Chapter 1. How Embracing All of the Science of Reading Can Get Us Past the Old Debates

In November 2021, in a high-poverty school in rural South Carolina, a teacher named Andrea Yon could see the effects of the ongoing COVID-19 pandemic and resulting school closures on her 7th and 8th graders. In previous years, she told *The Hechinger Report*, some of her students had been reading at a 5th- or 6th-grade level. Now, she said, she saw them reading at a 3rd- or 4th-grade level (Barshay et al., 2021).

That wasn't the only problem. In previous years, students would read whatever they wanted for 20 minutes during silent reading time. But now, Yon told a reporter, "they're looking up after three to five minutes."

Yon's experience was a microcosm of trends across the country. In the wake of COVID-19 and the remote or hybrid learning systems it brought to many schools, students clearly lost ground academically. By the spring of 2023, according to one analysis, students were finally beginning to catch up to where they should have been (Fahle et al., 2024). For the most part, though, that wasn't happening for students from historically disadvantaged groups—students like Yon's. As a result, the gap between them and their more advantaged peers was widening (Golden et al., 2023). At the same time, the pandemic sparked an absenteeism crisis. Studies done in 2023 found that the proportion of students considered chronically absent—that is, missing at least 10 percent of school time—had risen by about 90 percent (Sparks, 2024).

Whether they're at home or at school, most American adolescents—like those in Yon's classroom who looked up from their books after a few minutes—aren't doing much voluntary independent reading. In response to a question on the 2023 National Assessment of Educational Progress

(NAEP), only 14 percent of 13-year-olds said they read for pleasure "almost every day"—a new low and a figure that was about half of what it had been in 2012. The percentage who said they "never or hardly ever" read for pleasure, meanwhile, had increased to 31 percent. In 2012, only 22 percent had been in that category. Looking back to 1984, the change is even more striking. That year, 35 percent of students said they read for fun almost every day, and only 8 percent said they "never or hardly ever" did.

It's not just that kids are missing out on a potential source of enjoyment. Reading for pleasure, especially beginning in the early years, is associated with better performance on cognitive tests, higher academic achievement, and better mental health (Sun et al., 2024).

The prevalence of screens surely has something to do with the decline in recreational reading, but it's likely that the pandemic contributed as well. In 2023, one publishing executive told *The Washington Post* that students' post-pandemic lack of interest in reading had led schools to demand "hyper-engaging books" in a desperate attempt to get kids to read *something*: "Our customers were saying, 'Our kids aren't reading, we'll bring in any type of literature that gets kids to read'" (Natanson, 2023, para. 26).

It's clear that the pandemic's effects on literacy—and therefore on learning—could be long-lasting, perhaps permanent, and the students who needed the most support before the pandemic are also those who need the most help now. What can teachers and schools do to avert this looming crisis and prevent inequities in our society from deepening?

Sticking with a Failed Approach Isn't the Answer

One frequently heard prescription is to increase instructional time—either by extending the school day or year or, more commonly, through tutoring. This approach is premised on the idea that what schools were doing before

the pandemic was working, so to catch students up, we just need to give them more of it.

The truth is that at least when it comes to literacy, what we were doing before *wasn't* working. NAEP reading scores were essentially stagnant between 1998 and 2018, with only about a third of 4th graders and 8th graders testing at the proficient level or above. In 2019, just before the pandemic, scores actually fell, particularly among 8th graders. "We've never seen a significant decline like this before," Peggy Carr, commissioner of the National Center for Education Statistics, said at the time (Barshay et al., 2021, para. 25).

In addition, gaps between student groups weren't getting any narrower. Between 2009 and 2017, the "distressingly wide" ethnic, racial, and socioeconomic gaps on the NAEP barely budged, according to researchers at the Brookings Institution—and, they wrote, "little in the recent trends suggests [they] will close in the near future" (Hansen et al., 2018, para. 27). Stanford sociologist Sean Reardon (2011), looking at a wider and possibly more accurate set of test data, concluded that between 1960 and 2010, the gap between students from the wealthiest and poorest families widened dramatically.

Peggy Carr gave a similarly bleak assessment of the NAEP data in 2019. "Over the past decade," she was quoted as saying, "there has been no progress in either mathematics or reading performance, and the lowest performing students are doing worse. In fact, over the long term in reading, the lowest performing students—those readers who struggle the most—have made no progress from the first NAEP administration almost 30 years ago" (Barshay, 2019, para. 3).

The scores for American students on international tests are no more encouraging. On the first post-pandemic administration of a test called the PISA, given to 15-year-olds in developed countries, American students

moved up in the rankings for math and reading. However, in reading, that was only because their performance held steady while that of other countries declined.

In 2018, about a fifth of American 15-year-olds scored so low that it appeared they weren't reading at the level expected of a 10-year-old, an official overseeing the test told *The New York Times*. "It's really time to rethink the entire drift of policy reform because it just isn't working," commented an American testing expert (Goldstein, 2019, para. 5). Apparently, no one was listening.

More instructional time can help if schools use it to do something that works—but there's no reason to think it will do much good if it's devoted to more of the same approach that hasn't produced results in the past.

Low Reading Skills Damage Lives

Literacy problems don't just depress test scores. They also deeply affect the trajectory of people's lives, especially at the lower end of the socioeconomic spectrum. It's estimated that one in five American adults—48 million people—have low levels of literacy. That means they have trouble doing things like comparing and contrasting or paraphrasing information and making low-level inferences (National Center for Education Statistics, 2022). Of those, about 8.4 million are functionally illiterate, meaning they can't understand written sentences, locate a single piece of information in a brief text, or complete simple forms (National Center for Education Statistics, 2019).

These individuals aren't necessarily immigrants whose first language isn't English, members of historically disadvantaged groups, or high school dropouts. Two-thirds of Americans with low literacy skills are U.S.-born—and the largest percentage, just over a third, are white (National Center for Education Statistics, 2019). It's not clear how many high school graduates

are functionally illiterate—because we don't test for that and generally don't even talk about it—but some certainly are. During a 2017 high school graduation scandal in Washington, DC, one teacher told the local NPR affiliate that he'd taught 12th graders who "couldn't read or write"—and that it wasn't just one or two students (McGee, 2017, para. 9).

