



Leading for Literacy

What Every Superintendent Needs to Know About
the Science of Reading

District Leadership Forum



Making **education smarter** and our **communities stronger**

1,900+
Institutions served

7,500+
Peer-tested best practices

95%
Partners renew annually

In service to **public institutions**

K-12
Research

Community Colleges
Student Success Technology

4 Year Colleges & Universities
Enrollment Services

District Leadership Forum

160
School districts served

25+
Staff members

365
Days of support

The District Leadership Forum

3

Research Services to Inform Decisions, Secure Buy-In, and Accelerate Progress



National Best Practice Research



Comprehensive Solution Roadmaps



PD Resources & Practice Guides



Diagnostic Assessment Tools



Tailored On-Demand Research



Rapid Fact Finding



Custom Research Reports



100+ Reports in Custom Library



Year-Round Consultative Support



Expert Consultations & Decision Support



Onsite Presentations & Workshops



Executive Roundtables & Virtual Events



EAB's Definition of Best Practice:

- ✓ **Innovative**
- ✓ **Proven**
- ✓ **Replicable**

Recent Studies

Academic Outcomes and Equity

- Closing the College Access Gap
- Meeting the Career Readiness Imperative
- Narrowing the 3rd Grade Reading Gap

Behavioral and Mental Health

- Managing Behavioral Disruptions in the Early Grades
- Responding to the Adolescent Mental Health Crisis

Talent and Leadership

- Preparing Principals to Lead

Additional Pandemic Response Priorities

- Planning for Safe Building Re-Opening
- Improving Virtual Teaching and Learning
- Designing Policies and Practices for Equity & Justice
- Preventing Teacher Burnout

Recovering Pandemic-Related Lost Learning Requires Coordinated Message



Accelerate Academic Progress

What EAB partners are asking

How can we limit the impact of pandemic disruptions on future opportunities and ambitions for today's students?



Proactively Support Student Mental Health

How can we meet the growing need for mental and behavioral health support without overwhelming district resources?



Create Conditions for Employees to Thrive

How can we turn the tide on burnout and make education a more sustainable and attractive profession for current and future talent?



Navigate the Era of Digital Transformation

How can we leverage ed-tech and digital infrastructure to achieve district objectives, while avoiding duplicative costs or underutilized investments?



Setting Strategy and Communicating Vision

How can we prioritize our demanding workload, making informed decisions to increase community trust?

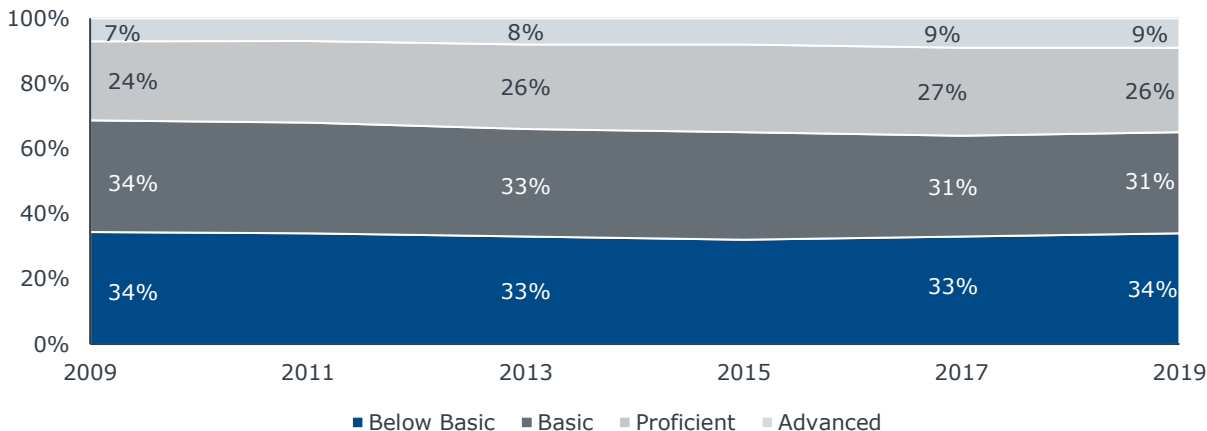


Far Too Many Kids Can't Read at An Early Age



NAEP¹ 4th Grade Reading Scores Persistently Low

Percent of Students Scoring at Each Achievement Level, 2009-2019



Minimal Growth in Reading Outcomes Over the Last Decade

4%

Percentage point increase in share of 4th grade students **at or above proficiency** over the past ten years

65%

Of 4th graders are reading **at or below basic** levels on NAEP in 2019

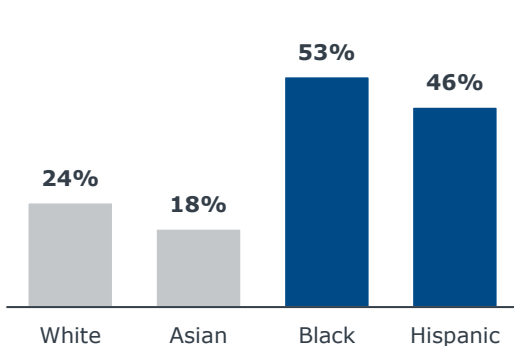
1) National Assessment of Educational Progress.

