own or make guesses.

In one series of experiments, Stanford University neuroscientist Bruce McCandliss and his colleagues made up a new written language and taught three-letter

words to students either by asking them to focus on letter sounds or on whole words. Later, the students took a reading test of both the words they were taught and new words in the made-up language, while an electroencephalograph monitored their brain activity. Those who had focused on letter sounds had more neural activity on the left side of the brain, which includes visual and language regions and is associated with more skilled reading. Those who had been taught to focus on whole words had more activity on the right side of the brain, which has been characteristically associated with adults and children who struggle with reading. Moreover, those who had learned letter sounds were better able to identify unfamiliar words.

Early readers benefit from systematic phonics instruction. Among students in grades K-1, phonics instruction led to improvements in decoding ability and reading comprehension across the board, according to the National Reading Panel. Children at risk of developing future reading problems, children with disabilities, and children from all socio-economic backgrounds all benefited. Later research reviews have confirmed that systematic phonics instruction is effective for students with disabilities, and shown that it also works for English-language learners.

Most studies of phonics instruction test its immediate effectiveness—after the intervention, are children better readers? Among students in older grades, the results are less clear. A recent meta-analysis of the long-term effects of reading interventions looked at phonics and phonemic awareness training, mostly in studies with children in grades K-1. Both phonics and phonemic awareness interventions improved reading comprehension at an immediate post-test. But while the benefits of phonemic awareness interventions persisted in a follow-up test, the benefits of phonics interventions faded much more over time. The average length of all interventions included in the study was about 40 hours, and the follow-up assessments were conducted about a year after the interventions were complete, on average.

Some of my students didn't need phonics instruction to learn to read. Why are you saying that all kids benefit?

Depending on the estimate, anywhere from 1 percent to 7 percent of children figure out how to decode words on their own, without explicit instruction. They may spot the patterns in books read to them or

Getting Reading Right

print they see in their environment, and then they apply these patterns. These include children with a neurotypical form of "hyperlexia"—a condition in which children may begin decoding as early as 3—but this is more frequently associated with children who have autism-spectrum disorders and often have separate problems with reading comprehension.

It may seem like these children are reading words as whole units, or using guessing strategies to figure out what comes next in the story. But they are attending to all of the words' individual letters—they're just doing it very quickly.

A systematic phonics program can still benefit these students, who may have gaps in their knowledge of spelling patterns or words that they haven't encountered yet. Of course, phonics instruction—like all teaching—can and should be differentiated to meet the needs of individual students where they are. If a student can demonstrate mastery of a sound, there's no need to continue practicing that sound—he or she should move on to the next one.

There's another answer to this question: Students may look like they're decoding when they're actually not. For example, a child may see an illustration of an apple falling from a tree, and correctly guess that the sentence below the picture describes an apple falling from a tree. This isn't reading, and it doesn't give the teacher useful information about how a student will tackle a book without pictures.

Can cueing strategies help students to read?

Many early reading classrooms teach students strategies to identify a word by guessing with the help of context cues. Ken and Yetta Goodman of the University of Arizona developed a "three-cueing system," based on analysis of common errors (or "miscues") when students read aloud. Ken Goodman famously called reading development a "psycholinguistic guessing game," and cueing systems teach students to guess at a new word based on:

- Meaning/Semantics, or background knowledge and context, such as vocabulary a student has already learned;
- Structure/Syntax, or how the word fits in common grammar rules, such as whether the word's position in a sentence suggests it is a noun, verb, or adjective; and
- Visual/Graphophonics, or what a word looks like, such as how upper- and lowercase letters are used (suggesting a proper noun, for example) or common spelling patterns.

Cueing systems are a common strategy in whole-language programs, and also are used in many "balanced literacy" programs that incorporate phonics instruction. Cueing systems were designed by analyzing errors rather than practices of proficient readers, and have not shown benefits in controlled experiments.

Moreover, cognitive and neuroscience studies have found that guessing is a much less efficient way to identify a new word, and a mark of beginning or struggling readers, not proficient readers. Skilled readers instead sound out new words to decode them.

Balanced literacy programs often include both phonics and cueing, but studies suggest cueing instruction can make it more difficult for children to develop phonics skills because it takes their attention away from the letter sounds.

I know phonics instruction is supposed to be explicit and systematic. But beyond that, how should I teach it? Does the research say anything about what content I need to cover, and how should it be sequenced?

There is a general path that most children follow as they become skilled decoders. Research can tell us how children usually progress along this path, and which skills specifically predict better reading performance.

Before starting kindergarten, children generally develop some early phonological awareness—an understanding of the sounds that make up spoken language. They can rhyme, break down multi-syllable words, and recognize alliteration.

A next step in the process is understanding that graphemes—combinations of one or more letters—represent phonemes, the smallest units of spo-

ken language. It's easier for students to learn these letter-sound correspondences if they already have early phonological skills like rhyming and alliteration, along with knowledge of the names of the letters of the alphabet.

And while vocabulary is important for reading comprehension, research has also found that it's a component in decoding ability. One study found that when children know a word's meaning, they can more quickly learn how to recognize it automatically, because the visual letters, corresponding sounds, and meaning all map together when a reader recognizes a word.

There are other early skills that relate to later reading and writing ability as well, regardless of IQ or socio-economic status. Among these are writing letters, remembering spoken information for a short time, rapidly naming sequences of random letters, numbers, or pictures, and other phonological skills—like the ability to segment words into phonemes.

To decode words, students need to be taught to blend together the phonemes that graphemes represent on the page. For example, a young reader must learn to recognize that /r/, /o/, /d/ are three sounds that together form the word "rod," but also that the word "rock" also contains three sounds, /r/, /o/, /k/ This is a process that builds on itself rapidly. Though there are some 15,000 syllables in English, after a child has learned the 44 most common sound and letter combinations, they will begin to sound out words as they read. These include both the basic letter and vowel sounds, but also common combinations such as "th," "sh," and "-ing." There are two main ways to demonstrate to children that words are made up of sound-letter correspondences. In one method, students learn the sounds of the letters first and then blend these phonemes together to sound out words. That's synthetic phonics—they're synthesizing phonemes into greater whole words. The other method, analytic phonics, takes an inverted approach: Students identify—or analyze—the phonemes within words, and then use that knowledge to read other words.

Take the word "bat." In synthetic phonics, students would first learn the /b/ sound, then the /a/ sound, then the /t/ sound and blend them together to sound out "bat." In analytic phonics, students would learn the word "bat" alongside words like "cat," "mat," and "hat," and would be taught that all these words end in the "at" sound pattern.

So there's synthetic phonics and analytic phonics—is one way better than the other?

A few studies have found synthetic phonics to be more effective than analytic phonics. Most notably, a seven-year longitudinal study from Scotland found that synthetic phonics taught in 1st grade gave students an advantage in reading and spelling over analytic phonics. Still, when examined as a whole, the larger body of reading research doesn't surface a conclusive winner. Two landmark research reviews haven't found a significant difference in the effectiveness of the two methods. Other more recent research is still inconclusive.

