



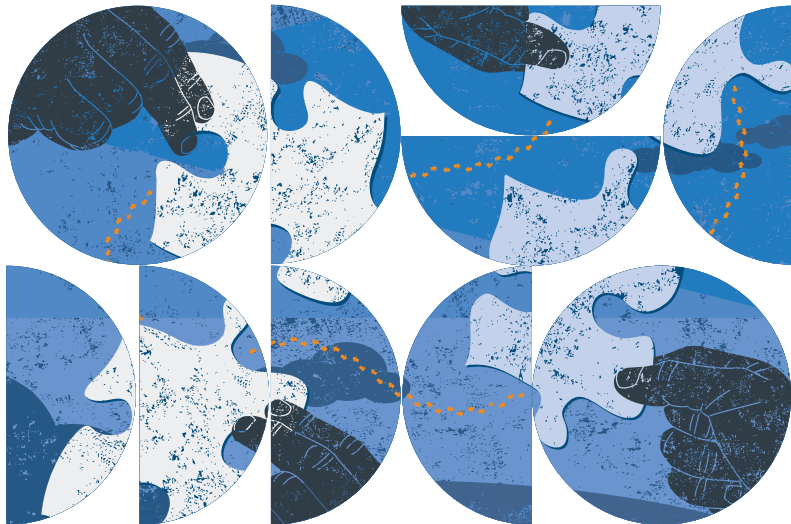
EAB

Narrowing the Third-Grade **Reading Gap**

Embracing the Science of Reading

District
Leadership
Forum

RESEARCH BRIEFING



1

The Challenge of Teaching All Students to Read

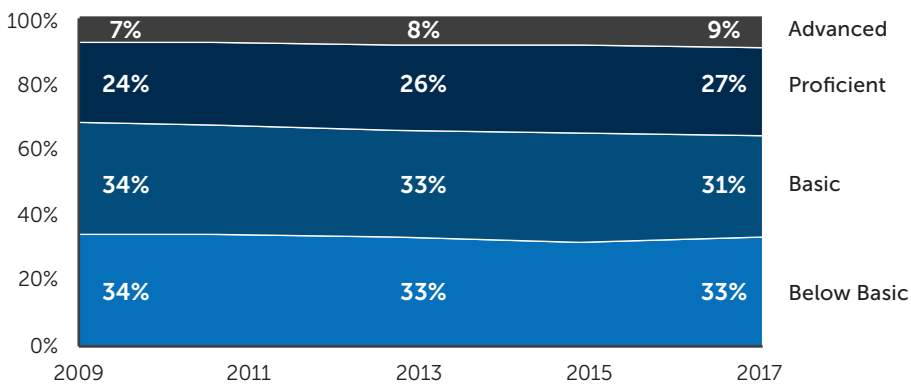
Far Too Many Kids **Can't Read** at an Early Age

The Nation's Poor Reading Scores Remain Stagnant

According to NAEP¹—the only nationwide assessment of fourth-grade reading performance—the United States experienced some improvement in the share of fourth-grade students who are reading at or above proficient levels. Unfortunately, 64% of all fourth-graders scored at basic or below basic reading levels in 2017, a rate that is alarmingly similar to a decade ago.

NAEP 4th Grade Reading Scores Persistently Low

Percentage of Students Scoring at Each Achievement Level, 2009–2017



Minimal Growth in Reading Outcomes Over the Last Decade

5%

Percentage increase in share of fourth-grade students **at or above proficiency** over the past eight years

64%

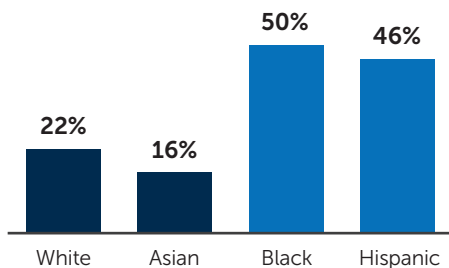
Of fourth-graders are reading **at or below** basic levels on NAEP in 2017



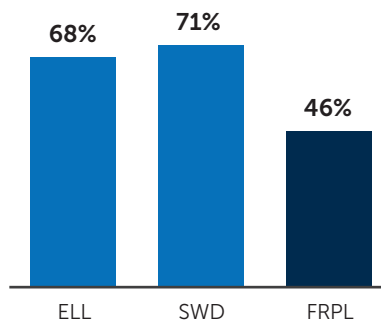
Poor Reading Outcomes Transcend Demographics

Interestingly, struggling readers are found across student demographics. NAEP data indicates that students from minority, ELL,² disabled, and low-income backgrounds are far more likely to score at below basic. However, research reveals that students from college-educated families may also face challenges with reading. In fact, an estimated 30% of fourth-graders who score below proficiency on NAEP live in households with at least one college-educated parent.

While Minority Students Are at Risk for Poor Reading Scores...



...Special Populations Are the Furthest Behind in Reading



30%

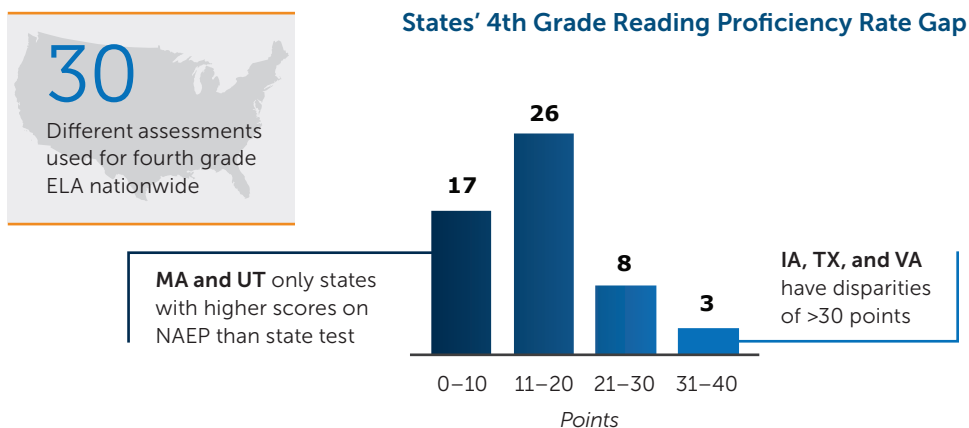
Of struggling readers come from households with at least one **college-educated parent**

States Not on the Same Page on Proficiency Standards

State Data Inflation Often Muddies the Waters of Who Can Read

While many district leaders acknowledge the imperative to improve reading outcomes for all students, reaching a consensus around how to measure student reading proficiency remains a challenge.

NAEP is an admittedly rigorous standard, but it remains the only national assessment available. Furthermore, analysis of the 30 different state-level assessments reveals nearly all states hold students to significantly lower reading standards than NAEP.



Leaving Many Questioning, "Can This Student Read?"



There are so many definitions of what grade-level reading means depending on which measure we use. How do we know which one is right?

SUPERINTENDENT, MIDWEST DISTRICT

Assessment Debates Shouldn't Distract from Realities

Despite the persistent debate about reading assessments, there is no question that failing to improve third-grade reading outcomes is problematic for students and districts.

Students who still struggle to read by the end of Third-Grade face significant long-term challenges. First, given that Third-Grade marks the shift from **learning to read to reading to learn**, struggling readers are at greater risk for falling behind in all other subjects and are less likely to attend college or secure a living-wage job.

Poor reading outcomes are potentially costly for districts, particularly in states with mandatory retention laws. Even though many district leaders report finding ways around these laws, the potential cost of retaining students is a strain on already-limited budgets.