Students who don't learn how to read often end up on the road to violence and prison. An antiviolence activist in Washington, DC, who teaches life-skills classes to youngsters told *The Washington Post* that the classes revealed a hidden problem: illiteracy (Milloy, 2022). Fifty-two percent of individuals incarcerated in U.S. prisons have low levels of literacy (Rampey et al., 2016).

A school district leader in Texas, LaTonya Goffney, told me about one of her former students, Corey. As an 8th-grade English teacher, Goffney had managed to help Corey pass the state reading test by teaching him test-taking strategies like matching the words in questions with key words in a reading passage—but the fact remained that Corey hadn't learned to read.

"He was one of my first students to end up dying," Goffney said wistfully. "Because he made life choices that ended up in gang activity and some other things, and he couldn't graduate with choices and opportunities. Because he couldn't read, you know."

Many of those who can read at a basic level still have trouble understanding more complex texts. In 2019, 63 percent of 12th graders tested below the proficient level on the NAEP, meaning they struggled to show an overall understanding of grade-appropriate text, including the ability to make inferences and draw conclusions based on it. Among students from low-income families, 77 percent tested below proficient. For Black students, the figure was 83 percent (Nation's Report Card, 2022).

Literacy issues are often the can that gets kicked down the road. In 2001, NPR reported that at a flagship campus of the University of Tennessee,

some students were unable to write a coherent sentence. At a nearby community college, many students wrote at a 5th- or 6th-grade level. At a local high school, teachers conceded that they sometimes passed students on because they simply showed up and worked hard. The focus was on enabling students to graduate rather than ensuring they were fully literate. "Having a high school diploma does not mean that you can read and write," one administrator at the school conceded (Sanchez, 2001). There's little reason to believe the situation has improved since then.

It's not just students from historically disadvantaged groups who struggle with complex text. A Harvard English professor told *The New Yorker* in 2023 that the last time she had taught *The Scarlet Letter*, she found that her students were struggling to understand the sentences. They were "having trouble identifying the subject and the verb," she said (Heller, 2023, para. 17). In addition, a 2024 report from *The Chronicle of Higher Education* quoted numerous college professors who said their students aren't equipped to do the assigned reading and writing. One professor said that she had long followed the mantra "meet your students where they are"; however, she told the reporter, "If she meets them any further down, she'll feel like a cruise director organizing games of shuffleboard" (McMurtrie, 2024, para. 4).

Maybe not everyone needs to be able to understand *The Scarlet Letter* or a college textbook, but everyone should be able to understand an article in a newspaper, an apartment lease, or a job training manual—and many American adults read at levels that make it a struggle to do that. Just as with more profound illiteracy, these reading problems can have significant real-life consequences.

In one poverty-stricken Mississippi mill town, for example, dozens of local residents are employed to cut lumber in the local mill, but more highly paid supervisors—who need to be able to understand machine guides and safety manuals—have to be recruited from elsewhere (Waldman et al., 2022). Even worse, it's estimated that about 46 percent of American adults

can't understand the labels on prescription drugs, potentially leading to fatalities (Jacobson, 2023).

Clearly, something important was missing from reading instruction long before the pandemic. What was it? And can we add that key ingredient now, when it's needed more than ever?

Balanced Literacy and Its Critics

Over the past several years, as scores on reading tests have started to decline and gaps between student groups have widened, another trend has emerged. Across the country, educators, parents, journalists, and state officials have concluded that the standard approach to teaching children to read *individual words* is deeply flawed.

Commentators and journalists rarely mention that issue when analyzing dismal scores on reading tests, but poor decoding ability on the part of some students is certainly a factor. The tests aim to measure comprehension rather than decoding, but if students can't decode the test passages, they're almost certainly going to score low (perhaps with a few exceptions, such as Goffney's student Corey).

One study of 4th-grade NAEP reading scores found that students in the "below basic" category—34 percent of all students—are much more likely to have poor oral reading fluency and word-reading skills than those who score higher (White et al., 2021). Another study focusing on students above 4th grade found that if students' decoding ability fell below a certain threshold, those students were "extremely unlikely [to] make significant progress in reading comprehension in the following years" (Wang et al., 2018, p. 399).

Nevertheless, many educators and reading experts have resisted calls for a different approach to decoding instruction. The controversy has led to what

some have labeled a resurgence of the so-called reading wars, a term first applied to the heated debate over reading in the 1980s and 1990s. On one side were advocates of "whole language," which rested on the assumption that if children were surrounded with good literature, they would learn to read naturally.

One prominent whole-language advocate, education professor Ken Goodman, called reading a "psycholinguistic guessing game." The goal, he said, was not for children to read individual words accurately but rather to make sense of a text. Goodman argued that it's not really a problem if a child reads the word *horse* as "pony," because that child is still understanding the meaning of the story (Hanford, 2019).

Whole-language proponents were able to point to scientific studies going back many years, showing that adult readers grasp whole words more quickly than they do individual letters. This meant, they argued, that expert readers didn't rely on phonics, so phonics drills were unnecessary. In addition, these proponents warned, such drills would "kill" children's interest in reading.

On the other side of the controversy were reading researchers and psychologists who relied on many studies showing that phonics instruction leads to better results, especially for children who don't have much exposure to books at home. Expert readers do grasp whole words quickly, they acknowledged, but that's not how children *learn* to read. This argument began to gain acceptance among the general public, and by 1997, 33 states had enacted legislation stressing the importance of teaching phonics (Kim, 2008).

Around that time, the concept of balanced reading instruction emerged in an attempt to calm the waters. In theory, the new approach combined whole language's emphasis on authentic, high-quality children's literature—as opposed to the often insipid passages in reading textbooks—with explicit

instruction in phonics. But in 2000, literacy expert and phonics advocate Louisa Moats sounded an alarm. "Many who pledge allegiance to balanced reading continue to misunderstand reading development and to deliver poorly conceived, ineffective instruction," she wrote (p. vii).