Source: The Nation's Report Card, 2019, [NAEP Data Explorer](#); EAB interviews and analysis.

Poor Reading Outcomes Transcend Demographics

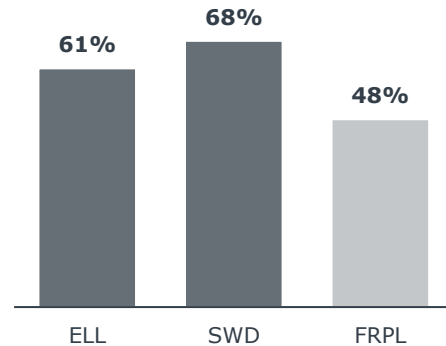
While Minority Students Are At Risk for Poor Reading Scores...

% of 4th Graders Performing Below Basic Reading Levels on NAEP, by Race/Ethnicity (2019)



...Special Populations Are the Furthest Behind in Reading

% of 4th Graders Performing Below Basic Reading Levels on NAEP, by Population Classification¹ (2019)



A Significant Share of Students from Highly Educated Families Struggle to Read



30%

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

1) ELL= English Language Learners, SWD = Students with Disabilities, FRPL= Free- and Reduced-Price Lunch.
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Assessment Debates Shouldn't Distract from Realities

8

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

Struggle to Learn Other Subject Areas

3rd

Grade marks the shift to reading to learn. Students' reading ability becomes essential to success in other subjects

Rarely Catch Up In Reading

75%

Of students who do not read proficiently by 3rd grade never reach reading proficiency in future grades



Less Likely to Attend College

54%

Decrease in likelihood that struggling readers in 3rd grade will attend college, compared to their more proficient peers

Face Challenges Finding Living Wage Jobs

93M

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

Source: 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](#)"; EAB interviews and analysis.

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

Virtually Every Student Can Learn to Read

Almost All Students Have the Cognitive Capacity to Read

Distribution of Early Readers' Cognitive Ability, According to the National Institutes of Health

1 Capable of Learning Regardless of Environment

These students will learn how to read, regardless of instructional quality

1

2

2 Able to Learn With High Quality Tier 1 Instruction

Half of students will learn to read from explicit and direct instruction in foundational skills

4 Struggle with Severe Cognitive Impairments

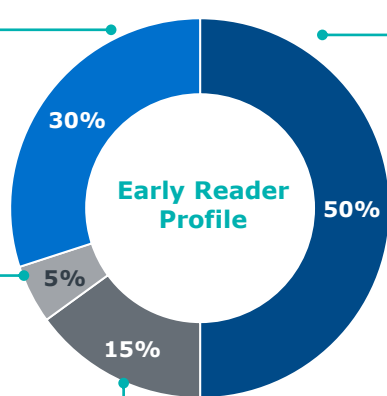
Small subset of students have severe cognitive disabilities and will likely struggle to read throughout their schooling

4

3

3 Require Additional Time and Support

Minimal share of students will eventually enter tier 1 with additional attention and support



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

Source: National Center for Education Statistics (2017) "Reading Performance, NCES" Lyon, R. (2009) "Reading Difficulties: Prevention, Early Intervention, and Remediation." Southern Methodist University; Kilpatrick, D. (2015) "[Essentials of Assessing, Preventing, and Overcoming Reading Difficulties](#)"; Mathes, P. (2015) "The Case of Early Intervention in Reading"; EAB interviews and analysis.

A Different Approach Is Needed to Improve Reading

District-Funded Initiatives Appear Insufficient in Improving Scores

Districts Invest Significant Time and Resources on Reading...



Extending School Days or Literacy Time Blocks



Hiring Literacy Specialist 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)¹

✓ **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

Source: Lipsey, M et al. (2013) "Evaluation of the Tennessee Voluntary Prekindergarten Program: Kindergarten and First Grade Follow-Up Results from the Randomized Control Design;" EAB interviews and analysis.