Do these strategies apply to words that don't follow traditional sound-spelling patterns? What about words like "one" and "friend"—can those words still be taught with phonics?

Yes, but not alone; spelling and semantic rules go hand-in-hand with teaching letter sounds. Words like "lime" and "dime," have similar spelling and pronunciation. But some words with similar spelling have different pronunciations, like "pint" and "mint." And others have different spellings and similar pronunciations, like "jazz" and "has." Brain imaging studies find that when readers see word pairs that are inconsistent, they show greater activity in the areas of the brain associated with processing both visual spelling and spoken words. This shows that young readers use systems of understanding of both printed shapes and sounds when they see any written word. When those two systems conflict, the reader may call on additional rules, such as understanding that words at the end of lines of a rhyming poem (such as "has" and "jazz") likely rhyme even if their spelling would not suggest it.

Some research has found that teaching common irregular words, like "one" and "friend," as sight words can be effective. Still, in these studies, children were also taught phonics along with sight words—and that's important. Understanding phonics gives students the foundation to read these irregular words. Take "friend." While the "ie" doesn't produce the same sound it normally does, the other letters in the word do. Research has suggested that children use the "fr" and the "nd" as a framework when they remember how to read the irregular word "friend."

When should children start to learn how to sound out words? Is there a "too early"?

Even very young children can benefit from instruction designed to develop phonological awareness. The National Early Literacy Panel Report (2009), a meta-analysis of early literacy studies, found that teaching preschoolers and kindergartners how to distinguish the sounds in words, whether orally or in relationship to print, improved their reading and writing ability. The children in these studies were generally between the ages of 3 and 5.

Studies suggest progress in phonics is less closely linked to a child's age than to the size and complexity of his spoken vocabulary, and to his opportunities to practice and apply new phonics rules. There is some evidence that "decodable" books, designed to help students practice specific letter-sound combinations, can benefit the earliest readers. But it is mixed, and students very quickly progress enough to get more benefit from texts that provide more complex and irregular words—and often texts that students find more interesting.

How much time should teachers spend on teaching about letters and sounds in class?

There isn't yet a definitive "best" amount of time to spend on phonics instruction. In several meta-analyses, researchers haven't found a direct link between program length and effectiveness.

The National Reading Panel report found that programs focusing on phonemic awareness, the ability to hear, identify, and manipulate the smallest units of speech sounds, that lasted less than 20 hours total had the greatest effect on reading skills. Across the studies that the researchers looked at, individual sessions lasted 25 minutes on average.

But the authors of the NRP are quick to point out that these patterns are de-

scriptive, not prescriptive. The studies they looked at weren't specifically testing the effectiveness of different time lengths, and it may be that time wasn't the relevant factor in these shorter programs performing better.

Eventually, a skilled reader doesn't need to sound out every word that she reads. She sees the word and recognizes it immediately. Through reading the word again and again over time, her brain has linked this particular sequence to this word, through a process called orthographic mapping.

But neuroscience research has shown that even if it feels like she's recognizing the word as a whole, she's still attending to the sequence of individual letters in the word for an incredibly short period of time. That's how skilled readers can tell the difference between the words "accent" and "ascent."

What else—aside from phonics—is part of a research-based early reading program?

Phonics is essential to a research-based reading program. If students can't decode words, they can't derive any meaning from them. But understanding the alphabetic code doesn't automatically make students good readers. There are five essential components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension.

The National Reading Panel addressed all five of these components. The researchers found that having students read out loud with guidance and feedback improved reading fluency. Vocabulary instruction, both explicit and implicit, led to better reading comprehension—and it was most effective when students had multiple opportunities to see and use new words in context. They also found that teaching comprehension strategies can also lead to gains in reading achievement, though most of these studies were done with students older than 2nd grade.

For younger students, oral language skills; understanding syntax, grammar, vocabulary, and idioms; and having general and topic-specific background knowledge are also essential for reading comprehension.

This is one of the premises of the Simple View of Reading, a framework to understand reading first proposed by researchers Philip B. Gough and William E. Tunmer in 1986. In the simple view, reading comprehension is the product of decoding ability and language comprehension. If

Getting Reading Right

a student can't decode, it doesn't matter how much background knowledge and vocabulary he understands—he won't be able to understand what's on the page. But the opposite is also true: If a student can decode but doesn't have a deep enough understanding of oral language, he won't be able to understand the words he can say out loud. Since Gough and Tunmer first proposed this framework, many studies have confirmed its basic structure—that comprehension and decoding are separate processes. One meta-analysis of reading intervention studies finds that phonics-focused interventions were most effective through grade 1; in older grades—when most students will have mastered phonics—interventions that targeted comprehension or a mix of reading skills showed bigger effects on students' reading skills.

For young students, early oral-language interventions can help set them up for success even before they start formal school.

The National Early Literacy Panel found that both reading books to young children and engaging in activities aimed at improving their language development improved their oral language skills.

If children don't learn to read naturally from being exposed to reading, why are parents and teachers encouraged to read to infants and preschoolers?

The amount of time adults read with preschoolers and young children does predict their reading skills in elementary school. One of the most important predictors of how well a child will learn to read is the size and quality of his spoken language and vocabulary, and children are more likely to be exposed to new words and their meanings or pick up grammar rules from reading aloud with adults.

In a series of studies in the late 1990s of 5-year-olds who had not yet learned to read, Victoria Purcell-Gates found that after controlling for the income and education level of the children's parents, children who had been read to regularly in the last two years used more "literary" language, longer phrases, and more sophisticated sentence structures. Moreover, an adult reading with a child is more likely to explain or expand on the meanings of words and concepts that the child does not already know, adding to their background knowledge.

Reading with trusted adults also helps children develop a love of reading. "The association between hearing written language and feeling loved provides the best foundation for this long process [of emergent literacy], and no cognitive scientist or educational researcher could have designed a better one," notes cognitive neuroscientist Maryanne Wolf.

What about independent choice reading?

In a choice reading period—also known as sustained silent reading or Drop Everything and Read—students get to pick a book to read independently in class for a set amount of time. The premise behind this activity is that children need time to practice reading skills on their own to improve.

There is a lot of correlational research that shows that children who read more are better readers. But many of these studies don't quantify how much reading students are actually doing. While they may specify a time frame—15 minutes of sustained silent reading, for example—the studies don't report whether kids spend this time reading. That makes it difficult to know how effective choice reading actually is.

More importantly, these studies don't provide experimental evidence—it's not clear whether reading more is what makes students better readers, or if better readers are likely to read more. The National Reading Panel found that there wasn't evidence that choice reading improved students' fluency.

Does it make a difference whether children learn to read using printed books or digital ones?

In the last decade or so, access to Internet-based text has continued to expand, and schools have increasingly used digitally based books, particularly to support students who do not have easy access to paper books at home. Yet some emerging evidence suggests children learn to read differently

in print versus digitally, in ways that could hinder their later comprehension.

