

# NO ONE GETS TO OWN THE TERM “THE SCIENCE OF READING”

## BY LUCY CALKINS

I’ve been asked to write a response to the phonics-centric people who are calling themselves “the science of reading.” I want to point out that no one interest group gets to own science. There is a mountain of evidence to support read aloud, comprehension, writing, rich oral language development, growth mindset, and a score of other components of good instruction. And yes, systematic phonics instruction is one of those components of good instruction.

I apologize from the start that this will be long and detailed. The issue is complex enough that I know of no other way to respond.

### WHAT ARE THE QUESTIONS AT PLAY?

I think that there is merit to much of what the phonics-centric people are saying and that we need to learn what we can from their important wake-up call. I also think differences of opinion between phonics-centric and balanced literacy are fewer and more nuanced than some would have us believe. Certainly, phonics is foundational to learning to read, and research has settled the fact that it is better to teach phonics systematically rather than opportunistically. However, it would be a mistake to return to the era many of us remember in which phonics was taught at the expense of reading and writing.

The new hype about phonics is accompanied by a new focus on dyslexia. Dyslexia is real—brain scientists at the Child Mind Institute point out that between 5-15% of the population have this disorder. Primary-level teachers absolutely need to screen for this and special support should be available for those children. But the overdue and important acknowledgement that some children need a structured multisensory approach to phonics is being used as a Trojan horse to bring back a Reading First-like emphasis on phonics at the expense of everything else, and I question the wisdom of that.

As I will explain, the US has actually tried that approach—Reading First was a multi-billion dollar, multi-year experiment—and the results were conclusive. Kids need phonics, yes, but even in the early grades, phonics needs to be taught alongside and in support of strong instruction in comprehension, fluency, writing, and vocabulary.

### DOES PHONICS NEED TO BE EXPLICITLY TAUGHT?

It is true that young children need explicit instruction in grapho-phonics, which is the connection between spoken language, which children come to school knowing, and the alphabet, which many students don’t come to school knowing. Children need to be taught all the ways in which 26 letters combine to make words. Because human beings are hard-wired to learn spoken language, you can simply immerse babies in a world of talk, and they will learn to talk fluently and understand talk without needing explicit instruction. That is not at all the case for learning to read. Immersion in a sea of books is not enough.

Whereas typically developing children come to school having already learned three major language systems—meaning (semantics), sentence structure (syntax) and sound (phonetics), they do not know the fourth language system, one that is essential to reading and writing: the graphic system which, in English, means the alphabet. Young children absolutely need explicit instruction in the connection between spoken language and, in English, our 26 letters and 40 or so distinct sounds (depending on regional variations). Remember that spoken language has existed for at least tens of thousands of years, while written language was invented only a few thousand years ago. Speech is like walking, inborn and innate. Reading and writing are like driving a car. They don’t come naturally.

I do not know any school system that doesn't ascribe to the belief that explicit instruction in phonics is one of the foundations for learning to read and write. There are important debates in education, but there should be no debate about the fact that children should be taught phonics, and that the phonics education they receive should be planned, systematic, and based on research that is widely available on this topic.

I, for one, have for decades stood strongly with advocates of reading science on their argument that phonics needs to be explicitly taught. Some people correctly point out that the Teachers College Reading and Writing Project, the organization I lead, only recently released our own phonics program. Although that is true, we have always been clear to the districts with which we work that they need to adopt a research-based, systematic approach to teaching phonics. My colleagues and I developed our own program because we decided teachers and children deserve an approach to phonics that supports high levels of student (and teacher) engagement. It is important to note that there is science behind engagement. It is not only common sense but also scientific research that show that engaged learners use whatever skills and strategies they have with greater persistence and effort, and therefore learn more. My colleagues and I also decided to develop our own curriculum for phonics because we know it is critically important to explicitly teach into transfer between phonics, reading, and especially writing. Our partner schools wanted us to help their teachers teach phonics in ways that align with and transfer to their curriculum in reading and writing.