Failing to Address the Issue Is Problematic for Students...



Of students who do not read proficiently by third grade never reach reading proficiency in future grades



Decrease in likelihood that struggling readers in third grade will attend college, compared to their more proficient peers



Adults in the nation today read at or below basic levels, even though most living-wage jobs require proficient readers

...And Costly for Districts, Particularly in States with Retention Laws

16

Number of states requiring districts to retain third-graders who do not meet reading standards as of 2018

\$11K

Average per pupil cost to retain students in 2017

Truth Be Told: There's No Excuse for Poor Outcomes

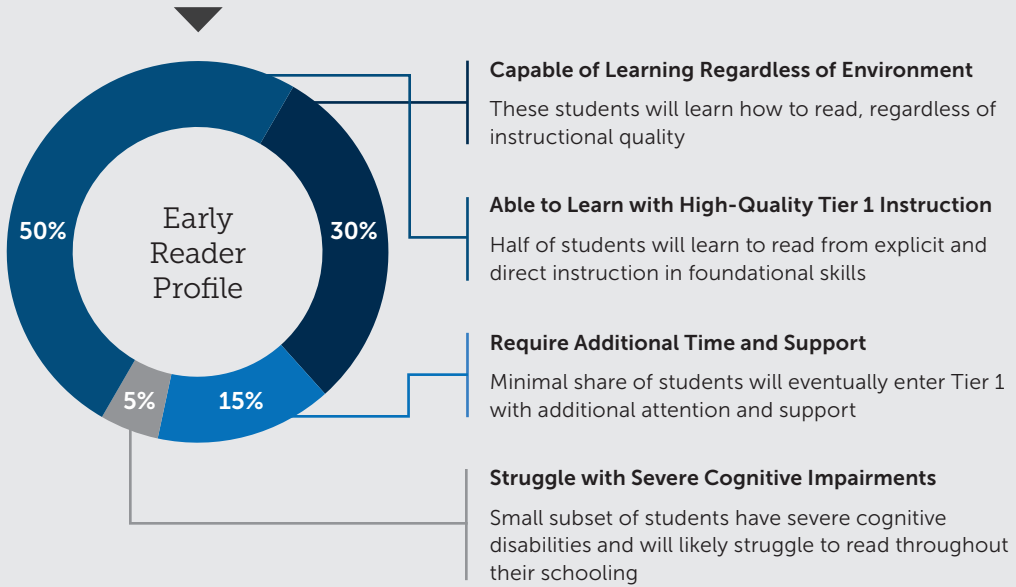
The National Institute of Health (NIH) indicates that nearly all children have the cognitive capacity to learn to read, estimating that only 5% of young readers have severe cognitive impairments that would make acquiring reading skills extremely difficult.

While the remaining 95% of students have the capacity to read, not every student will learn to read under the same conditions. An estimated 30% of students will learn to read regardless of how they were taught. However, roughly half of students will need high-quality Tier 1 instruction in foundational skills, and an additional 15% of students will require additional time and support to meet their reading potential.

Almost All Students Have the Cognitive Capacity to Read

95%

Of elementary students, regardless of background, are cognitively capable of learning to read when they receive sufficient direct instruction on the foundational skills of reading



A Different Approach Is Needed to Improve Reading

Common District Initiatives Not Improving Scores

Students' reading struggles are certainly not due to a lack of effort. Every year, districts invest significant time and resources, yet, most districts report seeing little improvement.

In seeking ways to better address persisting reading gaps, many districts have turned to pre-kindergarten access as a strategy for narrowing the word gap and improving literacy outcomes. While research suggests a number of positive effects, a 2015 randomized-control, longitudinal study conducted by Vanderbilt University found that although preschool improves kindergarten reading outcomes, these positive effects are not sustained beyond kindergarten. Closing the third-grade reading gap requires a different approach.

Districts Invest Significant Time and Resources in Reading...



Extending School Days or Literacy Time Blocks



Hiring Literacy Specialists or Instructional Coaches



Updating Instructional and Curricular Materials



Purchasing 1:1 Reading-Related Technology

...Yet Often See Minimal Lasting Results



It feels like we've tried everything and anything to improve reading, but nothing seems to really work. In the end, we keep seeing very similar outcomes.

**SUPERINTENDENT,
SOUTHWEST DISTRICT**

Pre-K Helpful, but Not Sufficient

Key Findings Regarding the Effects of Pre-K on Reading, Vanderbilt Peabody Study (2015)



Improves Kindergarten Readiness

Students who attended pre-K had higher reading outcomes at the start of kindergarten



Effects on Reading Are Not Sustained

By the end of kindergarten, students who attended pre-K were no longer significantly outperforming those who didn't attend

Good News: Science Provides a Blueprint for Reading

The good news is that multidisciplinary research provides valuable insight into how schools can improve reading outcomes for all children. For nearly 30 years, over 40 research centers nationwide that represent diverse fields—including neuroscience, linguistics, medicine, and child psychology—have examined how the human brain develops the ability to read. These various research disciplines draw surprisingly similar conclusions on the science behind learning to read and what effective reading instruction should entail.

Decades of Neuroscience Research Provide Insight on How Students Learn to Read



42 Research centers nationwide examine reading-related brain activity



30 Years of brain-based research dedicated to learning to read

Science Has Implications for How to Teach Reading...

We [NICHD] have multidisciplinary [research] teams—including cognitive neuroscientists and pediatricians—who have developed a body of information on reading and the brain that can inform practice in schools and policy.

DR. G. REID LYON

National Institute of Child Health and Human Development



...And How Schools Can Help Struggling Readers Read

Every year, there are hundreds of newly published, scientifically oriented research reports on reading....There is ample research that shows how weak readers can make substantial reading gains, with a fairly large percentage developing normalized reading skills.

DR. DAVID KILPATRICK

Professor of Psychology, SUNY Cortland

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Scientific Insights on How Students Learn to Read