Researchers that study eye movements find that those reading digital text are more likely to skim or read nonlinearly, looking for key words to give the gist, jump to the end to find conclusions or takeaways, and only sometimes go back to find context in the rest of the text. In a separate series of studies since 2015, researchers led by Anne Mangen found that students who read short stories and especially longer texts in a print format were better able to remember the plot and sequence of events than those who read the same text on a screen.

It's not yet clear how universal these changes are, but teachers may want to keep watch on how well their students reading electronically are developing deeper reading and comprehension skills. ■

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'Decodable' Books: Boring, Useful, or Both?

By Sarah Schwartz

To really learn a new skill, you need to practice. That theory drives much of Katie Farrell's reading instruction.

In her 1st grade class at Bauer Elementary School in Hudsonville, Mich., Farrell teaches students phonics—how letters on the page represent the spoken sounds children hear.

But for some kids, the learning only really clicks once they practice these patterns in decodable books. These short texts are written with a high proportion of words that are phonetically regular—meaning they follow common sound-spelling rules—and mostly include words with phonics patterns that children have already learned.

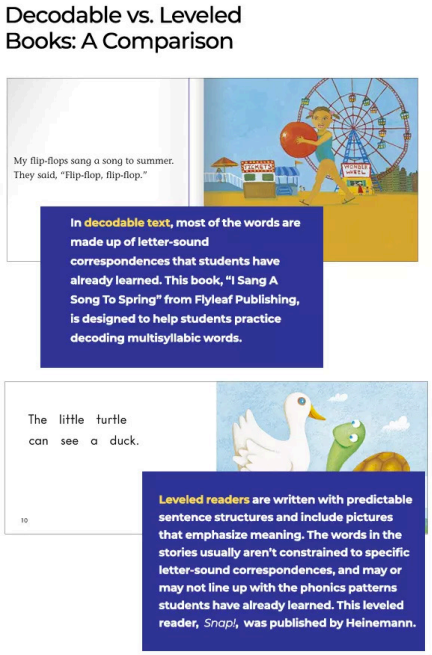
"When you can make that match ... that's where the power lies," she said.

Research has long shown that teaching early elementary students phonics is the most reliable way to make sure that they learn how to read words. And much of the current debate around reading instruction has focused on phonics teaching, as many schools don't currently follow research-based best practice in this area.

But text plays a big role in the reading classroom, too. Decodable text, specifically, is a "crucial learning tool," said Wiley Blevins, who has written several books on phonics and currently works as a consultant training teachers.

Even so, teachers are divided when it comes to decodable books.

In Education Week's recent national survey of early reading teachers, only 23 percent said that beginning readers should be using these texts most often. The majority, 61 percent, said that students should be reading books with high-frequency words, predictable sentence structures, and pictures that emphasize meaning. Often called leveled books, these texts are rated on a difficulty scale. Teachers aim to match students with books at their level.



There's also a common criticism that decodable books, because of their inherent language constraints, are boring and stilted. Why subject students to these contrived stories, the argument goes, when they could be reading something more engaging?

But many experts agree that kids need that targeted practice. "When you are teaching phonics, the way to get that learning to stick is to apply it in connected text," said Blevins.

"It builds the right strategies," said Farrell. "They're not reading books that they're not ready for, and using the pictures to guess."

Still, decodables aren't the only books that young students should read. Most experts suggest a varied text diet. And, decodables are ultimately a stepping stone.

Eventually, Farrell says, "I want them in that authentic text using the strategies that they practiced when they're using the decodable books."

Building Strong Habits

Researchers agree that decodable text is meant to be used during a short window, when students are first learning to sound out words.

Studies have shown some benefits for early readers. When kids read decodable books, they're more likely to try to decode—to sound out the words. Some studies have found that they're also more likely to read words accurately.

But other research suggests that it may not matter what kind of text students read, as long as they're getting strong phonics instruction. In one 2004 study, two groups of struggling readers in 1st grade received one-on-one phonics tutoring. One group read books that were mostly decodable; the other read books that were mostly not decodable.

There wasn't any significant difference in the word reading or comprehension of the two groups at the end of the study.

Still, there's more research on decodable text than on other types of early reading materials, like leveled readers, said Heidi Anne E. Mesmer, a professor of reading at Virginia Tech.

She suggests that decodable books be used like "a set of training wheels on a bicycle."

"If you think about the amount of

time that children learning to ride a bike use training wheels, it's not long," she wrote in an email to Education Week. "Also, not all children need training wheels."

These "training wheels" help students practice their phonics skills in a controlled environment. But just as importantly, they teach students to try to sound out words, Blevins said.

He pointed to a 1985 study by researchers Connie Juel and Diane Roper-Schneider, which found that the texts students were exposed to early on could affect how they tackled words.

In the study, students who read decodable text tried to sound out words more often than students who read text that prompted students to use other cues.

When students are mainly reading leveled text with predictable sentence structures, "they're undervaluing and underusing their phonics skills," Blevins said. "This creates a really bad habit. Every book they pick up, their first strategy is, try to look at patterns, look at pictures, memorize." Decodable books encourage the right strategy of sounding out the words, he said.

'Boring and Stupid'?

In Claudia Margaroli's 1st grade class, decodable books help remind students that they should be focused on sounding out the words.

"This year, I've been trying to be more specific with teaching sounds in a sequential order," said Margaroli, who teaches at Charlotte East Language Academy in Charlotte, N.C. She teaches sound-letter correspondences explicitly in her phonics lessons, and then students practice in decodable books.

"They know—and I make them say it and verbalize it—that these are sounds they've been working on, these are words they can read," Margaroli said.

Decodable books should follow the progression of a phonics program, focusing on new sound-spelling patterns and "folding in review and repetition," said Blevins.

But some teachers balk at the idea of using these books, even for practice of key skills, said Blevins, who does training with schools. Why? He remembers one group of teachers who were especially blunt about decodables: "They're boring and stupid," they told him.

Margaroli says it's true that some decodable books "just don't have a storyline." She looks for decodables "that you can actually use for comprehension," she says, "rather than a weird story about a cat and a mat, where at the end nothing happens except that cat is on the same mat."

How did we get "weird" stories about cats and mats, with thin plots and stilted language? Researchers trace the trend back to the late 1990s and early 2000s, when Texas and California both required decodable texts in their reading program adoptions. The states set decodability thresholds for texts: In Texas, 80 percent of the text had to be sound letter correspondences that students had already learned; in California, the number was 75 percent.

> "If you think about the amount of time that children learning to ride a bike use training wheels, it's not long. Also, not all children need training wheels."
>
> **HEIDI ANNE E. MESMER**
> PROFESSOR, VIRGINIA TECH.

In response, publishers got competitive, each trying to make the book that was the highest percent decodable, Blevins said. Irregular words, like "the," often disappeared, even though they're highly common in the English language.

But there isn't evidence to suggest that a 90 percent decodable book is more effective than one that's 75 percent decodable, or 60 percent, said Timothy Shanahan, professor emeritus at the University of Illinois Chicago. There's no "magic level," he said.