1) Most recent RCT and longitudinal study examining the effects of Pre-K on reading outcomes; N=1070 students attending publicly funded preschools in Tennessee. ©2020 by EAB. All Rights Reserved. eab.com

Good News: Science Provides a Blueprint for Reading



Decades of Neuroscience Research Provides 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, SUNY¹ Cortland

”

Source: 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](#),” EAB interviews and analysis.

Human Brains Are Not Naturally Wired to Read

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

Timeline of Spoken and Written Language in Relation to Human History

Spoken Language



Modern humans first emerged in Africa around 200,000 years ago and communicated using spoken language

198,000 B.C.E.

Written Language



Cuneiform, the earliest written language, dates back to Mesopotamia around 5,500 years ago

3,500 B.C.E.

Books



Johannes Gutenberg invented the printing press, which created the first mass-produced book, *The Gutenberg Bible*

1439

2019

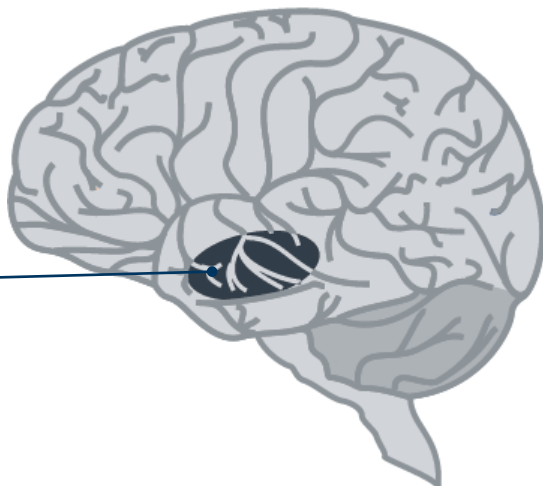
<3%

Of human existence includes written language and reading. **The human brain has not evolved to learn reading naturally.**

Auditory Cortex Builds Oral Word Understanding

Auditory Cortex

- Located within the temporal lobe
- Processes auditory stimuli transmitted through the ears
- Contains Wernicke's area, known for its role in speech comprehension



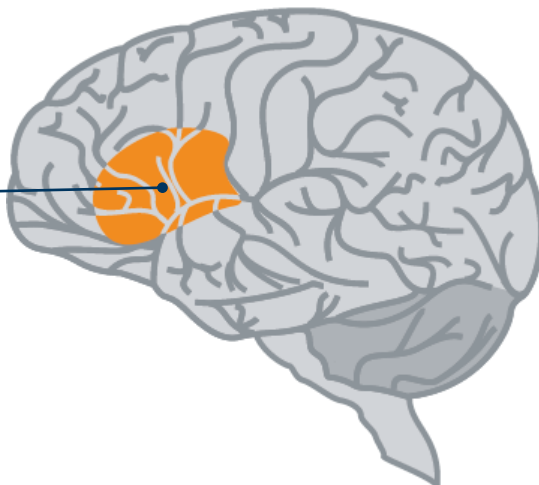
Role in Reading: Phonological Processing

Critical for the discernment and recognition of unique speech sounds, which is foundational to the decoding process

Frontal Lobe Produces Speech, Processes Meaning

Inferior Frontal Gyrus

- Located within the frontal lobe, which deals with executive functioning and higher-order processing
- Includes Broca's area, known for its role in speech production
- Linked to a semantic hub that assists in processing meaning



Role in Reading: Speech Production, Fluency, and Comprehension

Essential for multiple functions, including grammatical usage, effective speech production, and language comprehension



Visual Cortex

- Located within the occipital lobe
- Processes visual stimuli transmitted through the eyes



Role in Reading: Orthographic Processing

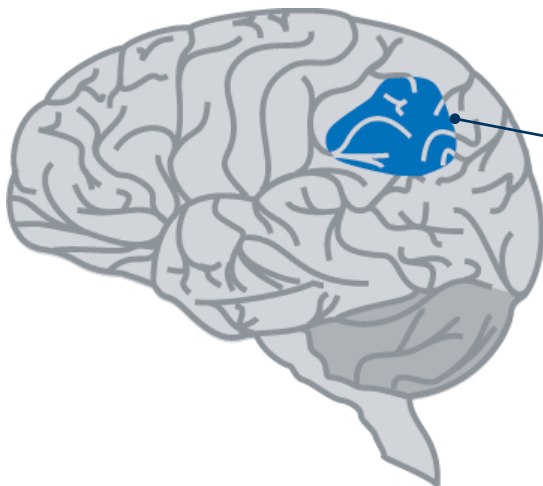
Recognizes and processes visual information conveyed through written letters and words

Source: Harvard Medical School, Department of Neurobiology, "[Reading and the Brain](#)," 2018; Burns, "[The Reading Brain: How Your Brain Helps You Read, and Why it Matters](#)," FastForward by Scientific Learning, 2017; Pegado et al., "Brain Pathways for Mirror Discrimination Learning During Literacy Acquisition," 2014; Buchweitz et al., "Brain Activation for Reading and Listening Comprehension: An fMRI Study of Modality Effects and Individual Differences in Language Comprehension," 2011; Seidenberg, *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*, 2017; EAB interviews and analysis.