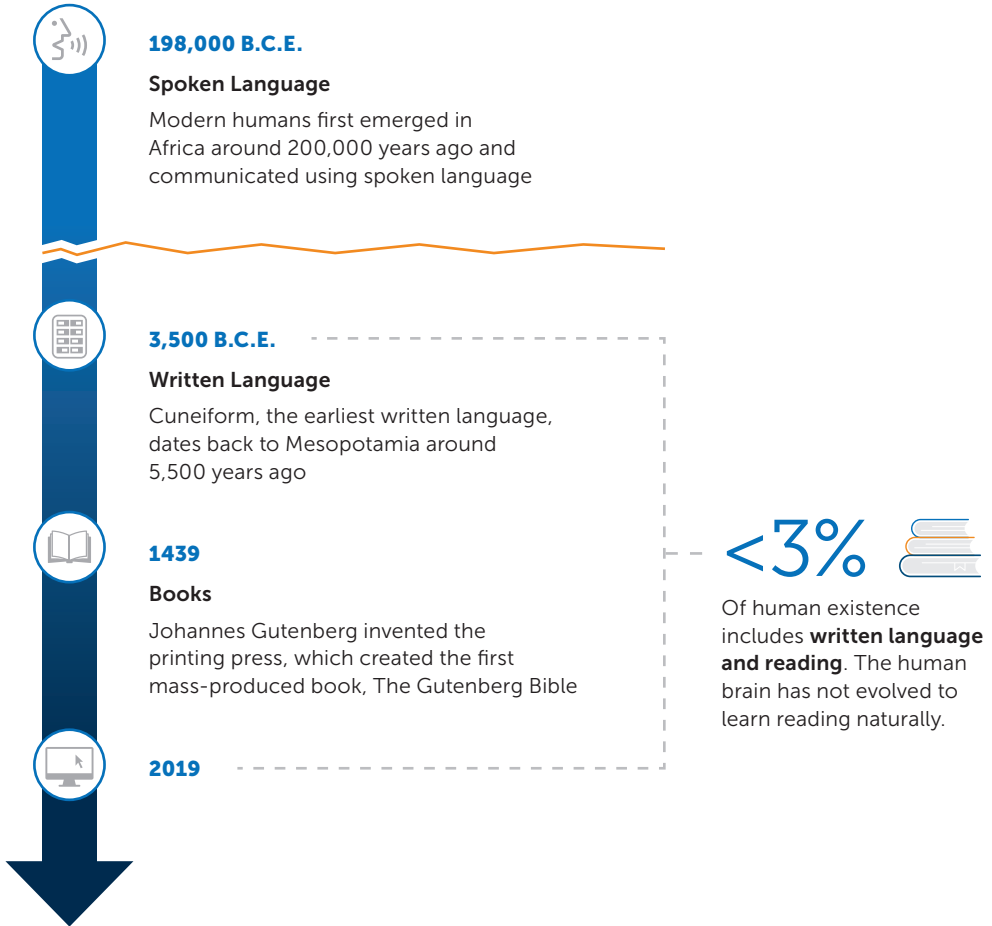
Human Brains Are **Not** **Naturally Wired to Read**

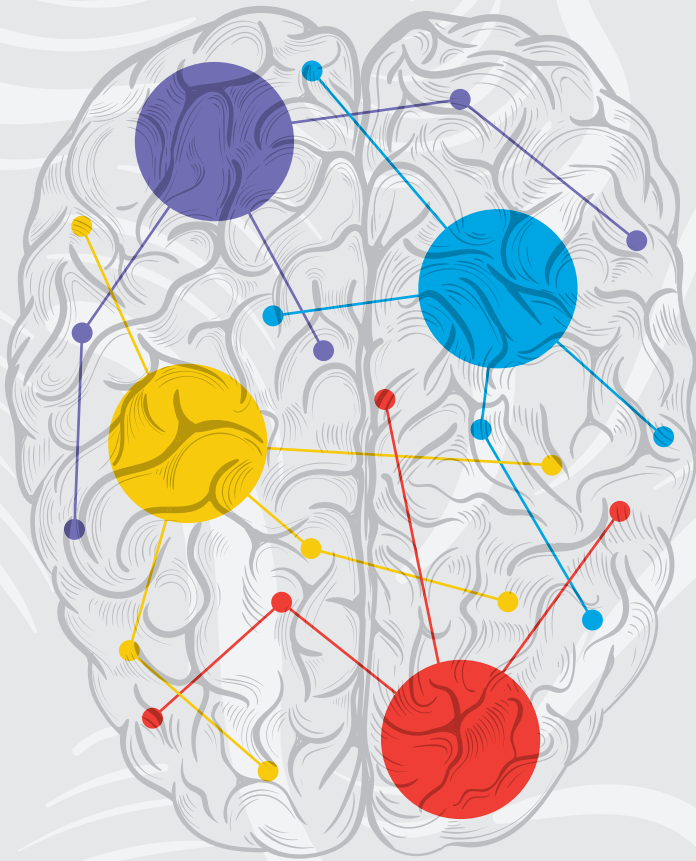
Reading and Writing Are Relatively Recent in the Span of Human Existence

One of the most important research findings from this scientific body of research is that our brains are not naturally wired to read. Research indicates that learning to read is a vastly different neurological process than learning to speak. While surrounding young children with spoken language helps them learn to speak, surrounding children with written language and reading them engaging books is not enough for most students.

As a species, our brains have not evolved to naturally read. In the span of modern human existence, reading is a relatively recent development. Compared to spoken language, which was integral to the emergence of modern humans over 200,000 years ago, the concept of written language was invented by humans only 5,500 years ago—less than 3% of human existence, and books are an even more recent invention.

Timeline of Spoken and Written Language in Relation to Human History



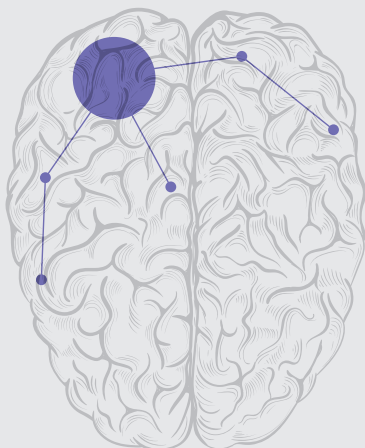


Several Brain Functions Are Involved in Reading

Learning to read requires building neurological connections between disparate regions of the brain.

Each region plays a role in various human functions—speech, sound, sight, and processing meaning—all of which are necessary for reading. The following diagrams provide a simplified overview of some of the most critical regions of the brain involved in reading.

Visual Cortex Recognizes Printed Letters and Words



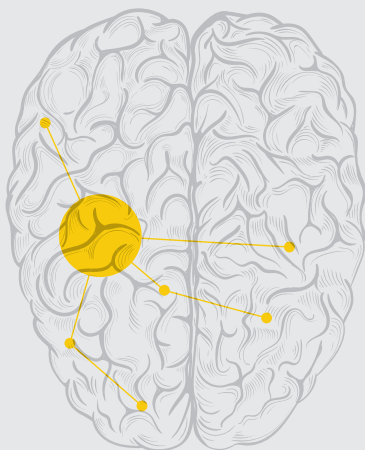
A region of the brain that is active in reading is the visual cortex, located in the occipital lobe of the brain. This region is responsible for visual stimuli, including written and printed representations of letters and words.



ROLE IN READING:

Orthographic Processing

Auditory Cortex Builds Oral Word Understanding



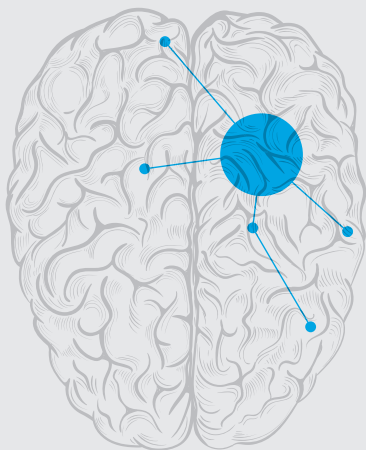
The auditory cortex is located in the temporal lobe of the brain. This area is responsible for recognizing and processing auditory stimuli. This recognition and processing of speech sounds is critical for early readers.



ROLE IN READING:

Phonological Processing

Angular Gyrus Associates Letters with Sounds



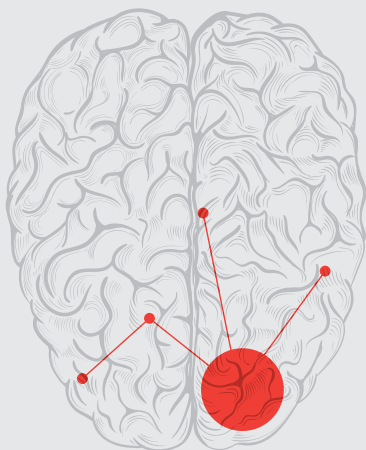
The angular gyrus—located in the parietal lobe—is involved in building connections between speech and print and vice versa. In addition to producing speech, comprehending it, and recognizing letters and words, a critical phase in the reading process is creating connections among all of these brain functions.