In the rush to fill texts with only decodable words, the number of unique words per hundred in these books also increased during this time, said Elfrieda H. Hiebert, a reading researcher and the president and CEO of TextProject. So instead of seeing the same word multiple times throughout a story, students would see different words that all had the same spelling patterns.

To clear the high decodability bar, publishers started using sentences that English speakers wouldn't say or write under normal circumstances, said Blevins—like, "Let Lin dab a lip."

"The problem is, these stories made no sense," he said. "These books aren't Shakespeare, but they should be good stories that children enjoy reading."

There's also value in repeating some of the same words throughout the story, said Hiebert. Decoding the same word several times helps kids link the sound to the spelling in their minds, Hiebert said, and can lead to more fluent reading. "There has to be a really strong component of consistent data that kids are getting," she said.

What Makes a Good Decodable?

Hiebert looks for a few criteria when she's evaluating decodable books.

She wants to know if they're exposing students to "highly consistent and prolific patterns" in the text, getting practice with letter-sound correspondences that they can apply to other texts.

She also wants to know if the texts make sense as stories, and are building student knowledge. What are they teaching students about the world? A lot of decodables still fall short in this category, she said.

But when a decodable book has a story, it doesn't have to be relegated just to sounding out practice, disconnected from the rest of the lesson, said Blevins. He suggests that teachers have rich conversations about the stories with students, asking comprehension questions to demonstrate that reading is about meaning. Students can also write about the books.

In Margaroli's class, students do just that, writing responses to questions about the text. Still, reading and writing about decodable text is only one part of Margaroli's literacy block.

Her students also listen to read-alouds, have conversations, and read books from their class library.

There are no research-based rules on how much time beginning readers should spend with decodable text, said Shanahan. It would be "very reasonable,"

> "When you are teaching phonics, the way to get that learning to stick is to apply it in connected text."
>
> **WILEY BLEVINS**
> AUTHOR

though, to spend some portion of phonics instruction on practice, he said. This includes decoding individual words, spelling words, and reading decodable books.

Shanahan, Blevins, and Mesmer all said that decodable books aren't the only kind of text that students should have access to in these early elementary years. And though Margaroli's students practice in decodables, they have other time in the day to read books of their choice from the class library.

This kind of diverse reading diet is important for students because it exposes them to a broader representation of the English language, said Shanahan. Decodable books are usually constrained to phonetically regular words. Letting kids read books without those constraints can give students some experience encountering words that don't follow normal patterns, and help them "figure out the statistical properties of the language," he said.

How can teachers know when students are ready to take the training wheels off, and stop practicing on decodables altogether?

Farrell, the 1st grade teacher in Michigan, watches how students are segmenting and blending words as they read.

Once they can consistently apply the skills they've learned in their phonics lessons, "that's my first clue that I think we're ready to move on," Farrell said. It shows her that, with her guidance, students could apply the same strategies when they read more authentic text, she said.

By the spring of 1st grade, "almost no one in the class is using decodable books," said Farrell. "I love them, and then we get to a point where we just don't need them anymore." ■

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Published on November 12, 2019, in Education Week's Teaching Now Blog

Schools Should Follow the 'Science of Reading,' Say National Education Groups

By Sarah Schwartz

In the wake of falling reading scores on the test known as the Nation's Report Card, 12 major education groups are calling on schools to adopt evidence-based reading instruction.

On Tuesday, the collective—consisting of Achieve, Alliance for Excellent Education, Collaborative for Student Success, the Thomas B. Fordham Institute, Learning Heroes, Literacy How, the National Association of Elementary School Principals, the National Council on Teacher Quality, the National Urban Alliance, the National Urban League, the Military Child Education Coalition, and the Education Trust—released a call to action, urging policymakers and education officials to prioritize evidence-based instruction, content-rich curriculum, and teacher training.

With this move, the 12 organizations join the growing number of education groups publicly advocating for the "science of reading"—the decades of psychology and cognitive science research that demonstrate best practices in teaching children how to comprehend text. This summer, for instance, the International Literacy Association endorsed systematic and explicit phonics in all early reading instruction.

The topic has seen a surge of interest recently, after a series of radio documentaries by American Public Media's Emily Hanford reported that a lot of elementary schools aren't delivering the kind of systematic phonics instruction that many beginning readers need in order to decode words.

"We've known for more than two decades—at least since the report of the National Reading Panel—that the successful instruction of almost all beginning readers must include phonics, phonemic awareness, fluency, vocabu-

lary, and text comprehension instruction," the collective's statement reads. "Yet, that isn't what's happening in many American schools."

The results on the 2019 National Assessment of Educational Progress, released last month, painted a troubling picture of young students' reading ability. Overall, 4th and 8th graders' performance in reading is declining—and the lowest-performing students are losing the most ground.

Only 35 percent of 4th graders were considered proficient readers on the NAEP test, compared to 37 percent of 4th graders in 2017. Eighth graders' scores dropped too, from 36 percent at proficient in 2017, to 34 percent this year. While the highest-performing students scores' stagnated, the lowest-performing students scores dropped.

What's causing this trend? It's hard to know for sure. The NAEP test measures reading comprehension, but as EdWeek's Liana Loewus pointed out after the scores were released, comprehension isn't a single skill. Instead, it's the product of two different factors.

Students need to be able to understand how to read the words off a page—how to decode. But they also need to have the vocabulary and background knowledge to understand the words that they read. While the NAEP scores can show that students are struggling, they can't pinpoint which part of this comprehension equation students are struggling with.

The first two points on the 12 groups' agenda highlight both strands of reading comprehension, calling for schools to teach foundational skills, while also implementing curriculum that is designed to build student knowledge.

The group also called for teacher preparation programs to better train future educators in evidence-based instruction, for greater availability of high-quality books by diverse authors, and for an increased federal investment in literacy, from birth through 12th grade.

The collective cited Mississippi, one of the only two states to see an increase in reading achievement on NAEP, as an exemplar of "what's possible when these strategies are implemented patiently and effectively."

In 2013, the state passed a 3rd grade retention law, which allowed students to be held back if they couldn't reach proficiency. In the years since, Mississippi has turned its attention to training teachers in evidence-based practices. ■

Published on August 26, 2018, in Education Week

Are Classroom Reading Groups the Best Way to Teach Reading? Maybe Not.

By Sarah D. Sparks

Educators and researchers are looking to update one of the oldest, most popular—and at times one of the most controversial—methods of targeting instruction: the elementary reading circle.

Grouping students of similar reading skills—think "bluebirds" or "redbirds," for example—has become ubiquitous in American classrooms as a way to target instruction to students' learning needs, spreading from 68 percent of classrooms in 1992 to more than 90 percent by 2015. But evidence suggests that the practice may be less beneficial than teachers think: It can exacerbate achievement gaps and even slow reading growth for some children unless the groups are fluid and focused on skills rather than overall achievement.