Angular Gyrus Associates Letters with Sounds



16



Angular Gyrus

- Located within the parietal lobe
- Responsible for many multimodal functions
- Links semantic, phonological, and orthographic processors



Role in Reading: Sound-Symbol Connections and Semantic Processing

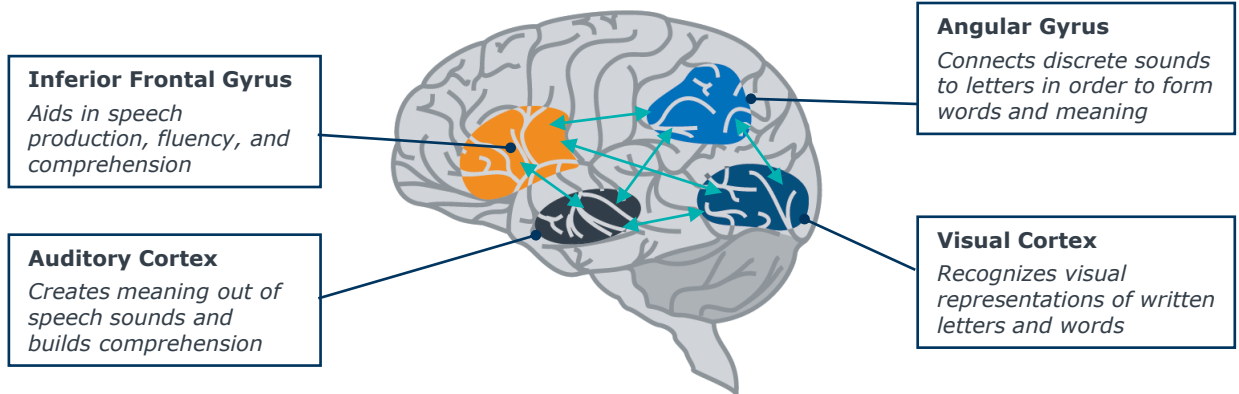
Makes connections between sounds and visual representations of letters and words, which is critical for speech-to-print and print-to-speech circuits

Source: Harvard Medical School, Department of Neurobiology, "[Reading and the Brain](#)," 2018; Burns, "[The Reading Brain: How Your Brain Helps You Read, and Why it Matters](#)," FastForward by Scientific Learning, 2017; Pegado et al., "Brain Pathways for Mirror Discrimination Learning During Literacy Acquisition," 2014; Buchweitz et al., "Brain Activation for Reading and Listening Comprehension: An fMRI Study of Modality Effects and Individual Differences in Language Comprehension," 2011; Seidenberg, *Language at the Speed of Sight: How We Read, Why So Many Can't, and What Can Be Done About It*, 2017; EAB interviews and analysis.

There Is No Single “Reading Region”

Reading Requires Building Neural Circuits Across Critical Brain Regions

Regions of the Brain Activated While Reading, as Viewed in fMRI¹ Scans



Early Reading Instruction that Builds Neural Pathways Is Essential



The quality of reading instruction impacts a child’s white matter development—the neural pathways 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 3rd grade

1) fMRI= Functional Magnetic Resonance Imaging

Research Distinguishes Strong From Poor Readers



Key Differences Between Strong and Poor Readers, According to Numerous Studies

1 Strong readers rely heavily on decoding skills

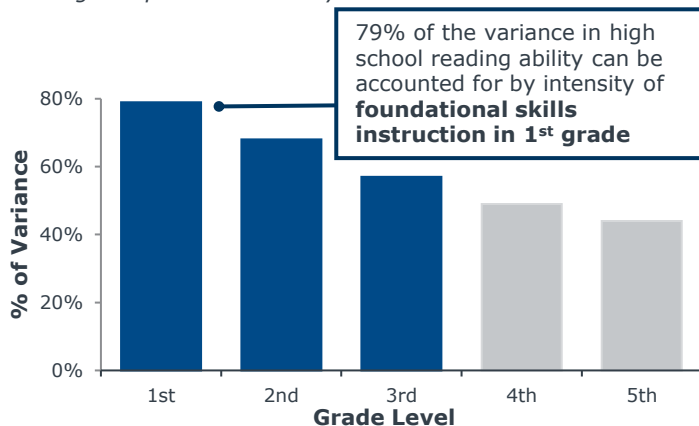
- Adelman (2012)
- Frost (1998)
- Gringirenko & Naples (2008)
- Halderman, et al. (2012)
- Pugh & McCardle (2009)
- Share (1995)