ROLE IN READING:

Sound-Symbol Connections and Semantic Processing

Frontal Lobe Produces Speech, Processes Meaning



The inferior frontal gyrus, located in the frontal lobe, is the primary region of the brain involved in speech production. The inferior frontal gyrus is also active as children gain greater fluency and accuracy in their speech and as they comprehend more complex language.



ROLE IN READING:

Speech Production, Fluency, and Comprehension

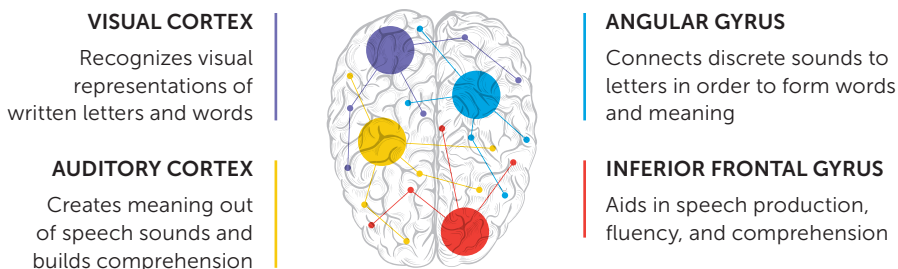
There Is No Single “Reading Region”

Reading is an incredibly complex activity that involves building neural pathways among these four discrete regions of the brain. Therefore, educators should provide sufficient direct instruction to develop the foundational skills associated with each function. This includes language fluency, phonological awareness, orthography, phoneme-grapheme correspondence, and fluency.

Interestingly, neuroscience indicates that there are physiological explanations for why it is critical for children to learn to read by Third-Grade. According to a longitudinal study conducted by UC San Francisco, the growth in volume of white matter—the neural pathways in a child’s brain—between kindergarten and Third-Grade is one of the best predictors of how well a child will learn to read. In fact, the study found that 56% of the variance in reading outcomes can be attributed to the change in volume of white matter during this critical time.

Reading Requires Building Neural Circuits Across Critical Brain Regions

Regions of the Brain Activated While Reading, as Viewed in fMRI Scans



Early Reading Instruction That Builds Neural Pathways Is Essential



The quality of reading instruction impacts a child’s brain white matter development—the neuropathways that connect areas of the brain

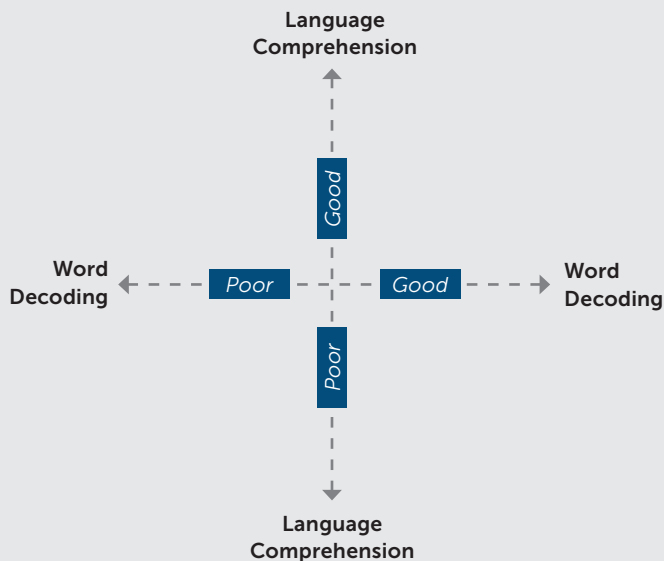
56%

Of variance in reading outcomes is accounted for by the change in volume in white matter between kindergarten and third grade

The Simple View of Reading

To simplify what is needed to become a strong reader, researchers—Philip Gough and William Tunmer—developed the **Simple View of Reading**, which captures the two skill sets necessary for reading comprehension. It's a basic multiplication equation which indicates that reading is a product of a student's ability to decode texts multiplied by his or her ability to understand the meaning of the texts. This means that developing one set of skills without sufficient development of the other set of skills will result in poor reading ability.

$$\text{Reading Comprehension} = \text{Word Decoding} \times \text{Language Comprehension}$$



Research Confirms: Strong Readers Decode

Unfortunately, too many students progress in school without fully mastering all foundational reading skills. More often than not, educators place greater emphasis on language comprehension than on word decoding. One reason is because teaching comprehension using engaging books is easier than teaching phonics. As a result, a large share of young readers are encouraged to use context clues and pictures to guess words they don't know, rather than decode them.

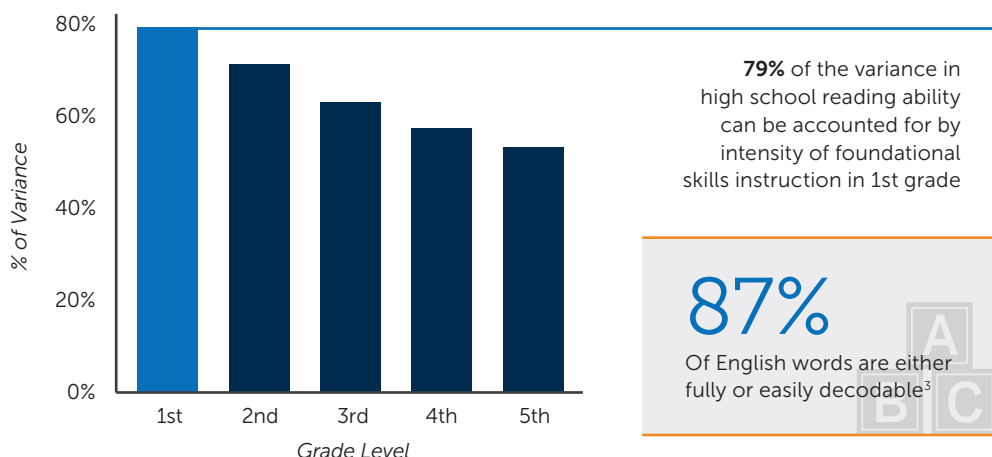
Numerous research studies across multiple disciplines have found that the best readers decode unfamiliar words, while poor readers guess.

The data below is from a longitudinal study conducted by Yale University that compared students' reading ability over the course of ten years. The study found that the primary distinguishing factor between strong and poor readers in high school was the intensity of their foundational skills instruction in first grade.

Given that decoding skills are clearly necessary for future reading success and most words in English are fully or partially decodable, it is imperative that educators provide all students with sufficient, direct instruction around word decoding.