The spread of modern ability grouping is likely in response to growing pressures to raise test scores under the No Child Left Behind Act's accountability system, said Adam Gamoran, the president of the William T. Grant Foundation and a longtime researcher of ability-grouping strategies. "Many people believe it is possible to use ability grouping as differentiated instruction to maximize achievement growth," he said. "It often doesn't work out that way in practice."

Early grades are particularly likely to group students by ability, because the typical bell curve in a kindergarten or 1st grade classroom is so wide.

In one forthcoming study, Marshall Jean, a research fellow at the Northwestern University Institute for Policy Research, tracked nearly 12,000 students from kindergarten through 3rd grade in more than 2,100 schools, following them through high, middle, and low reading groups or ungrouped reading classes.

He found about half of children who were in the lowest reading group in kindergarten were able to improve to at least the median group by the end of 1st grade. By the end of 3rd grade, 46 percent of those who had previously been in the lowest group in 2nd grade were able to move up. However, Jean found that none of the students initially placed in the lowest kindergarten group ever caught up to the reading level of their classmates who had started out in the highest reading group.

"The structural inertia is considerable," Jean noted, finding that having been in the highest reading group in an earlier grade tended to protect students from being put in a lower group later, even with significantly lower scores. Students in lower reading groups not only progressed more slowly academically, but while they were in lower reading groups, they were also slower to develop "learning behaviors," such as varied interests, concentration on tasks, and persistence in the face of difficulty. Those behaviors, in turn, reduced the students' likelihood to move up to higher reading groups in later grades.

Potential Bias?

"If you are more motivated and the teacher perceives that about you, you are more likely to be put into a higher reading group," Jean said. "But there was also some evidence for bias: Even after controlling for prior reading achievement and learning behaviors, students in poverty were more likely to be assigned to lower groups, and their wealthier peers more likely to be tapped for higher reading groups. They were small effects, but they are there and consistent across grade levels and statistically significant."

Similarly, in a series of three new studies in Switzerland, researchers asked practicing teachers and college students to evaluate profiles of students whose scores put them on the borderline of more or less academically rigorous tracks in high school; the students' achievement scores were held constant but their backgrounds were altered to

Why Every Educator Needs to Understand the 'Science of Reading'

An interview with Louisa C. Moats, Ed.D., the nationally recognized author and authority on literacy education.

Dr. Moats has written widely about the professional development of teachers, the importance of brain science, and the relationships among language, reading, and spelling.

Q: In your opinion, why do so many students fail to become proficient in reading?

Dr. Moats: Many factors contribute to the "achievement gap" in reading—insufficient early childhood language development, insufficient familiarity with books and print, differences in "wiring" or the brain's capacity to analyze speech, and so forth. The solution to reading problems, no matter what their origin, is instruction by a well-informed teacher who knows how to help kids overcome those disadvantages.

Q: For decades, you have been a spokesperson for reading research and what we understand about how children learn to read. Can you define the science of reading?

Dr. Moats: The body of work referred to as the "science of reading" is not an ideology, a philosophy, a political agenda, a one-size-fits-all approach, a program of instruction, nor a specific component of instruction. It is the emerging consensus from many related disciplines, based on literally thousands of studies, supported by hundreds of millions of research dollars, conducted across the world in many languages. These studies have revealed a great deal about how we learn to read, what goes wrong when students don't learn, and what kind of instruction is most likely to work the best for the most students.

Q: Is there evidence that the "science of reading" can make a difference in reducing reading problems?

Dr. Moats: Yes, those findings about effective instruction are what's driving our commitment to try to change the status quo. Whole states, as with Mississippi on the most recent NAEP, can make significant gains. But we have a series of studies showing that by the end of first grade, the rate of serious reading problems can be reduced to about 5 percent or less.

Q: Lately, there has been much discussion about the science of reading. For example, Emily Hanford of American Public Media has brought new attention to the concept. Do you feel that educators are becoming more familiar with the science of reading and are applying this into their teaching?

Dr. Moats: These days, I have moments when I feel more optimistic. Emily Hanford's reports have been the catalyst sparking our current national discussion.[1] A growing number of states are confronting what is wrong with the way many children are being taught to read. I'm inspired by the dialogue and courage of the people who know enough about the science of reading to offer a vigorous critique of those practices, programs, and approaches that just don't work for many children. I am also optimistic about the recent report out from the National Council on Teacher Quality. There's an increasing trend of new teachers being trained in the components of reading, and I think that many veteran educators are open to deepening their learning.

However, there's still a long way to go. In general, our teaching practice lags far behind what the research tells us. We consolidated the research on what it takes to teach children to read way back in the early 1990s, and yet today a majority of teachers still haven't been given the knowledge or instruction to effectively teach children to read.

[1] For Emily Hanford's reporting, see "At a Loss for Words: How a flawed idea is teaching millions of kids to be poor readers," American Public Media, 8/22/2019. apmreports.org/story/2019/08/22/whats-wrong-how-schools-teach-reading



Q: Some states, like Mississippi and Ohio, are improving student literacy rates across the entire state. To what do you attribute this noticeable rate of improvement in those states?

Dr. Moats: Change in those states and others is a consequence of many converging factors, including unambiguous and consistent leadership from the state level; statewide delivery of professional development (mainly with ***LETRS***®) to most teachers; in-class coaching to help teachers apply their professional learning; standards and incentives for both students and teachers, as is manifest on required tests; and support for changes in how teachers are licensed in the first place.

Q: Could you tell us a bit about *LETRS* and how it supports educators?

Dr. Moats: ***LETRS*** (*Language Essentials for Teachers of Reading and Spelling*) empowers teachers to understand the *what*, *why*, and *how* of scientifically based reading instruction. We focus on teaching essential components including phoneme awareness, phonics, vocabulary, fluency, and comprehension that should be taught during reading and spelling lessons to obtain the best results for all students. Teaching reading is a complex undertaking because, ideally, all aspects of language are explicitly addressed within a curriculum that is rich and meaningful. Not only do teachers need to understand how kids are learning to read, but also, they must adopt instructional routines, activities, and approaches that can be used to differentiate instruction.

After going through the ***LETRS*** training, educators generally have a better sense of what they should be looking for in a reading curriculum and are much more critical consumers. For example, in one state we had a strong group of teachers who learned a tremendous amount about early reading through ***LETRS***. When the state pushed to adopt a particular program, these educators could immediately identify the program's significant design weaknesses based on what they had learned from ***LETRS***.

Q: What should school and district leaders consider when evaluating programs that support what is known about the science of reading?

Dr. Moats: Here are a few important things for leaders to consider when evaluating programs. First, ideally, there should be explicit instruction in foundational skills for approximately 45 minutes daily that follows a lesson routine: review, explain the concept, provide guided practice, provide more (independent practice); spell and write to dictation; read decodable text. Then, determine if the instruction in phoneme awareness, phonics, and text reading is informed by knowledge of both the speech-sound system and the orthographic system. Third, examine the scope and sequence for order and pacing of concept introduction. Intervention materials should be aligned with [Tier I] classroom instructional materials but provide more intensive practice. AVOID any program that includes drawing shapes around words, making alphabetic word walls, teaching the "cueing systems" approach (appealing to context to guess at unknown words), or that does not follow a clear scope and sequence where one skill is built upon another.