2 Poor readers rely heavily on context clues

- Corkett & Parrila (2008)
- Nation & Snowling (1998)
- Rack et al. (1992)
- Van Den Broeck & Geudens (2012)

A Focus on Foundational Skills¹ in Early Grades is Essential for Future Reading Success

Influence of Early Decoding Skills-Focused Instruction on Reading Comprehension Ability in Later Grades²



87% Of English words are either fully or easily decodable³

1) Phonological awareness, print concepts, phonics/word recognition, and fluency
2) Results from a ten-year longitudinal study out of Yale University; n=445 randomly selected kindergarten students.
3) 50% 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

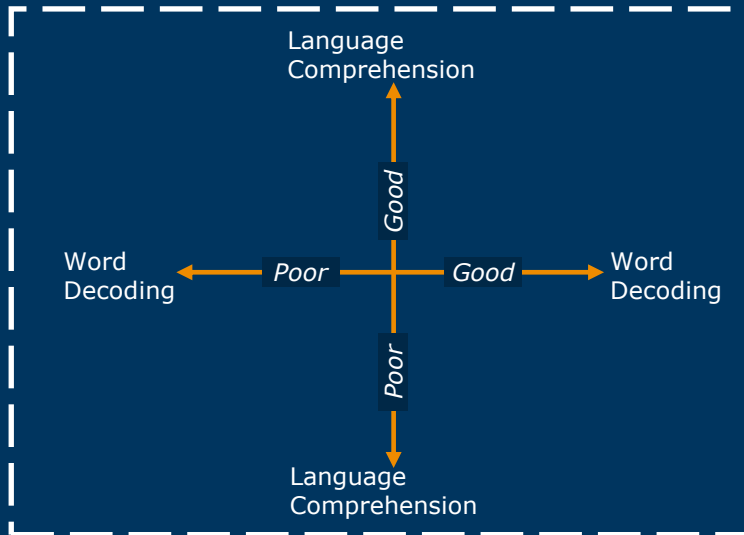
Source: Shaywitz, et al., (1999) "Persistence of Dyslexia: the Connecticut Longitudinal Study at Adolescence;" Student Achievement Partners, "[Foundational Skills Guidance Documents: Grades K-2](#)"; Kilpatrick, D. (2015) "Essentials of Assessing, Preventing, and Overcoming Reading Difficulties"; Reed,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



The Simple View of Reading

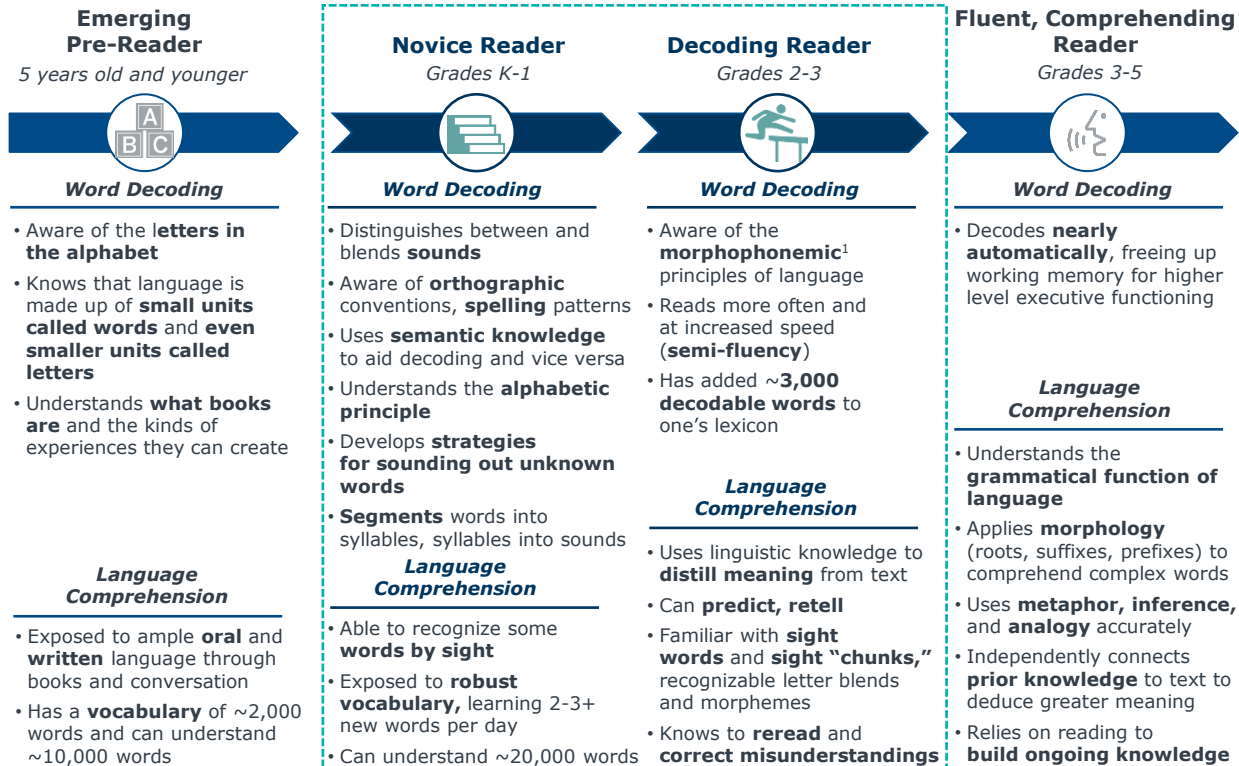
Research-Based Equation for How Students Learn to Read