We are clear that children should not just study phonics, they should also *use* phonics every day, often. In the schools with which TCRWP works, every child is engaged in a daily writing workshop. Those workshops could be called daily phonics workshops, as every minute of writing time is also phonics time. When teachers teach phonics in ways that transfer into the writing workshop, teachers coach young writers by saying things like, "Be sure you signal that that's a long vowel" and "Make sure every syllable has a vowel!" and "Watch your r-controlled vowels. You are forgetting the vowel." First-grade writers know that if they have spelled *apple* as *apl*, there's something they need to fix up, since the second syllable is missing a vowel. This takes some teaching to learn, because when consonants like *m*, *n*, *l*, and *r* are at the ends of words, they are phonetically similar to vowels. Teaching first graders to think about whether they've included a vowel in each syllable of the words they write is heady and important work. I believe one of the great secrets to the success of TCRWP schools is the presence of a writing workshop in the K-2 grades.

It is equally important that children use phonics to read, which means that when they come to a sentence that says "I got on my horse and rode away," and the child first reads *pony* for *horse*, the child should be told, "Check the letters," or "Try that again," or asked, "Does that look right?" It is not helpful for teachers to accept *pony* for *horse* nor for them to say, "Skip the hard words," or "Just guess and keep going." Figuring out unfamiliar words gives kids opportunities to apply the knowledge they are learning during phonics as they read.

When a child encounters an unfamiliar word, it *is* helpful for the teacher to say, "Try it," or "Figure it out," or "Hypothesize drawing on all the sources of information available to you." That latter prompt is rather heavy-duty academic language to say to a 5-year-old who is stymied over the word *horse*, so some teachers instead say, "Guess!" and then they follow that with, "Check it."

The "science of reading" people are all-over the word *guess* and they aren't wrong about that. It would be wise for teachers to say, "Try it," instead of "Guess," as, of course, some children *do* literally just glance at the word or the picture and take wild guesses, which is not what anyone desires or intends. In any case, it is not only important to coach kids, it is also important to teach them strategies to draw on independently because in a class of 30 kids, each child reading at the same time, most children will encounter hard words without a teacher at their elbow. The important thing, then, is to teach kids that they needn't freeze when they come to a hard word, nor skip past it. They needn't be stymied by the word and

stop reading. The important thing is to teach them that they have resources to draw upon, and to use those resources to develop stamina. For example, they can look at the unfamiliar word and break it into parts and think, *Have I seen that part before?* and they can draw on their knowledge of letter-sound correspondence to decode. They also can reread the sentence and think, *What could this be?* and then check that hypothesis against the actual letters. If the word those kids encounter does happen to be *horse*, (to continue with the example) they can sound out the initial consonant /h/ and then proceed to either the /o/—which has 16 sounds, so it’s not easy!—or to the /or/ which will be a more useful chunk. Teaching kids to flexibly tackle hard words, looking for chunks, is important—a skill that kids get tons of practice with then they write.

## HOW DO THE THREE CUEING SYSTEMS AND DECODABLE TEXTS FACTOR IN?

When journalists and others who do not know classroom instruction discuss the three cueing systems as a method for teaching reading, I think they are referring to the fact that many teachers assess young readers by examining which of the three cueing systems a reader does and does not rely upon when she encounters an unfamiliar word. I do not know anyone, however, who defines his or her method for teaching reading as “the three cueing systems.” That phrase is instead most associated with a form of reading assessment known as running records. To say a school’s approach to reading is based on “the three cueing systems” is reductionist as reading involves so much more: fluency, vocabulary, background knowledge, awareness of text structure, skills such as main idea, synthesis, interpretation, compare and contrast, critical thinking...and the list goes on.

As I said, however, many teachers do rely on a knowledge of the three cueing systems when conducting informal assessments. I have no doubt that it is helpful to notice whether the child uses all the sources of knowledge available to her as she reads. Does that child look across the letters to make sure that the word she produces matches the actual text on the page? If so, she is relying on the graphic system and its relationship to sound, which is critical. If, on the other hand, she produces *pony* for the word *horse*, an informed teacher knows she is relying on meaning, also called semantics, and not on the letters on the page, which would signal a big problem. Meanwhile, however, if the child over-relies on her partial knowledge of phonics and in doing so mistakenly reads *horse* to say *house* and is satisfied with the sentence, “I got on my house and rode away,” that would suggest she is not attending to meaning, an equally prevalent and concerning problem. Successful reading integrates the three cueing systems. As readers become more proficient, they become less dependent on the details of phonics and rely more on word recognition and on larger meanings.