A Focus on Foundational Skills in Early Grades Is Essential for Future Reading Success

Influence of Early Decoding Skills-Focused Instruction on Reading Comprehension Ability in Later Grades

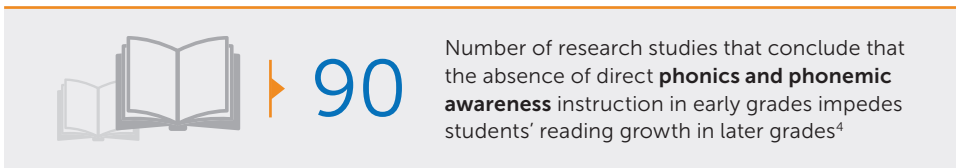


Limited Phonics Instruction Compounds Future Reading Struggles

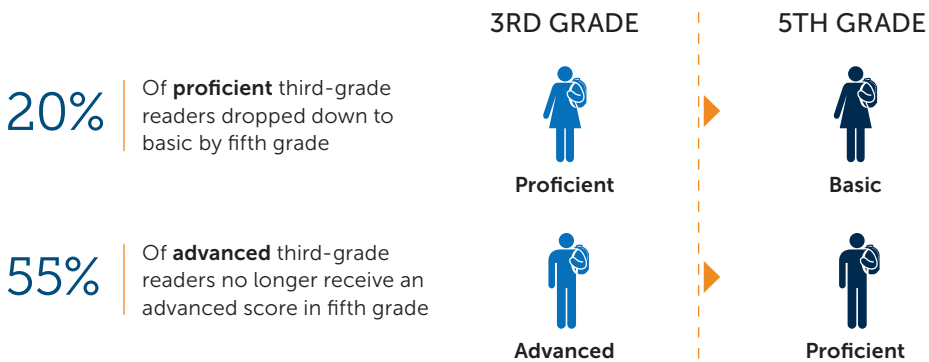
Insufficient phonics instruction in early grades can impede students' reading ability in later grades. The data below is from the Tennessee Department of Education, which suggests that the reading ability of a sizable share of students who appear to be advanced or proficient readers in third grade declines once they reach fifth grade. Districts nationwide also report seeing similar trends among elementary readers.

Poor phonics instruction is the primary driver behind this phenomenon, also known as the "fourth-grade slump." A student's strong visual memory and ability to guess unfamiliar words using pictures may in fact conceal a lack of foundational decoding skills. Although these students may appear to be strong readers in early grades when reading simple text with pictures, their reading ability is likely to decline in later grades when the texts become increasingly complex.

Providing students with a solid foundation in decoding skills increases the likelihood that they will be able to read complex texts—containing unfamiliar words—independently.



Insufficient Phonics Is Linked to the "fourth-grade Slump"



3

What Evidence-Based **Reading Instruction** Looks Like

Reading Mastery Is an Ongoing Progression

Phases of a Student's Reading Development

When teaching foundational skills throughout elementary school, research suggests educators should teach both word decoding and language comprehension in each grade, but at varying levels of intensity. Reading instruction in kindergarten through Third-Grade should have a greater focus on word decoding until students become fluent readers. Although comprehension, particularly vocabulary, should be incorporated in early-grade reading instruction, it should not be taught at the expense of providing young students sufficient practice in phonemic awareness and phonics.

WORD DECODING

Emerging

Pre-reader

5 years old and younger

- Aware of the letters in the alphabet
- Knows that language is made up of small units called words and even smaller units called letters
- Understands what books are and the kinds of experiences they can create

Novice Reader

Grades K-1

- Distinguishes between and blends sounds
- Aware of orthographic conventions, spelling patterns
- Uses semantic knowledge to aid decoding and vice versa
- Understands the alphabetic principle
- Develops strategies for sounding out unknown words
- Segments words into syllables, syllables into sounds

Decoding Reader

Grades 2-3

- Aware of the morphophonemic⁵ principles of language
- Reads more often and at increased speed (semi-fluency)
- Has added ~3,000 decodable words to one's lexicon

Fluent, Comprehending Reader

Grades 3-5

- Decodes nearly automatically, freeing up working memory for higher-level executive functioning

Research recommends that reading instruction should shift its focus to reading comprehension only when students demonstrate sufficient reading fluency. Once students have reached a level of automaticity in their decoding, they can then redirect some of their cognitive focus away from decoding words toward understanding the meaning of the text.

The chart below provides a sample summary of reading milestones across the early grades.

LANGUAGE COMPREHENSION

- Exposed to ample oral and written language through books and conversation
- Has a vocabulary of ~2,000 words and can understand ~10,000 words

- Able to recognize some words by sight
- Exposed to robust vocabulary, learning 2–3+ new words per day
- Can understand ~20,000 words

- Uses linguistic knowledge to distill meaning from text
- Can predict, retell
- Familiar with sight words and sight “chunks,” recognizable letter blends and morphemes
- Knows to reread and correct misunderstandings

- Understands the grammatical function of language
 - Applies morphology (roots, suffixes, prefixes) to comprehend complex words
 - Uses metaphor, inference, and analogy accurately
 - Independently connects prior knowledge to text to deduce greater meaning
 - Relies on reading to build ongoing knowledge
-

What Does the Science Mean for **Word Decoding?**

Direct Instruction on Decoding Skills Is Fundamental for Early Grades

It is imperative that reading instruction in the earliest grades establishes a strong foundation in word-decoding skills. Becoming a proficient reader is dependent on a young reader's mastery of phonemic awareness (sounds that make up words), print concepts (the written representation of those sounds and words), and phoneme-grapheme correspondence (recognizing and distinguishing the relationship between speech sounds and print).



Phonemic Awareness

Direct instruction in recognizing and producing the **44 sounds (phonemes) in the English language** is critical for students who are starting to learn to read, particularly for ELLs. English has more phonemes compared to Arabic with 36, Mandarin with 29, and Spanish with 24.



Mastery of Print Concepts

Recognizing letters and basic elements of print is foundational to mastering the **orthography** or writing system of English. Teachers should create multiple and meaningful exposures to print to introduce students to the **alphabetic principle**. Examples of basic elements of print include the front and back of the book, title of the book, where to begin reading, capital letters, and lowercase letters.



Phoneme-Grapheme Correspondence

Once students have acquired the alphabetic principle, teachers should explicitly explain how each of English's 44 speech sounds maps to a letter or letter combination (grapheme). Placing **sound walls** in early grades' classrooms helps students practice individual sound-symbol correspondences. To make a sound wall, teachers should pair **photos of the oral pronunciation** of all 44 sounds with each one's corresponding letter or letter combination.

What Does the Science Mean for **Comprehension?**

Developing Good Readers Requires Ongoing Comprehension Support

Early-grade reading instructors should provide ongoing, direct instruction around comprehension skills, which are also foundational to future reading success. The content below provides a few recommendations for teaching comprehension in early grades.



Morphological Awareness

Young readers should expand their knowledge of morphology, or **the study of how words are formed and structured**. Morphology allows students to identify potential meanings of unknown words by recognizing and connecting morphemes (prefixes, roots, and suffixes). Morphological awareness can also help students build connections across multiple languages.



Explicit Vocabulary Instruction

Vocabulary instruction is critical in early grades, particularly for low-income students and non-native English speakers who are exposed to significantly fewer words than their peers. Research suggests that all students need to encounter a new word **at least 12 times** before they can easily recognize and use it.



Expanding Background Knowledge

When working to improve language comprehension, teachers should select books that expand upon students' background knowledge. It is important for teachers to be mindful that not every student will be familiar with a word, concept, or cultural experience as a result of their backgrounds and past experiences. Teachers should **build upon students' existing background knowledge**, while also **expanding it through a diverse selection of texts**.

4

The **Disconnect** Between the Science of Reading and Schools

Most Reading Instruction Fails to **Align with Science**

Unfortunately, there is an alarming disconnect between what scientific research recommends for reading instruction and what actually happens in most classrooms. The majority of teachers receive minimal preparation and guidance around how to teach foundational skills, let alone learn the basic facts of human cognition and reading development. In fact, approximately 80% of elementary teachers either provide cursory instruction around phonemic awareness or do not teach it at all. Not surprisingly, most teachers encourage students to rely heavily on pictures and context clues to guess unfamiliar words, rather than emphasizing decoding.

Sufficient training and guidance on the science of reading and how to teach foundational word-decoding skills are imperative to improve reading outcomes.