That same year, the federally convened National Reading Panel (NRP) produced a voluminous review of research in an attempt to settle the matter. The panel concluded that the evidence did indeed support systematic instruction in phonics and four other aspects of literacy: phonemic awareness (the ability to hear and manipulate the individual sounds in words), fluency, vocabulary, and comprehension.

In the wake of the NRP's report, the balanced reading movement expanded its approach to embrace the panel's findings—or at least it appeared to. In 2007, Moats again tried to raise a red flag. "Rather than fight the five components [identified by the National Reading Panel]," she wrote, "trendy reading gurus have placed them under the banner of 'balanced instruction' while continuing to promote the same misconceived and disproved practices of yore" (Moats, 2007, p. 13).

That criticism gained little traction, and, just like whole language before it, what became known as balanced literacy swept the nation. In a 2020 survey by *Education Week*, 72 percent of reading teachers said their schools used balanced literacy, and 57 percent of postsecondary instructors said it was their "philosophy of teaching early reading." Only 22 percent of each group subscribed to explicit, systematic instruction in phonics (EdWeek Research Center, 2020).

At the same time, the survey found little agreement on what balanced literacy was. More than half of reading teachers, for example, defined it to include "phonics," and 70 percent said they placed "a lot" of emphasis on phonics. The typical teacher spent 31 minutes a day on phonics, the survey found. How was it possible to reconcile those responses with the fact that

almost 80 percent rejected the idea of explicit, systematic instruction in phonics?

The apparent answer came in a series of audio documentaries from journalist Emily Hanford, beginning in 2018, that echoed the complaints Moats had raised years before. Hanford (2019) explained that balanced literacy teachers are guided to believe that it's generally sufficient to explain phonics concepts as they arise—for instance, if a student is having trouble decoding a particular word—rather than progressing systematically through a prescribed sequence of phonics patterns. They're also trained to encourage students to guess at unfamiliar words, using pictures or context clues.

Another feature of balanced literacy is that, in order to expose students to authentic children's literature, the approach has them practice their reading skills on "leveled" trade books rather than passages in a textbook. Students are assigned individual reading levels based on tests that purport to measure both decoding and comprehension ability. They're then directed to baskets or shelves of books that match their level.

Hanford and other science of reading advocates argue that these methods leave many students unable to decode words fluently. When instruction isn't systematic, certain phonics patterns get left out or aren't adequately reinforced—and because it's easier to guess than to sound out a word, many children will choose that option if offered it, leaving them unprepared to read texts at higher grade levels, when pictures and context aren't always helpful. In addition, leveled books are a problem, these advocates say, because the words they use aren't tied to the phonics patterns children have been taught. That means kids don't get the opportunity to practice recognizing those patterns. They also may be unable to decode many of the words in a book deemed to be at their level, and they'll have to resort to guessing.

Balanced Literacy Versus Science of Reading: The Latest "War"?

The recent debate over reading isn't as clear-cut as the reading wars of the past. Rather than one side that opposes virtually any phonics and another that advocates for it, both sides say they're in favor of teaching phonics. However, they have different definitions of what that instruction should look like, and the disagreements between the two sides have been just as heated as they were 30 years ago.

Those who now advocate for systematic phonics instruction have embraced the term *science of reading*. The science they point to is largely the same data that phonics proponents relied on in the 1990s, along with more recent brain imaging studies showing that learning to read is not a natural process. Largely thanks to Hanford's compelling audio journalism, the movement has had an enormous influence.

Many reading teachers are up in arms about what they now realize were deficiencies in their training. A Facebook group called "Science of Reading—What I Should Have Learned in College," founded in 2019, had drawn more than 234,000 members by April 2024. Parents of children who suffered from inadequate decoding instruction have also come forward to tell their stories and push for change.

The National Reading Panel's 2000 report, which sat more or less dormant for years, is now often cited to define the science of reading. An infographic based on the panel's report is frequently projected at conferences to illustrate the "five pillars" of early literacy.

Two other infographics, also created more than 20 years ago, have recently become ubiquitous. The "simple view of reading" takes the form of an equation: word recognition times language comprehension equals reading comprehension. If you're missing one factor or the other, the result is zero.

Another image, called the reading rope, shows two bundles of strands, one labeled Language Comprehension and the other Word Recognition, that gradually entwine to create Skilled Reading.

In the years since Hanford's first documentary came out, virtually every state has passed legislation or adopted policies aimed at improving reading instruction (Hollingsworth, 2023). A growing number of states are requiring practicing teachers to enroll in programs that introduce them to the evidence on reading, with a popular option being the program created by Louisa Moats, LETRS. Some states have even banned "three cueing," the method that encourages children to use pictures or context to guess at words (Schwartz, 2023a).

At the same time, the balanced literacy movement has pushed back vigorously. In 2019, Lucy Calkins—founder of the Teachers College Readers and Writers Project and a prime target of Hanford's reporting—issued a statement called "No One Gets to Own the Term 'the Science of Reading.'" After Hanford's podcast series *Sold a Story* came out in 2022, 58 educators signed a letter to the editor of *The Hechinger Report* titled "A Call for Rejecting the Newest Reading Wars" (Letter to the Editor, 2022). In 2023, three professors of education—two of them retired—penned a column for *The Washington Post* titled "On the Latest Obsession with Phonics" (Strauss, 2023). And in 2024, two distinguished emeritus education professors, Robert Tierney and P. David Pearson, produced a 188-page monograph called "Fact-Checking the Science of Reading." It decried a "self-assured attitude among those carrying the SoR flag" and accused Hanford of misinterpreting the research (Tierney & Pearson, 2024, p. x).

One line of argument has been that there really *is* no argument. Everyone agrees that children need to learn phonics, balanced literacy defenders say, but science of reading advocates maintain that's *all* they need to learn in order to become proficient readers.

"It is irresponsible to reduce the teaching of reading to phonics instruction and nothing more," the letter to the editor of *The Hechinger Report* complained (Letter to the Editor, 2022, para. 3). In her 2019 statement, Calkins referred to "the phonics-centric people who are calling themselves 'the science of reading'" (p. 1). The three education professors writing in the *Post* charged that science of reading proponents have concluded that "the sole solution to reading difficulties is intensive phonics instruction for all readers" (Strauss, 2023, para. 19). Many of the criticisms in Tierney and Pearson's monograph rest on a similar assumption.