Although “the three-cueing systems approach” is not, to my knowledge, a method of teaching reading, it *is* the case that there is a time in the development of a reader—typically, for kindergarten children, this is winter—when the books that children read tend to be written in such a way that children receive a lot of support from repetition (which helps the child rely on a command of syntax) and from picture support (which helps the child rely on meaning). A few months into kindergarten, a child can “read” a book that says, “I can read the newspaper,” and “I can read the recipe,” if the child relies on the pattern of the repeating text, on the pictures, and on first letters. I have found value in those books. The child is approximating reading. Her experience is not unlike that of a bike rider who relies on training wheels. If these supports help the child in the first months of kindergarten to learn from multiple meaningful encounters with words and therefore the child develops a vocabulary of high frequency words and the confidence that she can read, I see advantages to that. In the end, developing a sight vocabulary is an essential part of becoming a proficient reader. But I also think that it is important for a child to have a balanced reading diet, one that includes a variety of genres, authors, formats and yes, supports for reading, too. I think a library which contains only highly predictable books, especially in the absence of a writing workshop, does not give children enough opportunities to put their phonics knowledge to use.

Later, I discuss the special importance of supporting children with dyslexia. For now, let me just say that these children generally do not fare well with books that are highly predictable and that provide strong picture support. The last thing children who are dyslexic need is encouragement to compensate by relying on pictures and meaning instead of sound-letter correspondences. They need books that help them rely upon the letters on the page and to trust that the phonics instruction they receive will pay off when they are reading continuous texts. So meaningful, mostly decodable texts are especially important for children with dyslexia.

But decodable texts have value for all children in the earliest stages of learning to read. For example, in our Phonics Units of Study, in early winter of kindergarten, teachers teach kids to work with simple onsets and rimes so that kids come to understand that they can add an *m* to *at* and spell *mat*. Children are explicitly taught that work in ways that allow them to build off many rimes (*at, up, am, it, etc.*) and many consonants. These patterns are often referred to as word families, and they are a powerful tool that children can make use of as they read. However, if the books kindergarteners are reading tend to go like, “I see the elephant,” “I see the giraffe,” then the child’s reading work with those texts will be supported more by the pictures and repetition than by phonics. For those early readers, *elephant* and *giraffe* aren’t really within their reach unless the child is relying on the picture. By the time children are reading slightly harder books, there will be lots of unfamiliar yet accessible words that they can tackle, but for a little while, some books contain unfamiliar words that are not, for those readers, within reach without picture support. They are not decodable.

For very early readers, then, there is merit to the argument that access to more decodable texts will be beneficial. Children would do well to have opportunities to read a book that went like this: “The rat sat on the mat and got fat.” My colleagues and I at the Teachers College Reading and Writing Project think the very early books (A through D especially) heavily supported by pictures and repetition should be just one part of a child’s reading diet, and that including a range of decodable texts would be a wise move.

This is complicated, however, because as Wiley Blevins has reminded us, some decodable texts are *so* phonics driven that they don’t use authentic language and will not make sense to a child. (Imagine a page that says “Jan can lug the tug.”) Those texts don’t help a child rely on meaning as well as phonics, and it’s a very big problem if readers learn that they can be reading a text correctly and that text still makes no sense, which is the case for some extremely decodable texts. Children need to grow up to be alarmed when a text makes no sense, so that their awareness that meaning has broken down triggers them to self correct. Blevins (2017) suggests that students benefit most from decodable texts that still maintain meaning. As he says it, “A story that is 65% decodable and makes sense is far more valuable as an instructional tool than one that is 80% decodable and nonsense” (Blevins, 2017, p. 160).

The key is giving students time to apply their phonics learning while reading a balanced diet of books across a range of decodability. I have long recommended Ready Readers, a series of books written by Elfrieda Hiebert, as one resource. Teachers with whom I work also compose decodable texts with kids within writing workshops and use these to supplement the kids’ reading baggies.