Reading Comprehension = Word Decoding \times Language Comprehension



Reading Mastery Is an Ongoing Progression

Phases of a Student's Reading Development



1) The relationship between sounds and word units and the rules that govern their pronunciation ©2020 by EAB. All Rights Reserved. eab.com

What Does the Science Mean for Comprehension?

Developing Good Readers Requires Ongoing Comprehension Support

1 Morphological Awareness

Explicit instruction in **morphology, or the study of the structure of words and word formation**, helps students build lifelong comprehension skills by recognizing the meaning of word roots, prefixes, and suffixes. Direct instruction in morphology also helps ELL students make connections between English words and words in other languages.

Example of Word Comprehension through Morphology

Prefix	Root	Suffix	Full Word
un-	system	-atic	Unsystematic
<i>Negates, "opposite of"</i>	<i>noun, "an organized process"</i>	<i>converts noun to adjective</i>	<i>Something that is not done according to an organized plan or process</i>

2 Explicit Vocabulary Instruction

Teachers can help **narrow the word gap** by using more robust vocabulary in class and teaching at least 2-3 new words per day in 1st and 2nd grades and at least 6-8 new words per day for 3rd grade and older.¹

Recommendation for Vocabulary Instruction

12

Average number of times that early readers need to encounter a new word before they know it well enough to improve comprehension

3 Expanding Background Knowledge

Teachers should consider the **requisite background knowledge needed to access a text** and use pre-reading discussions to familiarize students with new words and concepts. Culturally diverse and responsive materials can facilitate **text-to-self and text-to-world connections**, while helping students develop an excitement for reading.



See the Appendix for a sample of multi-cultural texts by age level, based on the Teachers' Choices Reading List, and for strategies to aid ELLs² in language comprehension.

1) 800+ words per year in grades 1-2; 2,000+ words per year in grades 3+
2) English language learners

Source: Irujo, S. "What Does Research Tell Us About Teaching Reading to English Language Learners," Reading Rockets; Fromkin et al. (2011), *An Introduction to Language*, 9th ed.; Lyon, R. (2009) "Reading Difficulties: Prevention, Early Intervention, and Remediation," Southern Methodist University; EAB interviews and analysis.

What Does the Science Mean for Word Decoding

Direct Instruction on Decoding Skills is Fundamental for Early Grades

1 Phonemic Awareness

Direct instruction related to recognition and production of the **44 speech sounds (phonemes) in the English language** is critical for students who are starting to learn to read, particularly for ELLs.¹



See the [Science of Reading Implementation Guide](#) for a list of 44 English phonemes and links to lists of phonemes that prove challenging for ELLs.

Language	Number of Speech Sounds
English	44
Haitian Creole	32
Mandarin	29
Spanish	24

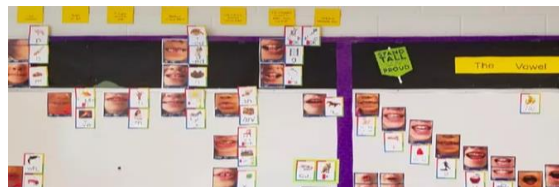
2 Mastery of Print Concepts

Recognizing letters and basic elements of print (*see right*) is foundational to mastering the **orthography** (writing system) of English. Teachers should create multiple and meaningful exposures to print to introduce students to the **alphabetic principle**.²

- | | |
|--------------------------|--------------------------------|
| ✓ Front, back of book | ✓ First, last word in sentence |
| ✓ Title of the book | ✓ First, last word on page |
| ✓ Where to begin reading | ✓ Capital letter |
| ✓ One letter | ✓ Lowercase letter |
| ✓ One word | ✓ Punctuation marks |

3 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). **Sound walls** in early grades that include photos of each oral pronunciation help students practice individual sound-symbol correspondences (*see right*).