Calkins and others have also raised the specter of a short-lived federal program called Reading First, which pumped billions of dollars into schools in the early 2000s to improve reading instruction. The three education professors writing in the *Post* claimed the program trained teachers to "deliver 'scientific' reading instruction that included a numbing 1.5 to 3 hours of phonics instruction each day" (Strauss, 2023, para. 12)—and failed to boost reading comprehension scores. Calkins (2019) called Reading First a "set of top-down mandates for intensive phonics instruction that resembled what the science of reading people today are supporting" (p. 5).

An undercurrent of this criticism is the long-standing idea that phonics instruction amounts to "drill and kill." If children are practicing phonics patterns for hours every day, how will they ever discover the pleasures of reading? How will they become enthusiastic lifelong readers of the kind that are becoming all too rare, especially in the wake of the pandemic?

Hanford and other science of reading advocates respond that they're *not* reducing reading instruction to phonics. They have always made it clear, they say, that other factors are essential as well. In fact, the two sides often list the *same* other factors, drawn from the National Reading Panel report. The science of reading doesn't necessarily call for more time on phonics—and certainly not three solid hours of it. Most experts recommend just 20 to 30 minutes a day in the early grades for the majority of children. Rather, say

advocates, teachers need to provide *more effective* phonics instruction. They also point out that kids are unlikely to learn to love reading if decoding words remains a struggle.

Both Camps Overlook a Fundamental Problem

I'm convinced that science of reading proponents have the better argument on phonics instruction. It's undeniable that teachers have generally received inadequate training in teaching foundational reading skills, and it's clear that many students haven't become fluent decoders as a result. The science of reading movement deserves huge credit for shining a spotlight on a problem that has persisted, in one guise or another, for far too long—and for spurring much-needed change.

Still, both camps are overlooking a fundamental problem with the standard approach to reading instruction—not only in balanced literacy classrooms but in almost all others as well. Even if we "fix" phonics instruction, that other problem will still prevent many students from becoming fully literate.

The Missing Ingredient: Knowledge

Consider this: A 2023 study of 42 states that had adopted "early literacy policies," all of them focused on improving decoding instruction, found that the policies generally boosted scores on state reading tests in 3rd to 5th grade. But as those students moved to higher grade levels, the boost they'd gotten disappeared. "Adopting *any* early literacy policy improves elementary students' reading achievement on high-stakes assessments, but those effects fade out by middle school" (Northern, 2023, para. 4).

Why would that happen? It's not that students suddenly forget how to decode words after 5th grade. It's partly that reading passages start to use more multisyllabic words, which are harder to decode. Another key reason,

however, is that as grades go up, decoding ability isn't enough to ensure success—either on a reading test or in school. Students also need the ability to comprehend text that is becoming increasingly complex (Catts et al., 2006).

It's perfectly possible to decode text you can't understand. If you've studied another language, such as Spanish, you may well have experienced that phenomenon. The evidence on fadeout suggests this is what's happening at higher grade levels, and *that* suggests that something important has been missing—not only from our approach to decoding but also from our approach to reading *comprehension* in virtually all classrooms.

That missing ingredient is knowledge. As I'll explain in more detail later, there's lots of evidence that knowledge is the key factor in comprehension. That might be knowledge of the topic of a text, or it might be general academic knowledge and vocabulary, along with familiarity with the complex syntax of written language. However, for decades, comprehension instruction—whether teachers are following balanced literacy or something else—has conceived of comprehension as a set of free-floating skills and strategies, such as "making inferences" or "finding the main idea of a text." Teachers may spend 10 or 15 minutes modeling the skill of the week, using a text chosen not for its content but for how well it lends itself to demonstrating the skill. Then students practice that skill on texts at their individual reading levels—or try to.

As I've already mentioned, those leveled texts often include many words students haven't yet learned to decode. That's not the only problem. If the test used to determine students' reading levels is accurate, they'll already be familiar with almost all the vocabulary in the texts they're matched with, and they'll be able to understand the syntax used. How, then, will they acquire the new vocabulary, and the familiarity with more complex syntax, they'll need to understand more complex text?

There's another possibility as well. If the test *isn't* accurate, students may be matched with texts that include vocabulary with which they're *not* familiar, presenting a different problem. Without enough relevant background knowledge, they may not be able to understand some texts deemed to be at their level.

The Lack of Science Behind "Leveled Reading"

In fact, those tests often are *not* accurate. The now deeply entrenched system of leveled reading *appears* to be scientific, but—as reading expert Timothy Shanahan (2020) has detailed—there's actually little or no evidence behind it. And since the tests don't take account of a reader's background knowledge and vocabulary, a student's score may vary with the topic of a passage. Students who are familiar with the topic are likely to understand the passage better.

That's one reason different tests produce different results for the same student. In one study, 995 children were given four different standardized measures of reading comprehension typically used by psychologists. On average, only 43 percent of the children identified as poor readers by one test were placed in the same category by another. The same thing happened when the tests attempted to identify good readers (Keenan & Meenan, 2014).

Evidence has also emerged that casts doubt on the reliability of the similar tests routinely used in classrooms to assign students to their individual reading levels. The Benchmark Assessment System, which was created by Irene Fountas and Gay Su Pinnell and is estimated to be used in one-sixth of U.S. elementary schools, has been found to be accurate in distinguishing between proficient and struggling readers in only about 50 percent of cases (Peak, 2023).

"So I could buy this test, train all my teachers to give it, take about 30 minutes per kid," researcher Matthew Burns of the University of Florida told a reporter. "Or really just have a teacher flip a coin for every kid, and they'll get it right just as often" (Peak, 2023, para. 26). When it comes to identifying struggling readers accurately, the odds are even worse.

Teachers who administer the tests have had doubts about their validity, too. Abby Boruff, a 1st grade teacher in Des Moines, Iowa, told me she used to use a text called *Shopping* to determine her students' reading levels. The book was about a boy who helps his mother with her grocery shopping.

