Will the Science of Reading Catch On in Teacher Prep?

Teachers often leave preservice without clarity on cognitive science

By Madeline Will

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Mary Sacchetti spent six years and tens of thousands of dollars preparing to become a special education teacher and then a reading specialist.

But even after she earned her master's degree from a highly ranked university, she still felt like she didn't have the necessary knowledge and skills to teach all students how to read. It wasn't until her Philadelphia charter school paid for Sacchetti to earn certification through an explicit, systematic phonics program that she finally understood the evidence-based strategies for teaching early reading.

"That's when I was like, 'Oh my God, I did not know any of this,' " said Sacchetti, who has since left education to stay at home with her children. "The fact that it's systematic, the fact that there are rules—I just felt so empowered."

"Now I feel like I could take a student, and I could teach them how to read, whereas before, I felt like I was just reading with kids," she continued. "How many students are not learning how to read because teachers are not teaching them to read? Not with bad intentions, but because they don't know."

After all, many teachers likely did not learn the cognitive science behind reading in their teacher preparation programs. While decades of research have shown that teaching young students how to crack the code of written language through systematic phonics is the most reliable way to make sure that they learn how to read words, that approach to reading has not made its way into many preservice programs.

For many decades, teacher educators were divided into two camps: those who favored whole language, characterized by the idea that reading is a natural process gained through exposure to authentic texts, and those who believed in systematic phonics instruction, which is the explicit teaching of sound-letter relationships. The so-called "reading wars" led to the convening of a National Reading Panel in 2000, which found evidence that explicit phonics lessons help kids become better readers. The review did not find the same about whole language.

The National Reading Panel named five essential components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. To be a reader, a student must learn how to decode words and also comprehend them.

"A fundamental piece of whole language is that reading is natural," said Amy Murdoch, an associate professor and the director of the reading science program at Mount St. Joseph University in Cincinnati. "And what the science shows is that is absolutely not true. Reading is something humans invented, and it's not at all natural."

Over the years, whole language has fallen out of vogue, and an approach known as balanced literacy has gained traction—in fact, nearly 70 percent of teachers say that's their philosophy, according to an Education Week Research Center survey. Proponents say balanced literacy combines explicit instruction, guided practice, and independent reading and writing. Critics, however, say that balanced literacy is just whole language rebranded, with a bit of phonics sprinkled in.

"Who wouldn't want balance?" Murdoch said. "Many people look to balanced literacy as the answer. But what balanced literacy typically is, is not systematic, explicit instruction."

Even so, balanced literacy dominates the nation's colleges of education. In an Education Week Research Center survey of more than 530 professors of reading instruction, just 22 percent said their philosophy of teaching early reading centered on explicit, systematic phonics with comprehension as a separate focus. Most—57 percent—said they ascribed to a balanced literacy philosophy. Only 4 percent said that their philosophy was whole language.

Of course, balanced literacy can be defined in many different ways. Professors gave definitions that ranged from basing instruction in all five components of reading and giving equal focus to decoding and meaning-making to immersing students in authentic texts with phonics on the side.
Nearly a fifth of professors said they agree or strongly agree with the idea that most students will learn to read on their own if given the right books and time to read them. And while most professors correctly identified the five essential components of reading, phonics was the least known—87 percent of professors picked that, compared to the 95 percent of professors who picked comprehension. Twelve percent of professors incorrectly picked exposure to authentic and meaningful texts.

Like Sacchetti, many teachers have said they feel like they were cheated out of learning how to teach reading from their preparation programs. A common refrain from graduate students, Murdoch said, has been, "You've told me everything I learned in undergrad is wrong, and I've been teaching reading the wrong way. Why didn't I learn this in undergrad?"

**A 'Lockstep' Approach?**

Professors who are skeptical of systematic phonics instruction told Education Week that phonics is necessary—but they don't want it to be done in isolation, without opportunities for students to make meaning of the words they're learning to read. And they worry a systematic approach can make it harder for teachers to differentiate instruction for advanced readers.

"Yes, readers do need to know how to decode words. That's not even a question," said Mary Lose, a professor of reading and language arts at Oakland University in Rochester, Mich. "Yet this label [of systematic phonics] is least aligned with my philosophy because it suggests a lockstep approach to phonics teaching and learning that doesn't take into account what each child already knows, and it proposes a one-size-fits-all approach to supporting a child's decoding skills."