1) English language learners

2) The systematic relationship between the written letters of an alphabet and its sounds

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; EAB interviews and analysis.

Most Reading Instruction Fails to Align with Science

Typical Classrooms Rarely Incorporate the Science of Reading

Limitations of Status Quo Early Elementary Reading Instruction



Unfamiliarity with Foundational Reading Skills

60%

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



Oversimplified Phonemic Awareness

95%

Of early elementary classrooms **spend insufficient time** providing direct instruction on all English phonemes¹



Overemphasis on Using Context Clues for Decoding

80%

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

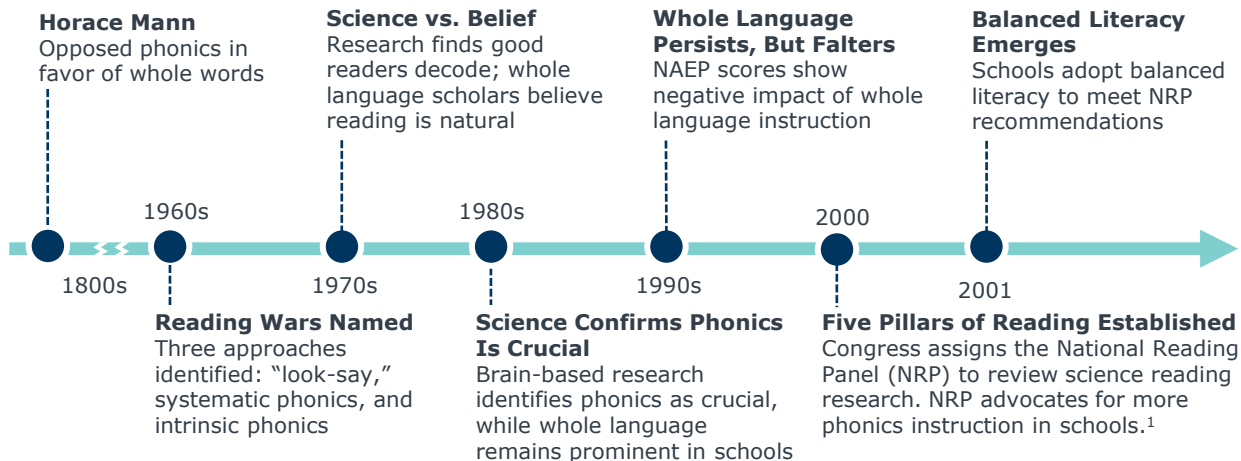
“A look at the research reveals that **the methods commonly used to teach children to read are inconsistent with basic facts about human cognition and development** and therefore make learning to read more difficult than it should be... In short, what happens in classrooms isn’t adequate for many children.”

Mark Seidenberg, Cognitive Neuroscientist, University of Wisconsin-Madison

1) In fact, most 2nd-4th grade curricula and assessments stop monitoring phonemic awareness, even though phonics skills continue to develop through fourth grade (David Kilpatrick, 2015)

Source: 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;” EAB interviews and analysis.

Reading Wars Overshadow Brain-Based Research



“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?" (2018)

Higher Education Inadequately Prepares Teachers

Almost All Higher Ed Programs Fail to Teach the Science of Reading

Most Schools of Education Fail to Prepare Educators to Teach Reading

31% Of teacher preparation programs devote **no coursework to reading science**¹

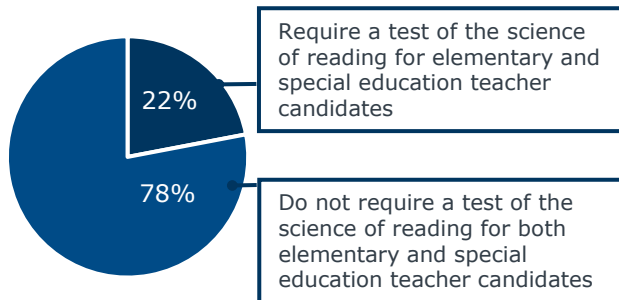
39% Of teacher undergraduate elementary education programs provided **instruction in all 5 components of reading**²

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

% of State Teacher Licensing Exams That Test Teachers' Reading Knowledge (n=51)