"Half of the food words in there," Boruff said, "if kids didn't have those in their vocabulary, they weren't going to read that book." Although Boruff had many students who were still learning English, they weren't the only ones who struggled with the vocabulary. Some students were unfamiliar with the term *shopping cart* because they used a different term for that item, and some kids didn't know the term *grocery store* because they called it a supermarket.

Boruff was also supposed to use *Shopping* to determine whether students had acquired the skill of making inferences. When the little boy gets a box of cookies at the end of the story, kids are supposed to be able to infer that it's his reward for helping with the shopping. "But I mean, if getting cookies at your house isn't special," Boruff said, "I'm not sure how you're going to infer that."

Some teachers have also had qualms about what looks suspiciously like tracking—something we've diligently tried to banish from high schools but still accept in elementary school because it's called leveled reading—and what that can do to children's self-esteem. Deloris Fowler, a Tennessee educator who used to teach 1st grade, told me that some of her 6-year-old students would ask her if they were always going to be "in the low group."

She remembers thinking, "This is just not a good culture to have where kids feel like they're trapped in that."

The Need to Build Knowledge Systematically

When I first started writing and speaking about the importance of knowledge to comprehension, I was surprised that some people told me it sounded like I was advocating for whole language. I resolved to make it as clear as possible that I was *also* advocating for systematic phonics instruction. Eventually, I came to realize why people might have come to that conclusion: because whole language emphasized "making meaning" from text, it was identified with a focus on comprehension.

Aside from the fact that you can't make meaning from text without being able to decode fluently, there's another crucial difference between what I'm advocating and what whole language stood for. I—and many others—are arguing in favor of an approach to literacy that systematically builds children's knowledge, ideally through a logically sequenced, content-rich curriculum. Whole language, as I understand it, favored having children just read whatever they wanted to. For most students, that isn't enough to ensure they acquire the knowledge and vocabulary they need to understand complex text, even if they're good decoders. Kids are unlikely to choose to read a book on a topic they know nothing about, even if they might find that topic interesting if someone introduced them to it. They're also unlikely to understand it. That can leave them with significant gaps in their knowledge of the world.

The Limits of Comprehension Skill and Strategy Instruction

Balanced literacy has preserved whole language's emphasis on student choice—up to a point. Students' choices are now limited to their individual

reading levels, and regardless of what book they choose from the basket that matches their level, they need to use the book to practice whatever comprehension skill or strategy the class is working on that week—or try to.

In the 1990s, whole language practitioners began to embrace the idea of teaching reading comprehension strategies, which they saw as fundamentally different from the "skills" in the reading textbooks they scorned. The textbooks asked students to do things like find the main idea of a text or compare and contrast. Strategies, on the other hand, are things such as asking yourself questions about a text as you read to monitor your comprehension.

Then the National Reading Panel put its imprimatur on strategy instruction, giving the idea a serious boost. Although many balanced literacy leaders and practitioners paid only lip service to the panel's recommendations on phonics, they embraced its endorsement of comprehension strategy instruction with enthusiasm.

By 2016, the proportion of teacher-preparation programs that included courses on comprehension skills and strategies stood at 75 percent; 10 years before, the figure had been only 15 percent (National Council on Teacher Quality, 2016). When I sat in on several ed school reading courses a few years ago, the only aspect of comprehension I heard discussed was strategies: before-reading strategies, during-reading strategies, and post-reading strategies.

There is, to be sure, lots of evidence for comprehension strategy instruction, but that evidence doesn't support the comprehension instruction practiced in most U.S. classrooms. For one thing, studies of strategy instruction generally last no more than about six weeks, but students spend hours every week practicing the same round of skills and strategies, year after year.

In addition, most of the skills covered are the same ones that have shown up in reading textbooks for decades—the same ones scorned by whole language practitioners, although they're now a key component of its intellectual descendant, balanced literacy. The National Reading Panel found no evidence to support teaching those skills. Plus, we spend much more time trying to teach comprehension skills than is justified by the evidence. Meta-analyses of studies show that a few hours of comprehension instruction yield as much benefit as several hundred hours (Willingham, 2023).

A more fundamental problem is that neither comprehension skills nor strategies will work unless the reader has enough relevant knowledge to apply them. Unlike the skill of riding a bike—or decoding words—comprehension skills and strategies aren't transferable.

Nevertheless, that's the assumption on which much of our education system is founded. The theory is that if students practice finding the main idea of a simple one-paragraph story about, say, a boy who learns not to be afraid of the chickens on his grandfather's farm, they'll be equipped years later to find the main idea of a textbook chapter on the New Deal or the Cold War.

Some students, of course, *will* be equipped to find the main idea of those more complex texts when they reach higher grade levels, but it's almost certainly not because they got more practice in finding the main idea. More likely, it's because they've had the opportunity to acquire the knowledge and the familiarity with complex syntax needed to understand more complex texts. Usually, they've been able to acquire those things outside school, because they come from more highly educated and affluent families.

Draining the Joy from Reading

One problem with a system that prioritizes supposedly abstract comprehension skills and strategies over building knowledge is that it ends up widening the gaps between more and less privileged students. Another is that it can make reading a pretty joyless process. Balanced literacy proponents fear that too much phonics will kill students' interest in reading, but they seem to have overlooked the fact that too much emphasis on practicing comprehension skills and strategies can have the same effect.

In balanced literacy and other classrooms, books or texts are seen largely as vehicles for skills practice rather than something to read as ends in themselves—for their content or for enjoyment. In one lesson cited by children's book author Katherine Marsh (2023), writing in *The Atlantic*, 3rd graders are asked to practice the skill (drawn from the Common Core State Standards) of identifying literal and nonliteral language in a story.

To do that, they're given a one-paragraph excerpt from one of the humorous books about Amelia Bedelia, the famously literal-minded fictional maid. The excerpt describes Amelia Bedelia's attempt to get the "spots" out of her employer's polka-dotted dress, using a pair of scissors. The paragraph is followed by questions like "What is a different way that Mrs. Rogers could have asked Amelia Bedelia to do what she wanted?"