The Education Week Research Center survey found that 55 percent of professors said they put "a lot" of emphasis on phonics in their courses; 36 percent said "some," and 5 percent said "a little."

More than half of professors said they thought students could understand unfamiliar words they see on the page even if they don't have a good grasp of phonics. Melanie Keel, an assistant education professor at Wingate University in North Carolina, said many students can learn to read with minimal phonics, or when phonics is incorporated through a balanced literacy approach.

"When we say everyone has to do it this way, when we have kids that already know it and it just comes more naturally for them, then we're doing them a disservice," she said. "We can push them in other ways to help them grow as readers in areas that they need, more than one-size-fits-all, 'this is how we're going to do our whole class.' I think it really comes down to what the children in your class need and knowing your children as readers."

Even so, Murdoch said frequent assessments are key to a systematic, explicit approach to reading instruction.

"We want to understand exactly where a child is and match the instruction where they are," she said.

According to research from the International Dyslexia Association, more than a third of students can learn to read with broad instruction that includes just a bit of phonics. A much smaller percentage—anywhere from 1 percent to 7 percent, depending on the estimate—will learn to read no matter what, by figuring out how to decode words on their own.

But the rest do need systematic phonics to be proficient readers, and all students could benefit from it, experts say.

Otherwise, teachers might not realize that some students are struggling to read and instead are relying on pictures and context clues to get by, said Deborah Reed, the director of the Iowa Reading Research Center and an associate education professor at the University of Iowa.

"If you start with the assumption that really, everyone should be fine, and [you] should focus on the love of reading and comprehension skills, then you risk children failing through the cracks," she said. "If you start from the bottom up [with systematic phonics], you can rule out kids who don't..."
need certain instruction."

You Don't Know What You Don't Know

Proponents of systematic phonics instruction say the science is clear. So, why haven't teacher educators gotten on board?

To start, academic freedom makes it so the approach to instruction is left up to individual professors—the dean can't mandate that anyone teaches phonics.

Also, from John Dewey on down, many of the most influential and revered theorists in teacher education have urged an exploratory, project-oriented way of learning, in which students learn principles intuitively. But a systematic, explicit phonics approach typically requires direct instruction and modeling. That's the opposite of what many education professors tell their students is good teaching.

The debates on reading are also highly emotional and polarizing. Even the term "science of reading" can rub people the wrong way, said P. David Pearson, an emeritus professor and the former dean of the University of California, Berkeley's Graduate School of Education, who considers himself in the "radical middle" between the whole language and the phonics camps.

"As if the other research that's done that shows that vocabulary is important, that comprehension is important, that rich talk about text is important—that those aren't scientific," he said. "Well, they're just as scientific as the research that shows that phonics is important. I resent their appropriating the mantle of science."

For many professors, though, the cognitive research on reading is unfamiliar. A 2012 study from researchers at Texas A&M University and elsewhere deemed this the Peter Effect in preparing reading teachers, after the Bible verse in which the Apostle Peter told a beggar asking for money that he could not give what he himself did not have.

Researchers found that the teacher educators who participated in a training on research-based reading instruction had a significantly better understanding of the cognitive science than those who had not. Notably, the students of the professors who went through the training not only performed better on the reading assessment than their peers—they also scored higher than the teacher educators who hadn't gone through the program.

"If teacher educators do become more knowledgeable themselves, then that carries over to the teacher," said Emily Cantrell, a co-author of the study and a clinical assistant professor of reading and language arts education at Texas A&M University.

Slow-Moving Change

That's why some proponents of systematic, explicit phonics instruction have focused their efforts at the top—training the professors of reading. For example, Murdoch, the Mount St. Joseph professor, said her university is starting a doctoral program focused on the science of reading. It will be one of just a few in the country.

After all, for professors who have spent decades teaching reading instruction a certain way and publishing research, making such a significant change in their practice is hard, those in the field say. They might feel like their reputations are on the line, and such a change requires grappling with the realization that they may have given scores of teacher candidates inadequate training.

"If you've been teaching something for 10, 20, or 30 years, to go back and say, 'Oh, I've been wrong'—that's really hard for somebody to do," Cantrell said.

Transforming the practice of teacher educators has been the focus of Kelly Butler, the chief executive officer of the Barksdale Reading Institute, a nonprofit working to improve the quality of reading education in Mississippi, for nearly two decades now.