Limitations of Status Quo Early Elementary Reading Instruction

60% 

Of elementary teachers have **never been trained** in strategies for teaching phonemic awareness, phonics, vocabulary, fluency, and comprehension

95% 

Of early elementary classrooms **spend insufficient time** providing direct instruction on all English phonemes

80% 

Of early elementary teachers encourage students to **use pictures or context clues** to identify unfamiliar words

“

A look at the research reveals that the methods commonly used to teach children to read are inconsistent with basic facts about human cognition and development and therefore make learning to read more difficult than it should be....In short, what happens in classrooms isn't adequate for many children.

MARK SEIDENBERG

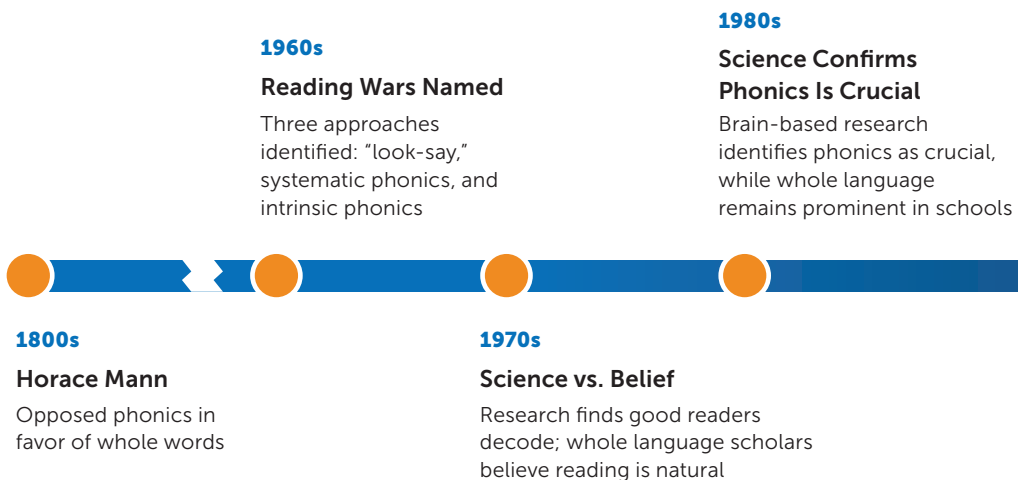
Cognitive Neuroscientist, University of Wisconsin-Madison

Reading Wars Overshadow Brain-Based Research

Schools are not entirely at fault for the evident disconnect between brain-based research and classroom realities. For many decades, educators have been inundated with competing ideas about teaching reading. Those who debate reading tend to fall into one of two camps: those who believe in phonics instruction and those who believe in whole-language instruction. The ongoing reading wars—debates between these two viewpoints—make it difficult for educators to know what really works.

It wasn't until the 1970s and 80s that scientists from various fields began studying reading as a cognitive function. Science confirmed that reading required direct instruction around phonics and foundational skills. This body of scientific research continued to proliferate but still fails to inform classroom instruction.

Reading Wars Timeline



In 2000, Congress assigned a National Reading Panel to comprehensively review reading research and provide schools with a report of evidence-based recommendations. The National Reading Panel concluded that schools needed to increase phonemic awareness and phonics instruction in early grades.

In response to the National Reading Panel’s recommendations, many schools adopted a “balanced literacy” approach to teaching reading. The goal of this approach is to expose students to engaging texts while providing phonics instruction. In reality, however, many teachers who have been ill-prepared to teach these skills continue to provide insufficient instruction around foundational skills.

2000

Five Pillars of Reading Established

Congress assigns the National Reading Panel (NRP)⁶ to review science reading research. NRP advocates for more phonics instruction in schools.

1990s

Whole Language Persists but Falters

NAEP scores show negative impact of whole-language instruction

2001

Balanced Literacy Emerges

Schools adopt balanced literacy to meet NRP recommendations



Most districts claim they are doing ‘balanced literacy.’ In practice, this means that whole language got repackaged. **People briefly teach phonics, but phonics is treated like salt on a meal.** A little here and there, but not too much. The problem with teaching just a little bit of phonics is that phonics is crucial when it comes to learning how to read.

EMILY HANFORD

Hard Words: Why Aren’t Kids Being Taught to Read?

Higher Education **Inadequately Prepares Teachers**

Most Higher Ed Programs Fail to Teach the Science of Reading

Scientific reading research has also had minimal impact on teacher preparation programs, and the vast majority of teacher education programs fail to adequately prepare teachers to teach reading. A recent study conducted by the National Center for Teacher Quality (NCTQ) examined reading-related course and degree requirements across schools of education. The findings reveal that few teacher education programs provide any opportunities for future teachers to learn the science of reading or receive training in evidence-based instruction strategies.

Equally troubling, many teacher-licensing exams across the country do not require elementary teacher candidates and special education candidates to demonstrate knowledge of the five components of reading and evidence-based reading instruction. Given that teachers are rarely taught this information and are usually not expected to learn it, it is not surprising that many teachers struggle to provide high-quality reading instruction.

Most Schools of Education Fail to Prepare Educators to Teach Reading

31%

Of teacher preparation programs devote no coursework to reading science

39%

Of teacher undergraduate elementary education programs provided instruction in all five components of reading

46%

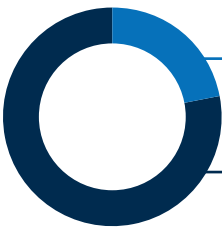
Of undergraduate elementary education programs teach phonemic awareness

23%

Of graduate elementary education programs teach scientifically based reading methods

Most State Teacher-Licensing Exams Fail to Test the Five Components of Reading

Percentage of State Teacher-Licensing Exams That Test Teachers' Reading Knowledge
n=51



22%

Require a test of the science of reading for elementary and special education teacher candidates

78%

Do not require a test of the science of reading for both elementary and special education teacher candidates

“

What these programs most often teach is not to adopt the whole language approach, but that the candidate should **develop her own approach to teaching reading, based on exposure to various philosophies and approaches, none more valid than any other.**