## SHOULD SCHOOLS INCREASE THE FOCUS ON PHONICS AT THE EXPENSE OF EVERYTHING ELSE?

There is reason to be alarmed about the state of education in the US. Almost half our children struggle with reading—that’s alarming. Not long ago, the American Library Association asked graduating seniors (that is, the children who stayed in school through high school) whether they would voluntarily read a book once they’d graduated—and 80% said no. That’s also alarming. American working millennials are among the least well educated groups in the industrialized world (Tucker, 2019).

There are lots of problems in American education and there are many urgently important steps forward that we should advocate. If you ask me, “Is an emphasis on teacher professional development in phonics one possible avenue to pursue?” my answer is yes.

I think it is a good idea for some schools and districts to decide to prioritize PD in phonics. Teachers—especially those teaching pre-K to second grade—do need to learn more about phonics. Even teachers who have taught a phonics program for years sometimes haven’t learned all they need to know about how children develop grapho-phonics skills. Too often, curriculum that is designed to be teacher-proof, so that even unskilled teachers can deliver it, is not designed to teach teachers while it teaches children. That’s a mistake.

And yes, increasingly teachers are becoming certified without access to graduate programs, or their “graduate programs” consist of nothing more than a host of on-line courses. Then, too, even graduate courses such as the ones at my own institution license teachers for a 1-6 grade span, a span which covers a vast amount of language arts education. One never knows if a graduate student will end up teaching in first grade, where the 8 ways to make the long *a* sound and the differences between open and closed syllables will be important, or in sixth grade, where students need to be able to write research-based argument essays using a hierarchy of claims, reasons, and evidence, while also noting the point of view of any cited sources. Clearly, higher education programs will never provide sufficient support for every teacher for the demands of every grade level. That is why on-the-job professional development is so vital and why schools themselves need to become sites for professional study.

That is, just as many teachers are not prepared for the demands of teaching phonics, many are also not prepared to support the equally important skills of comprehension. They are also not well prepared to teach writing. They also are not well prepared to support English language learners. They also are not well prepared to teach culturally relevant curriculum. Clearly, teachers don’t enter the profession with all the knowledge they will need to rise to the challenges of their enormously complex field. We all need to be engaged in continuous learning.

So if you ask me, “Should a state require that every K-8 teacher attend an intensive academy to study and teach a phonics-centric approach to reading?” my answer is I don’t think so.

For starts, anything done to that scale will overtap our abilities to resource the work. Then, too, there is no reason to believe that the same focus should be a priority at every school at the same time. Most of all, we have evidence that suggests that mandating a phonics-centric approach for everyone doesn’t yield progress.

I say that because we did a national experiment on just such a mandate. The experiment didn’t involve 30, 50, or 200 kids as most studies do, nor did it involve two or three years of treatment, as most studies do. Instead, the experiment involved tens of millions of kids. It was called Reading First, the reading instructional program for K-3 mandated in schools funded by No Child Left Behind. That federally mandated program began implementation in 2002, lasted eight years, and involved a set of top-down mandates for intensive phonics instruction that resembled what the science of reading people today are supporting. The mandates included not only intensive systematic phonics based on “the science of reading” but also an unbalanced reliance on highly decodable texts, to the exclusion of trade books. Teachers were expected to follow scripted lessons closely. Jim Cunningham (2017) argues that there has probably never been a national educational policy implemented with as much fidelity.

The results of Reading First were not good. Even the official federal evaluation of Reading First, required by NCLB law, conducted late in President George W. Bush’s second term, concluded there had been “no consistent pattern of effects over time in the impact estimates for reading instruction in grade one or in

reading comprehension in any grade” (Gamse, Jacob, Horst, Boulay, and Unlu, 2008). Even more telling are the results one can see when looking at the fourth graders who took the NAEP reading assessment in 2009. These children were three when Reading First was implemented and therefore grew up entirely within that program and should have benefited from it. Yet sixty-seven percent of those children scored below the Proficient level in reading (National Center for Education Statistics, 2010). This and other evidence led Marc Tucker (2014) to conclude that Reading First led to “almost no improvement in student performance” (p. 11).