As Marsh observes, it would have been a lot more fun for kids to read or listen to an entire Amelia Bedelia book—and they still could have learned about the difference between literal and nonliteral language. "The best way to present an abstract idea to kids," Marsh notes, "is by hooking them on a story" (para. 5).

Elementary reading textbooks have traditionally relied on brief excerpts from longer works, and the same thing is now happening at higher grade levels. The intention may be to cater to students' shorter attention spans or lower levels of reading ability, or—as *The New York Times* columnist Pamela Paul (2023) has argued—to conform to the Common Core requirement that

70 percent of the reading in high school consist of nonfiction. That, she claims, has led English teachers to cover more texts by using excerpts and snippets. (In fact, that 70 percent figure is intended to apply across the curriculum, not just to English class.) "The presiding goal," according to Paul, "is no longer instilling a love of literature" but rather having students master skills that will appear on tests, through reading at "an excruciatingly slow pace" (para. 10).

It's not clear that teachers actually want students to approach text in this way. Whether or not they identify as balanced literacy practitioners, I would guess that all teachers want their students to discover the pleasures of reading. If teachers put skills in the foreground and limit students to "close reading" of brief excerpts, it's probably because they and their supervisors believe that will help students succeed on tests of reading ability. After all, the tests give students a brief excerpt to read followed by skills-focused comprehension questions. So, the theory is, mimicking that format must be the way to prepare students for the tests.

Given the consistently disappointing results on reading tests, though, it appears that theory is mistaken. One intriguing experiment found a dramatic boost in comprehension from simply having students listen to a teacher read aloud two novels, back-to-back, over the course of 12 weeks. The study took place in England, where, according to the researchers, poorer readers in the equivalent of middle and high school "are often regarded by teachers as unable to read whole narratives and given short, simplified texts, yet are expected to analyze every part in a slow laborious read-through" (Westbrook et al., 2018, p. 1).

In the study, 20 teachers of students in the equivalent of 7th grade changed their approach, reading two entire "challenging novels" at a faster pace than usual with their average and poorer readers. In most cases, teachers read the books aloud rather than having students do the reading, pausing only occasionally to make sure everyone was following the story. At the end

of 12 weeks, the overall average amount of progress made by students was almost nine months, as measured by a standardized reading comprehension test—and poor readers made *16 months* of progress.

Although the researchers weren't evaluating whether this approach would spark students' love of reading, it did seem to have that effect. They couldn't wait to hear more of the novels, frequently asking questions such as "Can we speed read so we can finish the book?" and "Can we just read and not do any questions?"

The point isn't that students should *just* acquire knowledge through listening to read-alouds. Once they've mastered basic decoding skills, they should be reading texts and books themselves. That reading will, however, be easier for them if they've already become familiar with the topic—or perhaps with the text itself—through read-alouds and discussion.

Although our flawed approach to reading instruction certainly isn't the only reason for the post-pandemic absenteeism crisis, it could well have something to do with it. Of the four root causes of chronic absence identified by a national nonprofit called Attendance Works, one is "aversion," which could be caused by "struggling academically and/or behaviorally," and another is "disengagement," which could be the result of a "lack of academic and behavioral support" or boredom (Attendance Works, 2022). If you can't decode the texts you're expected to read in school, or if you can't understand those texts, then you're likely to become averse to or disengaged from school—or bored.

A New Approach: Content in the Foreground

An increasing number of educators across the country are embracing a different approach to reading comprehension—one that puts content in the foreground and focuses primarily on building knowledge rather than skills.

Although they're still in the minority, more and more school districts are adopting literacy curricula that dive deeply into topics in social studies and science as well as literature. The curricula also introduce those topics in a logical sequence, so students can acquire the background knowledge in earlier grades that they need to understand what they're expected to read later on. However, the trend toward knowledge-building curriculum hasn't gotten nearly as much traction or publicity as the push to "fix phonics."

One reason may be that, as compared to the message about phonics, the one about knowledge is unfamiliar to both the general public and most educators. The debate over phonics has been with us for generations now. Knowledge building is also a more complex issue that may be harder to grasp. Parents and members of the general public may assume that schools are *already* building knowledge, as I did before I examined the situation more closely.

For teachers, the system of leveled reading—which blends comprehension and decoding ability in a way that is hard to untangle—is deeply entrenched, as is the use of standardized assessments to monitor students' progress in acquiring reading skills. In addition, teachers feel they're expected to "teach the standards"—which, in the case of reading or ELA, almost always focus only on skills rather than specifying any content.

Many teachers are also skeptical of the topics covered in knowledge-building curricula. They doubt that young children will be interested in the units, especially historical ones, and they worry the texts will be too difficult for their struggling readers. They may fear that students won't perform well on reading tests if they haven't practiced the skills the tests appear to measure. Teachers are also concerned about losing their autonomy to a "scripted" curriculum.

All these concerns are understandable, especially if teachers are unaware of the evidence on the importance of knowledge building to

comprehension. However, once they try a knowledge-building curriculum—and have the support they need to implement it well—they often change their minds. Many discover that their students are capable of far more than they had assumed. In one high-poverty rural school district in Kentucky, for example, teachers had switched to systematic phonics instruction, but they came to realize that more was needed to equip their students to become proficient readers. Still, they were wary of the knowledge-building curriculum their district eventually adopted.

"I think for so long we thought that [our students] couldn't understand these things," a 3rd grade teacher told a reporter for the *Louisville Courier-Journal* in 2022, "so we didn't teach these things to them" (McLaren, 2022, para. 29). After three years, though, teachers were amazed at the vocabulary their students had absorbed through listening to teachers read complex texts and then discussing them—words like *exaggeration, sorrowful*, and *willful*. Students were also enjoying themselves. "They like being challenged," a 2nd grade teacher told the reporter. "It's their favorite part of the day" (para. 31).