In 2003, Butler reviewed eight public teacher-preparation programs in Mississippi to see how they prepared candidates in early literacy instruction. The study found that preservice teachers were getting an average of 20 minutes of phonics instruction over the course of two years in their program, and not all five components of reading were being taught in every program. As a result, the state education department later mandated that every undergraduate elementary education program in Mississippi require two courses in early literacy that cover the five essential components of reading.

Butler published a similar review in 2016 of both the public and private teacher-prep programs in the state, and found that while a lot of progress has been made, many professors still could not explain the scientific principles of reading.
Mississippi teacher Casey Watts cries during a training session after realizing how difficult it is for some students to learn to read.
—Cheryl Gerber for Education Week

Now, the Barksdale Reading Institute has developed a professional growth model for professors of early literacy across Mississippi. The program is "designed to create safe place for faculty to say, 'Nobody ever taught me this either,'" Butler said.

Initially, about 45 professors from across the state signed up to go through a research-based, commercial program for teaching literacy known as LETRS, or the Language Essentials for Teachers of Reading and Spelling. Of those, about 35 professors completed the faculty-only training.

Then, the Barksdale Institute hosted seminars for the faculty who went through the training to discuss the content of LETRS and learn how to model direct, explicit instruction to preservice candidates. The studies had found that there was virtually no modeling occurring in reading courses, Butler said. (Nationally, 86 percent of professors said they model how to teach phonics in their reading courses, according to the Education Week Research Center survey.)

Of the initial 45 Mississippi professors who signed up, just 28 consistently came to the seminars. And a third of the faculty, when quizzed on the content of the LETRS training, continue to miss basic questions, Butler said.

There have been some bright spots. One of the professors who has transformed her approach to teaching reading is Billie Tingle, an assistant teaching professor at the University of Southern Mississippi. She went through the training and the seminars hosted by the Barksdale Institute, and has since overhauled everything in her early literacy classes that promoted balanced literacy—her PowerPoints, her lectures, her assigned textbooks.

"The past couple years, I've really focused on being a learner and making that my priority and hopefully taking [the science of reading] into my classroom, so I can help just one student that will take this and promote it in one classroom, in one school, in one state," Tingle said.

Now, Butler is working with the state superintendent to enact a policy that would require all faculty who teach early literacy courses in Mississippi to be trained in the science of reading and pass a test. However, they're experiencing pushback: The deans of teacher preparation programs in the state have written a unanimous letter saying they're not opposed to LETRS training for faculty—but they don't want to test people who already hold a PhD.

If the state board of education does not pass this policy, Butler said she's prepared to appeal to state legislators, and urge them to put into law that professors need to know the science of reading—"or the legislature is forever going to spend $15 million a year to retrain their teachers, which makes no sense."

'A Trend You Cannot Ignore'

Many proponents of systematic phonics are hopeful that the tide is slowly turning—that as states pass legislation requiring teachers to be trained in the science of reading, and as school districts begin to consider teachers' knowledge of brain-based reading principles when hiring, colleges of education will be forced to get on board.

"The universities need to be competitive," said Nancy Scharff, a consultant on instructional strategies for the Philadelphia-based campaign Read by 4th. "If you don't have an awakening and say, 'Oh, I see the light, I now love the science,' that's OK. If you embrace the science because it feels like a trend you cannot ignore, that's OK, too."

The mission of Read by 4th is, as the name suggests, to make sure all students in Philadelphia can read on grade level by the time they enter 4th grade. Since 2014, the campaign has been helping colleges of education in the city get accredited by the International Dyslexia Association under its Knowledge and Practice Standards for teachers of reading. Those standards call for systematic, explicit instruction in reading.
So far, four universities in the city have programs that are accredited. By the end of the year, Scharff said, three additional programs might gain accreditation.

Change is slow, she said, but it’s aided by the fact that William Hite, the superintendent of the Philadelphia school district, has said he wants to hire teachers who graduated from IDA-accredited programs.

State policy is another motivator. In Arkansas, for example, every elementary and special education teacher must be proficient in the scientific research on reading by 2021, per a state law passed in 2017 that has caused some colleges of education to change their instruction.

And in Ohio, the state education department has given grants to seven colleges of education to incorporate scientific reading principles in their programs. Murdoch, the Mount St. Joseph reading science director, and her colleagues have drafted model syllabi for professors who want to revamp their courses.

"I think for the first time in my career, I have real glimmers of hope that in higher ed, there may be room to change," Murdoch said. "We still have a long way to go—but I do see some hope."

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