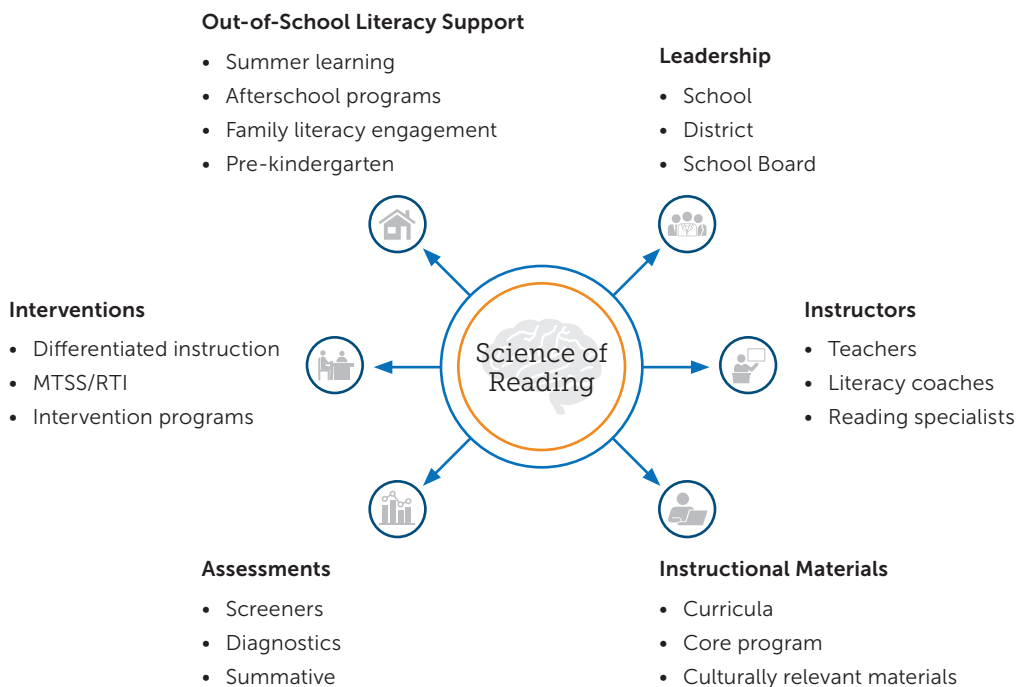
KATE WALSH

President, NCTQ, 21st-Century Teacher Education

Reading Education Remains Disconnected from Science

Science Has Had Little Impact on What Happens in Schools

Unfortunately, nearly every aspect of what most districts are doing is disconnected from the science of reading. Not only is it unlikely for district staff to learn this information in their education programs, but it is also unlikely that they will learn it within their school communities. A major root cause to our nation’s reading problem is the limited districtwide knowledge of the science of reading and its implications for students. To promote lasting change, school leaders and teachers need to be aware of science of reading and align their reading systems accordingly. Even though the onus largely falls on higher education institutions to provide necessary teacher training, schools and students cannot afford to wait for schools of education to change. Ultimately, all students deserve a teacher who is adequately prepared to teach them to read and a school that has evidence-based systems and supports in place.



5

The Road to Lasting **Reading** **Success**

Success Is Possible: Science Critical for Improvement

Districts That Have Aligned Systems with Science Dramatically Improve

Fortunately, large-scale reading success is achievable and has been demonstrated. Through our research, EAB has identified several districts that have dramatically improved reading outcomes, even among at-risk student populations.



DEMOGRAPHICS



PERFORMANCE BEFORE

Rapides Parish

Alexandria, LA
32 elementary schools

- FRPL 69%; Title I: 94%
- Black: 43%
- Hispanic: 3%
- IDEA: 11%
- LEP: 2%

46%

Of kindergarteners reading on or above grade level in 2016

Bethlehem Area School District

Bethlehem, PA
16 elementary schools

- FRPL 57%; Title I: 82%
- Black: 10%
- Hispanic: 39%
- IDEA: 17%
- LEP: 6%

47%

Of kindergarteners scored at or above the DIBELS benchmark composite score in 2015

Grant County Schools

Petersburg, WV
2 elementary schools

- FRPL 46%; Title I: 50%
- Black: 1%
- Hispanic: 1%
- IDEA: 18%
- LEP: 0.3%

43rd

Lowest-performing school district out of 55 districts total in the state in 2010

Interestingly, these districts did not collaborate with one another, but they all implemented a remarkably similar approach to improving reading, leading to similarly impressive results.

Our series of interviews with leaders from these districts revealed that their success was the result of integrating the science of reading into each reading-related system, rather than deploying a standalone program or initiative.



PERFORMANCE AFTER

99%

Of kindergarteners reading on or above grade level in 2017



WHAT THEY DID

- Science-of-reading training
- Data summits
- Skills-based grouping
- Summer learning focused on literacy

84%

Of kindergarteners scored at or above the DIBELS benchmark composite score in 2018

- Science-of-reading training
- New curriculum
- Skills-based grouping
- Summer learning focused on literacy

6th

Highest-performing school district out of 55 districts total in the state in 2016

- Science-of-reading training
- Data summits
- Skills-based grouping
- Summer learning focused on literacy

Road map for **Improving Reading Outcomes**

The framework to the right maps out four critical imperatives and their corresponding best practices for districts that are working to improve reading outcomes. These strategies derive from districts that have achieved large-scale reading success over the span of several years.

To support district leaders in deploying similar systematic change, EAB offers a series of research briefs and toolkits that details **14 best practices that collectively improve reading outcomes.**

LEARN MORE

Contact your EAB Dedicated
Advisor or visit eab.com



1

Develop and Sustain Schoolwide Expertise in the Science of Teaching Reading

by training teachers and principals on the science of reading and investing in internal trainers to sustain district-wide knowledge.



2

Aid Teachers in Implementing Science-Based Instruction

by aligning instructional materials, instructional guidance, ongoing coaching, and teacher evaluations to the science of reading.



3

Redesign Small Group Instruction to Target Student Skill Deficits

by grouping students by foundational skill need and pairing them with teachers who demonstrate expertise in teaching skills most relevant to student needs.



4

Mitigate Summer Slide with Engaging Summer Programming

by embedding fun, student-centered activities in summer learning programs and offering literacy suggestions for working families who are unable to utilize these programs.

1. Science of Reading Professional Development
2. Train-the-Trainer Sustainability Plan
3. Grassroots Pilot Success Models
4. Principal Literacy Champions
5. Instructional Materials Selection Tools
6. Science-Directed Literacy Look-Fors
7. Video-Based Teacher Observations
8. Literacy Implementation Evaluations
9. Skills-Based Grouping
10. Cross-Classroom Intervention Specialists
11. Camp-Style Summer Literacy
12. Online Video Enrollment Campaigns
13. Summer School Attendance Incentives
14. Parent-Facing Literacy Nudges

Visit EAB's **Reading Resource Center**

Interested in learning more on this topic? Visit our “narrowing the third-grade reading gap” resource center at eab.com/ReadingResourceCenter.

EAB's District Leadership Forum provides ongoing support to help our members pursue the **strategies needed to address the reading skill gap and integrate the science of reading into the elementary classroom**. The resource center houses a wide array of related research and tools, including more information on “Embracing the Science of Reading” as well as on-demand webconferences and corresponding implementation toolkits on the following topics:



Develop and Promote Schoolwide Expertise in Science-Based Reading Instruction

Learn strategies for building principal and teacher expertise and transferring that knowledge into classroom action.



Redesign Small Group Instruction to Target Student Skill Deficits

Understand proven ways to enhance the effectiveness of small group reading instruction and intervention.



Mitigate Summer Slide with Engaging Summer Programming

Explore strategies for mitigating the impact of summer slide by improving engagement in summer reading programs and supporting students who cannot attend summer learning experiences.

Bring the Science of Reading into the Classroom

While our brains are naturally set up to learn to speak, learning to read does not happen on its own. Early readers must develop certain parts of the brain and build connections between brain areas that were not connected before.

EAB's **infographic**, created for the elementary classroom, explains how our brains learn to read. Share this infographic across your district's elementary schools to illustrate the four different areas of our brains that we use when reading and the critical skills that help develop them.

How Our BRAINS Learn to Read

Reading is an important and fun skill that nearly everyone can learn with time and practice. Our brains are naturally set up to learn to speak, but learning to read does not happen on its own. Scientists have found that we must develop certain parts of our brains and build connections between brain areas that were not connected before. The picture below shows **four different areas of our brains** that we use when we read.