Q: What advice would you give to district or school leaders who want to change how reading is being taught in their classrooms?

Dr. Moats: Invest in teacher education before investing in specific programs. Any program will be more powerful if knowledgeable, confident teachers are using it. In fact, we have evidence that if teachers do not understand either the content or the rationale for explicit teaching, they are unlikely to get results even if the program they have been given is well designed. The program is only a tool; teachers must know how to use it. It's a wonderful thing when we understand what we're doing, why, and for whom we're doing it. ■

5 REASONS WHY

Educators Need Research-Based Literacy PD

To face the persistent inequities in literacy achievement across America, prioritizing evidence-based reading instruction and effective teacher training is crucial. This white paper, *The Need for Research-Based Literacy Professional Development*, focuses on the need for impactful, research-based professional development. It explains how the ***LETRS***® literacy solution bridges gaps in teacher preparation and translates research about language development into classroom practice.

Here are **five reasons** why educators should consider research-based literacy PD to improve reading instruction:

1 The Science of Teaching and Learning to Read

The paper references the vast evidence base known as the science of teaching and learning to read. Nevertheless, research on teacher knowledge and practice indicates that classroom teachers are not receiving sufficient preservice preparation to implement research-based principles for addressing the major components of instruction. Studies do show that teachers can get better results when they understand and practice those teaching principles.

2 The Importance of Teachers' Knowledge of Language

To be effective teachers of literacy, educators must know a lot of specific information about the structure of oral and written language, language and literacy skill development, and related pedagogy. Most teachers, unless they have had the opportunity to study language in some depth, benefit from learning this content and learning how to explain word, phrase, sentence, and text concepts to their students.

3 The Importance of Expertise in Systematic Teaching of Reading Skills

Explicit, systematic, and teacher-led instruction is particularly important for those students who do not learn to read and write easily and who may be at risk. In the literacy research presented in the white paper, Dr. Louisa Moats finds teachers typically need more support and practice to develop expertise in explicit teaching of phonological awareness, phonics, spelling, and the connections between word reading and meaning-making.

To read the entire white paper, *The Need for Research-Based Literacy Professional Development*, download it here: go.voyagersopris.com/letrs-iesd

4 Addressing Dyslexia and Other Reading Difficulties

When addressing teachers' training for reading for struggling students, including those with dyslexia, the white paper discusses how students with reading difficulties can also benefit from direct, explicit, systematic, and intensive instruction. The majority of both regular classroom and intervention teachers need to keep up-to-date with research-based recommendations for maximizing student achievement.

5 Applying What We Know about How Teachers Learn

Throughout ***LETRS***, teachers are exposed to evidence-based research about reading and explore systems of oral and written language critical to literacy development. The pacing and presentation of content has been determined by years of feedback from participating teachers. Teachers' progress in learning the material is supported with a series of short tasks where immediate feedback is available, and with embedded opportunities to apply content to participants' own students.

It is crucial that today's reading teachers have access to training that increases their content knowledge about the science of reading and enhances their understanding of effective strategies for teaching students how to read, write, and spell. *LETRS* is comprehensive professional development that addresses oral language, spelling, and writing; helps teachers understand how language, reading, and writing are related; and presents strategies that are most helpful in improving reading outcomes.

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make them appear to be either high- or low-income. Over multiple studies, recently published online in the journal Personality and Social Psychology Bulletin, both student and practicing teachers were more likely to refer lower-income students to a lower academic track and higher-income students to a more challenging track, even though their scores were the same.

"Because of inequality outside of schools, children from different socioeconomic and racial and ethnic backgrounds often come to school with different levels of preparation. And so by separating the children by their initial reading ability, the teachers are also separating [them] by socioeconomic status or race or ethnicity," said Gamoran of the William T. Grant Foundation. "And, of course, when teachers have low expectations for their weaker readers, they slow down the pace even more than they would need to, so the low-achieving students fall further and further behind instead of catching up."

Fluid Groups

Besser Elementary School in Alpena, Mich., switched to ability grouping in its early-reading classrooms about three years ago. It's not clear yet how well the practice is working. About half the school's students live in poverty, and their achievement gap with higher-income students has stayed stubbornly wide.

"We were focused on making instruction more meaningful for all students. Teachers need to focus on struggling students, but on the other end of the continuum where students needed to be enriched, those students were being left behind," said Eric Cardwell, the principal of Besser Elementary. "The challenge teachers have seen now is they're having to plan for three to four different groups."

Those high-achieving students have improved, he said, but the groups themselves have remained more stable than he'd like.

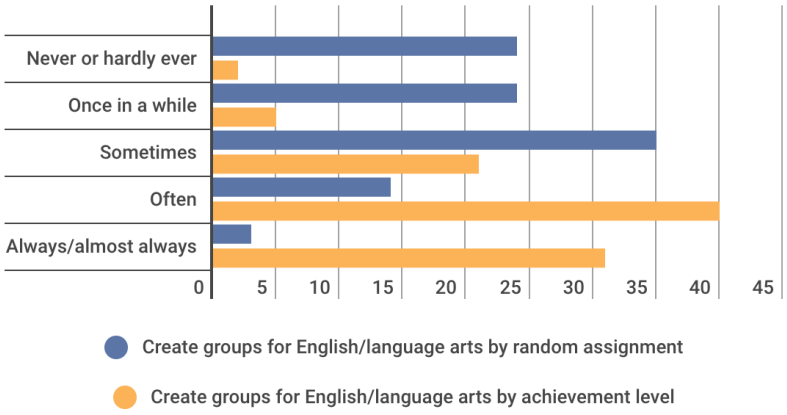
"What we frequently see is slight movement of students. You don't generally see them jumping two levels at a time when we only do data reviews three times a year," Cardwell said. "Ideally, there would be more [reviews] so that there would be more fluidity, but time is always the monster that's chasing you: time to review data, time to plan."

Internationally, the Organization for Economic Cooperation and Development found that countries that predominantly use ability grouping showed significantly deeper performance inequality on the Program for International Student Assessment but no significant benefits for the countries' overall performance. OECD noted that more than 9 in 10 U.S. 15-year-olds attend schools where they are grouped by ability.

"What we know now that we didn't know back in the '80s is that when you group up students, it has to be specifically relative to the content that's going to be taught," Gamoran said. "There're no IQ tests, not even a general reading-ability test that can tell you how to form the groups so that you can meet their needs. You have to form the groups specific to

How Often Are Teachers Using Reading Groups in 4th Grade?

Teachers are more likely to place students in reading groups based on ability than they are to randomly assign them. Among the 4th grade teachers who use reading groups, the majority of them report using ability-based groups often or always.



Reading Achievement

High- and low-poverty classes that used ability-based reading groups "almost always" scored lower on average than those that used them "hardly ever" on the 2017 National Assessment of Educational Progress.