I agree with Jim Cunningham that the failure of Reading First’s emphasis on systematic phonics does not mean that phonics is not foundational to a child’s progress as a reader and a writer. But as Cunningham (2017) argues in *What Really Matters in Teaching Phonics Today: Laying a Foundation for Reading*, the problem with Reading First was not that it taught phonics, but that phonics was largely *all* it taught. The foundation for a building is important, yes, but the foundation is not the entire building.

Even if one does not endorse the Common Core standards in their entirety, it is worth noting that they offer a helpful correction to the extremes of both whole language as well as those of Reading First, and, I suggest, to today’s “science of reading” approach. Both the Common Core and the state standards that have replaced it say to primary teachers that yes, indeed, phonics matters. The phonics in today’s standards are no lighter than they’ve ever been. But these standards say that phonics, alone, is not sufficient; those standards and the many state standards that are adaptations of them call for young children to receive a rigorous education in writing, in reading comprehension, in vocabulary, and in speaking and listening alongside the education they receive in phonics. That’s a tall order.

But let me return to the question, “Should school districts mandate ten days of Reading Academies for all teachers, and insist that all teachers follow one of several state-mandated systematic phonics programs?”

My suggestion is this: proceed with caution. Children’s lives are our most precious resource. What we do with their time and with their teachers’ time is what we do with our nation’s future. Yes, one could make an argument for the primacy of phonics, in a similar way one could argue on behalf of vocabulary (which comes, above all, from talk and reading aloud and silent reading) or social-emotional health or numeracy or problem-solving skills or curiosity and questioning or writing or comprehension or writing about reading or debate or critical thinking—and the list goes on. A decision that every single school should expend the most important capital—teachers’ and kids’ time—on a phonics-only approach to reading flies in the face of science because there isn’t evidence to support the wisdom of such a move.

Chances are good that if the science of reading people had a magic solution that was going to transform every child into a proficient and avid reader, there would have been some indication of that from the billions of dollars and countless hours that were invested into a phonics-heavy approach to reading instruction a decade ago.

Having said that, I am all for a district’s superintendent or director of language arts moving heaven and earth to help teachers across the district develop more knowledge and skills on phonics. I just don’t believe that a mandated top-down decision, delivered at scale to hundreds of thousands of schools, is apt to align with the priorities of each particular school. I agree with Fullan who argues, “One of the biggest problems in schools today is not resistance to innovation but the fragmentation, overload, and incoherence resulting from too many innovations, adapted in an ad hoc and superficial way, unconnected with ongoing work and with each other.” There is no one yellow brick road to Oz. There are many different ways for schools to improve, and for every school, this needs to be a continual process of study of research and best practices, innovation, study of results, reflective practice, collaboration, and self-critique.

This is what I suggest. Encourage a consortium of school districts to adopt a serious study of phonics as their next focus. Encourage another consortium of districts to adopt other horizons as their focus. I imagine a consortium of districts might focus on classroom libraries and higher level comprehension or on writing, and writing across the curriculum. Good will come from districts delving deeply into professional education in the service of priorities that teachers and school leaders select. I believe each of these consortia could yield results—or not, depending on how things are done. In any case, my point is, let's try it and learn from each other.

But meanwhile there is a remaining moral and educational decision related to children with dyslexia. You see, there are options about whether professional development should forward math or comprehension or phonics or a host of other options. But there is no option for our nation outside of providing all children with an adequate basic education. And that means that we need to become more equipped to support children with dyslexia.

## WHAT ABOUT DYSLEXIA?

Several hundred educators gathered recently at Teachers College, Columbia University, for a three-day institute which my organization co-led with the Child Mind Institute—a think tank of brain researchers that is providing leadership to much of the nation on dyslexia. We came away from that institute agreeing that dyslexia is a physiological brain disorder. While the typically developing reader uses three parts of the brain to read, people with dyslexia use only one part, the Broca's area, which is the least efficient part of the brain for reading. Experts tell us that between 5-15% of children have dyslexia. I think the jury is no longer out; those children need structured multi-sensory phonics support such as they receive from someone trained in Orton Gillingham or Lindamood-Bell. When children receive that support for a few years, their brains can literally be re-wired to use more efficient areas when they read.