That's something I've heard over and over again from teachers with whom I've spoken, including teachers who were initially skeptical about the new approach. Building kids' knowledge isn't just good for them, like some kind of foul-tasting medicine; they're actually eager to swallow it. I've heard stories about 2nd graders pretending to be Greek gods on the playground after learning about Greek myths (the local Walmart in one town ran out of sheets before Halloween because so many kids wanted to dress up in togas) and about kindergarteners spontaneously hunting for rocks after learning about geology.

Teachers who have switched to a knowledge-building curriculum often find that once students are introduced to a topic through read-alouds and discussion, they're eager to read more on their own.

"The librarian had to order more books," Deloris Fowler, the teacher in Tennessee, told me, describing what happened after her school switched to a curriculum called Core Knowledge Language Arts (CKLA), which introduces 3rd graders to topics like the Vikings and ancient Rome—topics Fowler had initially doubted would interest them. "She actually came to me and said what are the topics you're teaching … because I want to order more books, because the kids are asking for these books on these topics."

I've heard the same thing from other teachers and from librarians. Allowing kids to go deeply into a topic—or a novel—can show them what a joyful and engaging experience reading can be. It's a far cry from the usual regime of brief texts or excerpts used as vehicles for teaching the same round of comprehension skills, year after year.

In a 2nd grade class I followed through a school year, students sometimes groaned when it was time for the read-aloud from their knowledge-building curriculum to end—for example, when a story about the War of 1812 ended on a cliffhanger. Thanks to the curriculum, which they'd been getting since kindergarten, they had the background knowledge to understand the issues in the war—something the average American adult probably doesn't have. What they didn't know was who won, and they were eager to come back to school the next day to find out.

At higher grade levels, novels can not only spark a love of reading but also expand students' understanding of other times and places. Kyair Butts, a teacher at a high-poverty middle school in Baltimore, Maryland, told me he was skeptical when he saw that the curriculum his district had adopted, Wit & Wisdom, had him teaching his students the novel *Out of the Dust*.

"My initial inclination was what in the heck do Black kids in Baltimore have in common with a 13-year-old white girl in Depression era Oklahoma?" he said. But to his surprise, his students were highly engaged by the story.

"When they realize that Billie Jo lost her mom and her baby brother Franklin, they are hooked. They want to keep reading *Out of the Dust*."

In middle and high school, students are often missing the background knowledge that would enable them to understand and appreciate the texts they're expected to read. It can be challenging to compensate for those kinds of gaps—which are often the result of a narrow focus on reading and math at lower grade levels—but it's not impossible.

If students are reading *Out of the Dust*, for example, they may have never heard of the Great Depression. Teachers can bring in additional material explaining the historical context and enabling students to appreciate the story at a deeper level.

As for the concern that a knowledge-building curriculum will be too scripted, many teachers—including Fowler and Butts—have told me they've found ways to add their own touches. And, they've said, being provided with a curriculum enabled them to devote their energies to adapting the material to the needs of their students and delivering it well.

"The more that I planned, the more that I internalized the material," said Butts, "I thought to myself, wow, this is actually really freeing. Before, I had to make the map myself and plot the destinations. Now the destinations are already plotted for me, but I can still sort of create the map."

"What About Standardized Tests?"

"But wait," you may be thinking. "Don't students need to learn comprehension skills in order to do well on standardized tests?" First, it's important to understand what those tests are really measuring. Standardized tests appear to be focused on skills such as making inferences, but they're fundamentally assessing whether students have the

general vocabulary and general familiarity with complex syntax to understand the reading passages at least at a superficial level.

Of course, students do need to acquire those *general* kinds of knowledge. That's the knowledge that will enable them to understand texts on topics they don't already know something about. The only way to acquire that general knowledge, however, is through learning about a series of specific topics. Vocabulary and rules of syntax are unlikely to stick if they're taught in the abstract.

Because standardized reading tests aren't tied to any particular body of knowledge—including the knowledge covered by the various knowledge-building curricula—educators may not see a quick rise in scores on state tests or standardized interim assessments. Your students may have absorbed a lot of vocabulary related to Greek myths or the human digestive system, but the test passages may be about the Inuit or Amelia Earhart, and kids may not yet have reached the threshold of general knowledge and vocabulary that would enable them to understand texts on unfamiliar topics. If you continue with a knowledge-building curriculum, that should happen eventually, but for many students, it's likely to take several years.

How, then, are teachers supposed to monitor progress? Knowledge-building curricula come with their own assessments, grounded in the content that's been taught, which are a much more accurate measure than tests asking kids to understand passages on random topics. Those assessments can also equip students for the kinds of questions they'll see on standardized tests. That's what Deloris Fowler, now an instructional coach in a Tennessee district that uses CKLA, assures the teachers with whom she works.

At the end of the unit on Vikings, the reading passages on the CKLA assessment are about Vikings. "But the actual question types are exactly

the same types that you would find on the state test," Fowler says. "They're multiple choice, some of them are multiple select, some of them are short answer."

More fundamentally, the idea that teachers need to choose between teaching comprehension skills and strategies and building knowledge is mistaken. Any knowledge-building curriculum will incorporate skills and strategies. The difference is that instead of trying to teach a particular skill, using a text chosen for how well it lends itself to demonstrating the skill, the focus is on the text or the topic, and skills or strategies are brought in as appropriate to help students think about the content. In addition, instead of assuming students will have somehow just picked up the knowledge that will enable them to apply the skill, a knowledge-building curriculum will *provide* that knowledge.

What might that look like? When I observed a 2nd grade class using a knowledge-building curriculum through a school year, I saw students being asked to *predict* who would win the Civil War, *infer* whether the end of the Napoleonic Wars in Europe was a positive or negative development for the United States, and *compare* ancient Greek civilization to other ancient civilizations they had studied.

In response to that last question—which the teacher phrased as "What was something *unique* about civilizations in ancient Greece?" since *unique* was one of the day's vocabulary words—a number of hands flew up. She called on a boy who, like most of the students in the class, came from a non-English-speaking family. "Something unique," he said confidently, "was that they weren't near a river and they didn't have any fertile soil, so it was difficult for them to farm." That kind of class discussion might not be labeled as comprehension skill instruction, but it certainly guides students to acquire the habit of thinking analytically—at least when the content is engaging.