	High Poverty Schools	Low Poverty Schools
Never or hardly ever (use ability grouping)	220	228
Always/almost always (use ability grouping)	219	226

SOURCE: National Assessment of Educational Progress (NAEP) 2017 Reading Assessments

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the instruction that's coming and then reassess to form new groups specific to the next instructional unit."

Changing the Calculation

One California program has shown promise in making reading circles more flexible and less stigmatizing. In Assessment to Instruction, or A2I, teachers give a diagnostic assessment to all students every eight weeks to identify strengths and weaknesses in particular reading skills in four areas of literacy: decoding, fluency, comprehension, and usage. An algorithm based on the assessment tells teachers how much individual, small-group, and independent working time each student needs, and students are grouped for instruction based on particular focus skills rather than overall reading ability.

"What we've discovered is that it's fine to have a group of students of different levels, as long as they all are working on the same learning needs," said Carol Connor, an education professor at the University of California, Irvine, who developed the program. "You can have students of different reading abilities who all need to work on decoding. ... What doesn't work is if you put your kids who already know how to code in a group to learn how to code, again. You receive more behavior problems because they're really bored, ... and our research suggests that it has a negative effect on their growth."

Phoenix Collegiate Academy (now ASU Prep) in Arizona was one of the schools that piloted the A2I program, and Amanda Jacobs, then-principal, said it changed the way teachers and administrators approached differentiating instruction in small groups. Previously, teachers focused on providing equal time with each small group, but "it shifts your perspective from trying to get to every kid in the time you have to being more strategic with how you're spending your minutes with each child."

In a recent longitudinal, randomized controlled study, students who participated in the targeted reading groups over three years performed significantly higher than students in a control group that used standard reading classes. Though 45 percent of the students in the targeted reading groups came from a low-income background, by 3rd grade, all of them had higher reading scores than the national average for their grade, and none had scores below the expectations for their grade level.

"There are no 'bluebirds' being the bluebirds all year long," Connor said. ■

COMMENTARY

Published on October 26, 2018, in Education Week

Why Doesn't Every Teacher Know the Research on Reading Instruction?

Three recommendations for greater reading proficiency

By Susan Pimentel


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Almost two decades ago, the National Reading Panel reviewed more than 100,000 studies and arrived at recommendations for how students should receive daily, explicit, systematic phonics instruction in the early grades. Why is this literacy research not more widely known? Why is the fact that reading skills need to be taught, and that there is a well-documented way to do it, not something highlighted in many teacher-preparation programs (or parenting books, for that matter)?

Recently, a remarkable audio-documentary by Emily Hanford went viral, shining a spotlight on such crucial literacy research—none of which is new, but much of which is unknown to today's teachers. Like many in the literacy community, I worry about our failure to bring research into classroom practice. My concern is greatest for teachers who are being sent into classrooms without the tools they need to succeed. I'm hopeful this renewed interest will serve as a catalyst for overhauling reading instruction in our teacher-preparation programs. However, relying solely on better preparation for the next generation of teachers is a slow delivery system to children. The stakes are too high. We need more immediate solutions.

Only roughly one-third of our nation's 4th and 8th graders can demonstrate proficiency on national tests, with students from low-income families and students of color faring the worst. When students can't read, they have trouble learning; the great majority of students who fail to master reading by 3rd grade either drop out or finish high school with dismal lifetime earning potentials.

I'd like to build on the momentum Hanford's piece has sparked to call attention to additional research-based practices that go hand-in-hand with the importance of phonics. As educators experience 'aha' moments about the need for stronger phonics instruction, let's talk about some other literacy practices that need fixing in elementary classrooms. Here's my short list of practices and resources to add to the conversation :

1. **Let all kids read the good stuff.** The pervasive practice of putting kids into reading groups according to their "just right" reading level has meant that large numbers of students receive a steady diet of below-grade-level instruction. The texts they're reading don't require them to decipher unfamiliar vocabulary, confront chal-

lenging concepts, or parse new and complicated language. Noted literacy researcher Timothy Shanahan has written extensively about why this is the wrong approach, documenting that "after 70 years there still isn't any research supporting the idea of matching kids to just-right texts" after 1st grade—yet still the practice persists. This, despite research showing that the ability to handle complex text is the distinguishing characteristic between students who go on to do well in college and work and those who don't.

Why would we deprive our youngsters of the opportunity to build this muscle in elementary school, when all that's standing in the way of their doing so is the opportunity and the support that close reading can provide?

The Council of Chief State School Officers offers a host of resources to help teachers guide students with complex texts.

2. **Build students' general content knowledge.** Some of the most profoundly important, yet under-recognized, reading research shows that students' reading comprehension depends heavily on their background knowledge about the world—knowledge that comes largely from learning about science and social studies topics. When students know something about a topic, they are better able to read a text in which that topic is discussed, even when the sentence structure is complex or the words are unfamiliar. Cognitive science expert Daniel Willingham explains this principle clearly, and the Knowledge Matters Campaign expands on it further.

The implications for literacy instruction are enormous because young children are receiving less time with science and social studies content in their school day. According to a 2007 study, instructional time spent on these subjects dropped by an hour and a half per week since the 1990s. The diminished attention to these knowledge-building topics creates less fertile ground for reading comprehension to flourish and is a significant culprit in our stagnant national reading outcomes. Given that time is a scarce commodity in most schools, the takeaway for school leaders is to incorporate rich content, organized around conceptually-related topics, into the reading curriculum so that students learn new information about the world while they develop as readers. Student Achievement Partners has ready-made resources that teachers can pull into their classrooms.

3. **Let quality English/language arts curriculum do some of the heavy-lifting.** Poor-quality curriculum is at the root of reading problems in many schools. It is not an overstatement to say that a school that doesn't have a phonics program is doing its students a huge disservice. Increasingly, the same can be said about the lack of intentionality for building students' knowledge of the world and access to complex text. The current lack of educator know-how can be remedied by curriculum that points the way.

Fortunately, bolstered by emerging research about the "curriculum effect," we're in the midst of a curriculum renaissance. In recent years, a number of respected organizations have developed curricula that are tailor-built to both state standards and the latest research. Educator reviews conducted by organizations such as the nonprofit EdReports or Louisiana Believes can help schools easily identify the best curriculum for their context. No longer should classroom teachers need to scour the internet for materials. Instead, educators can spend their time focusing on how to become the best possible deliverers of thoughtfully arranged, comprehensive, sequential curriculum that embeds standards, the science of reading, and the instructional shifts described above.

I have great empathy for teachers who have labored under the weight of misdirected teacher preparation, insufficient curriculum, ever-shifting educational fads, and ever-increasing professional demands—and welcome the attention of journalists who are shining a light on the opportunity represented by the convergence of science and a new class of high-quality curriculum materials. Based on my own experiences with educators taking this improvement journey, significant reading gains are possible with the right support. Our students' reading future can be bright—if we seize the moment. ■

Susan Pimentel is a co-founder of StandardsWork and a founding partner of Student Achievement Partners, both nonprofits dedicated to improving K-12 student achievement through evidence-based action. She was the lead author of the Common Core State Standards for English/language arts literacy.