My hypothesis is that, at least for right now, it's unrealistic to think that most general-ed classroom teachers will be able to provide what 27 typically developing readers and writers need while also fully meeting the needs of children with dyslexia, because those children do have very intensive and specialized needs. Whereas the typically developing reader sees a word three times and that word becomes a sight word, allowing the reader to read it with automaticity, for the child with dyslexia that word only becomes automatized after the child sees it thirty times. That is, children with dyslexia require an enormous amount of repetition. Providing *all* students with that extra emphasis on repetition and phonics may mean that typically developing students don't get the other instruction they need in vocabulary, comprehension, writing, and higher-order thinking.

That said, a meta-analysis by Weiser and Mathes (2011) showed that, while the typically developing reader benefits from learning to decode phonetically regular words while using letter manipulatives to spell the words (think: moving the /s/ in front of *at*, then switching it to an /r/), the child with dyslexia is far better off being taught phonemic awareness lessons orally, without the presence of any letters. The rationale for this is that the brain of a child with dyslexia needs to be rewired so that the child learns to segment and blend sounds, and if the letters are there at all, the child will rely on them in ways that keep the necessary rewiring from taking place. My big point is that yes, we need reading specialists in schools that can work with the few children in a class who need this specialized support.

There is a lot more to say about the importance of general-ed K-2 teachers learning to screen for and support children with dyslexia—and until screening becomes a regular practice, our teachers in upper grades as well. People will worry about the cost of this, but the pipeline of children with untreated dyslexia to prison is real, to say nothing of the relationship between dyslexia and emotional stress, social problems, academic achievement, and more.

My own organization is responding to the science of reading wake-up call by leading study groups and on-site professional development to explore the most pressing concerns schools have when it comes to dyslexia: screening for dyslexia, recruiting and on-boarding qualified educators, studying transference of skills, and more.

In some settings, such as co-taught or ICT classrooms, children with dyslexia may be able to get the specific, intensive support they need within the home classroom; however, in most classrooms that is still not the case. We are especially concerned with how to bridge the resulting gap between what happens in clinical specialized small groups and the classroom, so that children receiving specialized support see the instruction they receive in the two settings as aligned, and so the general education teacher reinforces and taps into the specialized education the child receives. TCRWP is engaged in research projects and study groups to learn how to better address this, and feel our attention to this is overdue.

For this, and for the reminder that explicit phonics instruction for all children is essential, I am grateful to the science of reading proponents. I also am grateful that these educators are successfully calling attention to the importance of prioritizing professional education for teachers. I think that professional education is necessary for those of us in teacher education as well. I, for one, have benefitted from this discussion and am grateful to be on a learning trajectory.

## BIBLIOGRAPHY

- Aud, S., Hussar, W., Planty, M., Snyder, T., Bianco, K., Fox, M., Frohlich, L., Kemp, J., Drake, L. (2010). *The Condition of Education 2010* (NCES 2010-028). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Blevins, W. (2016). *A Fresh Look at Phonics: Common Causes of Failure and 7 Ingredients for Success*. Thousand Oaks, CA: Corwin.
- Cunningham, J. W. (2017) *What Really Matters in Teaching Phonics Today: Laying a Foundation for Reading*. Curriculum Associates, LLC.
- Gamse, B., Jacob, R., Horst, M., Boulay, B., and Unlu, F. (2008). *Reading First Impact Study*. US Department of Education. Jessup, MD: Education Publications Center.
- Tucker, M. (2014) *Fixing Our National Accountability System*. Washington, DC: The National Center on Education and the Economy.
- Tucker, M. (2019) *Leading High-Performance School Systems*. Alexandria, VA: ASCD.
- Weiser, B., & Mathes, P. (2011). [Using encoding instruction to improve the reading and spelling performances of elementary students at risk for literacy difficulties](#): A best evidence synthesis. *Review of Educational Research*, 81(2), 170-200.