On another day, in the same classroom, I observed a guided reading session focused on teaching the skill of comparing and contrasting, using a simple text about the differences between Thanksgiving in Canada and the United States. All the students in the small group I observed missed the fact that Canadians celebrate the holiday in October rather than November. Nevertheless, it was clear to me they were able to compare and contrast. Maybe they were just bored by the text.

Making the Importance of Knowledge Building Explicit

Given its unfamiliarity, it's understandable that many teachers are wary of a knowledge-building approach to literacy, at least until they've tried it. But what explains the reluctance of many—though certainly not all—science of reading advocates to heed calls for an end to skills-focused comprehension instruction? After all, the science of reading, broadly defined, is full of evidence showing the key role of knowledge in comprehension.

Those advocates often mention comprehension as a component of reading, as do the infographics they frequently show to illustrate science of reading principles. They may feel that's sufficient to cover the issue, but it's not. Teachers already spend hours every week teaching comprehension—or believing they are. After all, balanced literacy has also embraced those five pillars of early literacy, one of which is comprehension.

For teachers to realize the problem, it needs to be made explicit. Infographics that include the term *comprehension* serve the purpose of showing that there's more than one factor in reading, but they're too simple to serve as guides to instruction. Even the relatively fleshed-out reading rope falls short.

Yes, it mentions background knowledge as a strand, but teachers are aware that background knowledge plays a role in comprehension. One frequently taught strategy is activating prior knowledge. What the reading rope doesn't convey is that this strategy only works if a student already *has* relevant prior knowledge to activate. Even if teachers recognize that problem and define a few unfamiliar key words before children read a text, that's probably not enough to enable them to understand that vocabulary when they encounter it in the future. Without a richer context and repeated exposure to new words, students are unlikely to appreciate their nuances or retain them in long-term memory.

Countering Arguments Against Knowledge Building

Some science of reading proponents are skeptical that building knowledge is important to comprehension at all, citing a lack of experimental evidence—especially as compared to the number of studies on strategy instruction. However, as I've mentioned and will discuss in more detail later, those studies don't actually provide support for the kind of comprehension instruction commonly delivered in classrooms—and we have plenty of real-world evidence, in the form of test scores, that the approach we've been using isn't working. That evidence, combined with studies we do have on the importance of knowledge, is enough to justify a change in direction.

Even those science of reading advocates who recognize the importance of building knowledge may feel they have their hands full just addressing misconceptions about what it takes to teach foundational skills effectively. Problems with comprehension instruction, some have told me, need to wait. After all, teachers can only handle so much change.

It's not impossible, however, to address both of these fundamental problems with reading instruction simultaneously. In fact, there are advantages to doing so. Several elementary curricula do an effective job of

both teaching foundational reading skills and building knowledge, relieving teachers of the need to juggle different literacy-related programs. Calling for a different approach to comprehension instruction alongside better decoding instruction could also serve to counter the accusation that science of reading advocates believe phonics is the panacea for all reading problems—or that they want teachers to spend two or three hours a day just on phonics.

Focusing on knowledge building through engaging read-alouds would also refute the notion that reading instruction grounded in scientific evidence is necessarily a joyless endeavor. Phonics instruction itself doesn't have to be joyless—kids can get very excited about sounding out words for the first time—but without a change in comprehension instruction, the lion's share of the reading block, which typically lasts two hours or more, is likely to be pretty dreary.

Just as in Andrea Yon's classroom in South Carolina, many students may give up on their 20 minutes of independent reading long before the time is up. A central tenet of the current approach to literacy is that those 20 minutes are key to enabling students to become proficient readers—and to learn to love reading. But it's hard to love reading when doing it on your own is a struggle.

"I got news for you," an assistant superintendent in Massachusetts named Brent Conway said he has told teachers who were upset about losing that 20 minutes after the adoption of a knowledge-building curriculum. "Half of your kids despise that time, and doing it more is not going to create a love. It will make it worse."

Lastly, if science of reading advocates avoid talking about problems with comprehension instruction, they risk helping to perpetuate a system that leaves many students condemned to low levels of literacy—able, perhaps, to decode a complex text when they reach higher grade levels but unable

to understand it. That risks reversing the hard-won progress they've helped bring about on foundational skills instruction.

In the past, when phonics instruction enabled students to decode but not understand text, phonics skeptics said, "You see? Phonics doesn't work." Of course, phonics does work; it's just not *enough*. Still, that kind of criticism could lead to another swing away from phonics. It may seem like we've gone too far down the road of systematic phonics to turn back, but remember that in 1997, 33 states had legislation stressing phonics, all or most of which apparently fell by the wayside. If the same thing happens now, we could end up, yet again, with many students who can neither decode *nor* comprehend written text.

If both sides in the dispute over reading instruction could be convinced to embrace *all* the science related to reading—and not just that related to foundational reading skills like phonics—there's a chance that this seemingly endless "war" could be resolved once and for all. Not to mention that all students could start receiving the kind of literacy instruction that would enable them to reach their full potential—and discover the delights of reading and learning in a way that too many have been deprived of for too long.

Embracing a Common Goal

When I was giving a presentation in Texas, I met a former teacher named Spring Cook. Her school had bought into the science of reading—on the decoding side, as usual. "We had been really focusing on phonics forever," she told me. "I had been on a soapbox for phonics, but I felt there was more to it."

So did others at her school. They tried adopting a curriculum that also built kids' knowledge. "Students were so excited," she recalled. "I was teaching a

1st grader about the American Revolution, and he said, 'I LOVE THIS LESSON!!' And it warmed my heart so much."

Parents were amazed by what their kids were learning. Administrators and teachers were having fun along with students, and Cook decided to quit her job and work for the publisher of the curriculum.

"I knew I had to be part of the movement and just spread the word that there are programs out there that can give us the knowledge that students need," she told me. "Because it is a matter of equity, it's a matter of democracy, and when we're able to give students those skills and that knowledge at an early age, then think what a better society we'll have."

That's a goal that all educators—whether they identify as balanced literacy, science of reading, or something else—should be able to get behind.