VISUAL CORTEX
This part of our brain helps us see things. We use this part when we look at and recognize written letters and words.
Skill in Reading: Orthographic Processing

ANGULAR GYRUS
This brain area helps us connect sounds with letters and letters with sounds. We use this part of our brain to hear words aloud or to generate and to put words on a page.
Skill in Reading: Sound-Semantic Connections and Semantic Processing

AUDITORY CORTEX
This brain area allows us to hear and tell the difference between sounds in spoken language. When we read, we use this part of our brain to identify the sounds that make up words.
Skill in Reading: Phonological Processing

INFERIOR FRONTAL GYRUS
This part of our brain helps us make speech sounds, form words and sentences, and understand the meaning of what we listen to and read.
Skill in Reading: Sound Production, Fluency and Comprehension

We Need to Teach Our Brains to DECODE to Become Good Readers
What we learn in school can help us build the brain connections that we need to read. The four decoding skills below help develop different parts of the brain. It is important that kindergarten, first grade and second grade spend a lot of time in the classroom practicing these skills because they are the building blocks of reading.

At least 50% of our K-2 reading block time should focus on learning to decode. We must develop our vocabulary and comprehension skills, but learning to decode is a critical first step in becoming a fluent reader.

Phonological Awareness
It is important that we can recognize all of the sounds in the English language so we can read. We use this skill to identify and manipulate the sounds in words. Sound walls in our classrooms can help us learn how to make these unique sounds.

Print Concepts
To become readers, we must also recognize the letters of our alphabet, the basic parts of a book, and the specific ways that print must be read. Pointing out the front and back of a book, capital letters, lowercase letters, and punctuation marks can help us understand how writing works.

Phonics & Word Recognition
Once we know our sounds and the alphabet, we can begin to put them together to read words. We learn phonics when our teachers help us to sound out words and know which letters make which sounds. When we become good at this skill, we can read and spell many words.

Fluency
Now that we've learned about the connections between sounds, letters, and words, we can start to read together. We practice reading words and books! The more we practice reading our words, the easier it will become to recognize both new and familiar words on the page.

Learn more about the strategies and systems needed to improve student reading outcomes by visiting our resource center on learning to read: eab.com/readingresourcecenter

EAB District Leadership Forum

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Visit eab.com/ReadingResourceCenter or contact your Dedicated Advisor to request copies to distribute across your district.

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Sources

Page 2: The Nation's Report Card, 2018, NAEP Data Explorer.

Page 3: The Nation's Report Card, 2018, NAEP Data Explorer; APM Reports, 2018, Hard Words: Why Aren't Kids Being Taught to Read?

Page 4: Achieve, 2018, Proficient vs. Prepared; Achieve, 2017, 2016–2017 State ELA and Math Assessments in Grades 3–8.

Page 5: Education Commission of the States (2017), "Creating Preventative, Rather Than Reactive, Policies to Boost Third Grade Literacy"; US Department of Education, America Reads Challenge (1999); "Start Early, Finish Strong: How to Help Every Child Become a Reader"; Ann E. Casey foundation (2010), "Early Warning: Why Reading by the End of Third Grade Matters"; Arellano, A et al. (2015), "Michigan Achieves: Becoming a Top Ten Education State," The Education Trust; Center for Public Education (2015), "Learning to Read, Reading to Learn."

Pages 6–7: National Center for Education Statistics, 4-Year Postsecondary Graduation Rate; National Center for Education Statistics, 2-Year Postsecondary Graduation Rate; Georgetown University, Center on Education and the Workforce, 2017, "Career Pathways: Five Ways to Connect College and Careers"; Pew Research Center, 2017, "5 Facts about Student Loans."

Page 9: Boulton, D (2015), "An Interview with Dr. G. Reid Lyon—Converging Evidence—Reading Research What It Takes to Read"; Loyd, G (2009), "Reading Difficulties: Prevention, Early Intervention, and Remediation"; Kilpatrick, D (2015), "Essentials of Assessing, Preventing, and Overcoming Reading Difficulties."

Pages 12–13: Ritchter, D et al. (2017) "The Age of Hominin Fossils from Jebel Ironeo, Morocco and the Early Stone Ages"; Spar, I. (2004) "Histories of Writing," The Metropolitan Museum of Art.

Page 18: Konnikova, M (2015) "How Children Learn to Read," *The New Yorker*; Seidenberg, M (2017) *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*.

Page 19: Gough, P; Turner, W (1986), "Decoding, Reading and Reading Disability."

Page 20: Shaywitz et al. (1999), "Persistence of Dyslexia: the Connecticut Longitudinal Study at Adolescence"; Student Achievement Partners, "Foundational Skills Guidance Documents: Grades K-2"; Kilpatrick, D (2015), "Essentials of Assessing, Preventing, and Overcoming Reading Difficulties"; Reed, D (2016), "The Importance of Phonics Instruction for All Students," Iowa Reading Research Center."

Page 21: Tennessee Department of Education (2016), "Setting the Foundation: A Report on Elementary Grades Reading in Tennessee"; https://www.researchgate.net/publication/242710402_Phonemic_Awareness_and_Phonics; Lyon, R (2009), "Reading Difficulties: Prevention, Early Intervention, and Remediation." Southern Methodist University; Seidenberg, M (2018), *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*; Mathes, P (2015), "The Case of Early Intervention in Reading."

Pages 24–25: Wolf, M, *Proust and the Squid: The Story and Science of the Reading Brain*, 2007; Temple et al., *All Children Read: Teaching for Literacy in Today's Diverse Classrooms*, 4th ed., 2010; Virtual Speech Center, "Speech and Language Development Milestones," 2018; Loraine, S, "Vocabulary Development," (2008); Lyon, R, "Reading Difficulties: Prevention, Early Intervention, and Remediation," Southern Methodist University, 2009.

Page 26: Source: The National Reading Panel (2000), "Teaching Children to Read"; American Speech-Language-Hearing Association (2018), "Phonemic Inventories and Cultural and Linguistic Information Across Languages"; Seidenberg, M (2017) *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*, Basic Books, New York; Irujo, S, "What Does Research Tell Us About Teaching Reading to English Language Learners?" "Print Awareness: Guidelines for Instruction," Reading Rockets; Castles et al. (2018), "Corrigendum: Ending the Reading Wars: Reading Acquisition from Novice to Expert," Association for Psychological Science.

Page 27: U.S. Census Bureau.

Pages 30–31: Kilpatrick, D (2015), "Essentials of Assessing, Preventing, and Overcoming Reading Difficulties"; Seidenberg, M (2018), *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*.

Pages 32–33: Kim, J (2008), "Research and the Reading Wars"; APM Reports, 2018, Hard Words: Why Aren't Kids Being Taught to Read?

Pages 34–35: National Center on Teacher Quality (NCTQ), 2018, NCTQ Databurst: Strengthening Reading Instruction through Better Preparation of Elementary and Special Education Teachers; NCTQ, 2018, 2018 Teacher Prep Review; Education Next, 2013, Vol. 13, No. 3, 21st-Century Teacher Education; NCTQ, 2016, Landscapes in teacher prep, undergraduate elementary ed; Walsh, K, Glaser, D, & Wilcox, D, 2006, What Education Schools Aren't Teaching about Reading and What Elementary Teachers Aren't Learning.

EAB interviews and analysis.

Endnotes

- 1) National Assessment of Educational Progress.
- 2) English Language Learners.
- 3) Fifty percent of English words are fully decodable; 37% of words are mostly decodable with the exception of one sound, many of which can be solved by knowledge of prefixes, roots, and suffixes.
- 4) All 90 studies were reviewed by the National Reading Panel.
- 5) The relationship between sounds and word units and the rules that govern their pronunciation.
- 6) The NPR recommends the five reading pillars: phonemic awareness, phonics, vocabulary, fluency, and reading comprehension.



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