COMMENTARY

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The Hard Part About Reading Instruction

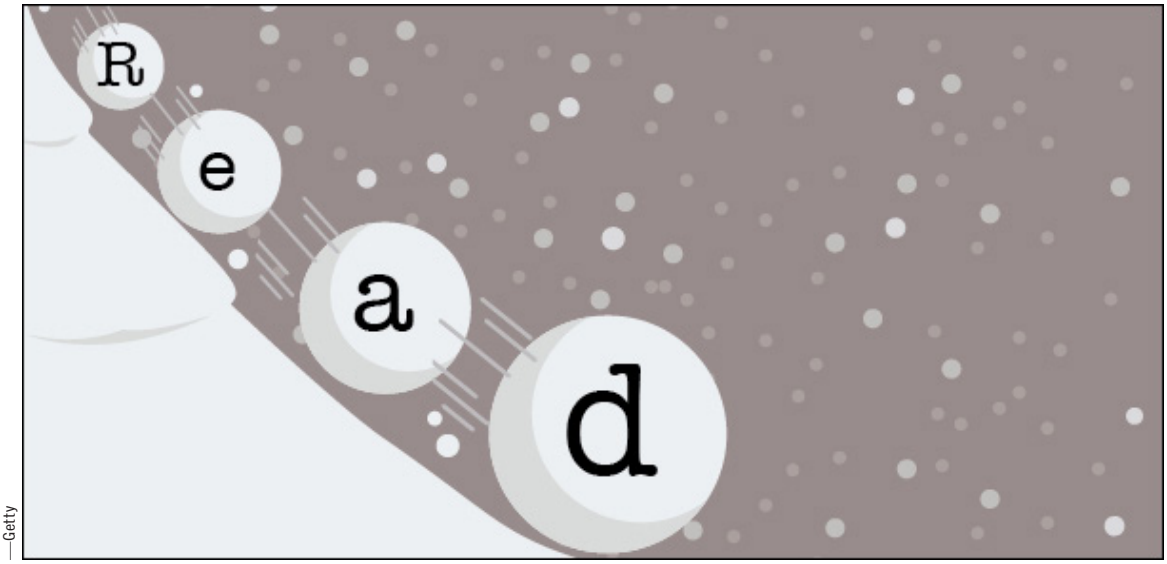
We actually know quite a bit about how to teach reading. So why don't we do it right?

By Jared Myracle

Spoiler alert: The hard part about reading instruction is not figuring out how to teach reading. We actually know quite a bit about that. There has been renewed interest in discussing the findings of the 2000 National Reading Panel report on the importance of phonics-based instruction in the early grades. The popularity of Emily Hanford's radio documentary "Hard Words" and Susan Pimentel's Education Week Commentary "Why Doesn't Every Teacher Know the Research on Reading Instruction?"—and the conversations both stirred—underscore that how we teach reading is far from settled, even 20 years after the publication of the panel's report. Earlier this year, I co-authored a Commentary in this publication on the challenges we district leaders face when it comes to the research-based findings on reading instruction. We all have unfinished learning, but the research is clear. Reading isn't just about decoding words.

Another critical element here is the central role that background knowledge plays in reading comprehension, which was demonstrated as early as 1988 by Lauren Leslie and Donna R. Recht's seminal baseball study: If we want students to actually understand the words they are decoding, they must build a critical mass of background knowledge in order to provide context and meaning to what they are reading.

The hard part about reading instruction isn't even deciding how to take action. Putting the research about reading in-



—Getty

struction into practice has been simplified in recent years by the abundance of research-aligned curricula. Finding a suitable curriculum is now as easy as scrolling through EdReports.org and reading summaries of the "all green" options that signify positive standards alignment, usability, and quality. In my school district in Tennessee, we provided teachers with a few curricula options from this list, gathered feedback during a pilot period, and made a decision about what to use.

The hard part is not about the funding required to make these changes, either. On average, my district spent approximately $50 per student to replace all of our English/language arts curricula in every grade, kindergarten through 12th.

For school and district leaders, the hard part about reading instruction is leading a highly effective implementation and sticking to the plan long enough for the work to have a meaningful impact. Putting a new curriculum in a teacher's hand won't get the job done. He or she needs support in order to teach it well. Teachers also need time to learn how to communicate the material effectively to students, and students need time to develop academically while learning it. But "time" is not a welcomed word in education.

The good news is that students respond quickly when teachers deliver systematic phonics instruction. Students in the early grades can more readily recognize letters and letter sounds, segmenting, and blending if they are receiving systematic phonics instruction. (David Liben's "Why a Structured Phonics Program is Effective" is a great summary on this topic.)

In my district's first year of implementation with our chosen curriculum (Core Knowledge's Skills Strand), we doubled the number of kindergarten students who scored above average on a phonics screener. This progress was mirrored by significant gains in the oral reading fluency of our 1st graders. Great instruction with strong materials can close skills gaps for our youngest students in a relatively short amount of time.

While students are making strides with their decoding skills, they must also be building the background knowledge on a wide array of topics needed to understand what they read. Instead of learning to read and then reading to learn, students can and should do both at the same time.

Many of the best curriculum options are structured this way. Embedding important historical figures and events, science concepts, exposure to a diverse array of cultures, and well-known fables and folktales in a coherent sequence within individual grades and across grade levels allows students to gradually connect meaning to otherwise unfamiliar topics as they read. But the key word here is "gradually."

Vocabulary is like a tiny snowball at the top of a hill. If you can guide it down the right path, it will gradually grow bigger on its own. It just takes a plan and patience.

As a leader, developing this kind of vision for reading instruction requires the constant switching between a long-term and a short-term view. Seeing gains in foundational reading skills happens early and often. On the other hand, navigating a multi-year process of building students' background knowledge is a more demanding journey. But the sooner we can all agree that there isn't a bright and shiny program that will save us tomorrow, the sooner we can do right by our students by focusing on what will have the biggest impact in the long run.

If you pursue this course of action, your 3rd grade reading scores will be great, right? Maybe. It is possible to see signs of progress. After a year, the state of Tennessee defined the growth of our district's 3rd grade students as "above expectations." But deeper reading proficiency improves at a slow pace.

The knowledge-building required to turn proficient decoders into proficient readers is a long haul, especially for students living in poverty. Comprehension is dependent on understanding the vocabulary involved in any given reading topic, but the topics on high-stakes reading assessments rarely align with the exact topics that students read about in the classroom.

So how do we fix it? We rely on the research about systematic phonics instruction, and we keep students reading books, articles, and literature embedded in a coherent path of topics designed to build their background knowledge. It can be frustrating that there is no way to fast track knowledge-building. You just have to trust the process, and take it day by day.

The education field is notorious for giving up when the results aren't immediate. But we should stick it out on this one and listen to the research on reading instruction. The rewards will come. ■

Jared Myracle is the chief academic officer at Jackson-Madison County public schools in Tennessee.

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