”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*

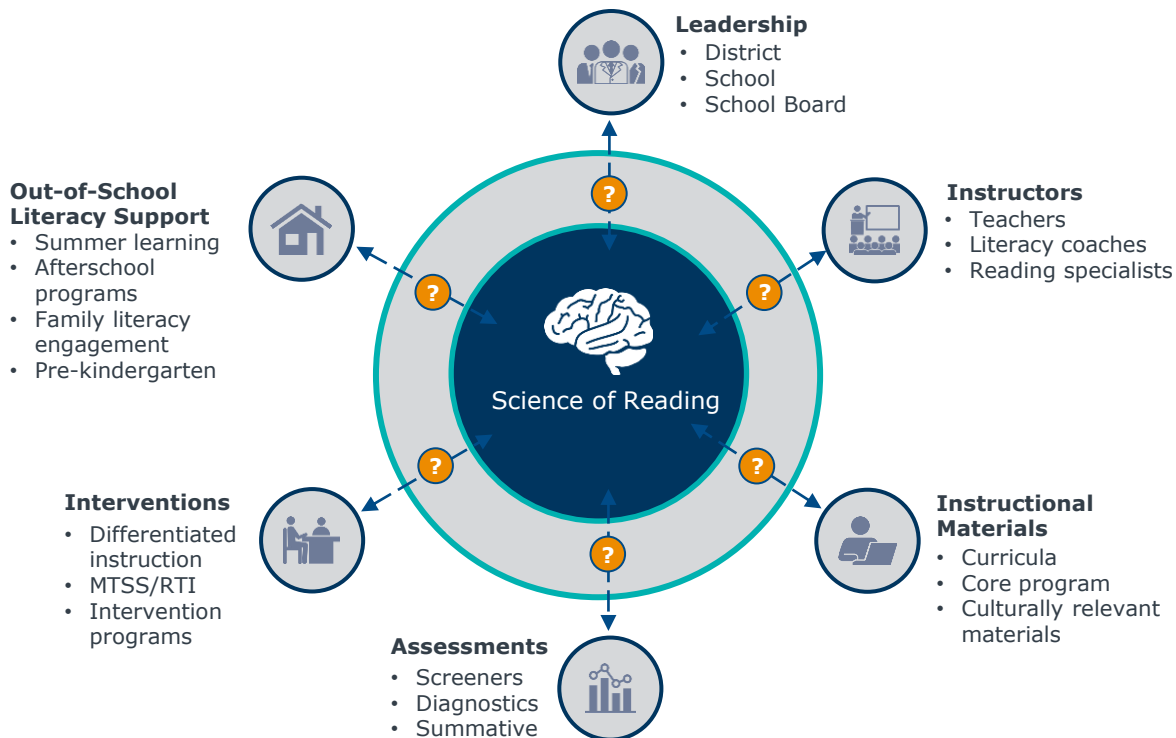
1) N = 72 teacher preparation program syllabi.

2) N = 820 undergraduate elementary education programs.

Reading Systems Remain Disconnected from Science







26

Science Has Had Little Impact on What Happens in Schools



Success Is Possible: Science Critical for Improvement

Districts that Have Aligned Systems with Science Dramatically Improve

	 Demographics	 Performance Before	 Performance After
Rapides Parish  <i>(32 elementary schools)</i>	FRPL 69%; Title I: 94% Black: 43% Hispanic: 3% IDEA: 11% LEP: 2%	18% Of third graders reading on or above grade level in 2016	63% Of third graders reading on or above grade level as of March 2019
Bethlehem Area School District  <i>(16 elementary schools)</i>	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	84% Of kindergarteners scored at or above the DIBELS benchmark composite score in 2018
Grant County Schools  <i>(2 elementary schools)</i>	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	6th Highest-performing school district out of 55 districts total in the state in 2016

Source: Louisiana Department of Education, 2018, [2017 and 2016 DIBELS Reading Reports](#); American Public Media, 2018, [Hard Words: Why aren't kids being taught to read?](#); Grant County Schools, WV; EAB interviews and analysis.

Narrowing the Third Grade Reading Gap

Embracing the Science of Reading to Ensure All Students Can Read

1

Develop and Sustain Schoolwide Expertise in the Science of Teaching Reading



1. Science of Reading Professional Development
2. Train the Trainer Sustainability Plan
3. Grassroots Pilot Success Models
4. Principal Literacy Champions

2

Aid Teachers in Implementing Science-Based Instruction



5. Instructional Materials Selection Tools
6. Science-Directed Literacy Look-For
7. Video-Based Teacher Observations
8. Literacy Implementation Evaluations

3

Redesign Small Group Instruction to Target Student Skill Deficits



9. Skills-Based Grouping
10. Cross-Classroom Intervention Specialists

4

Mitigate Summer Slide with Engaging Summer Programming



11. Camp-Style Summer Literacy
12. Online Video Enrollment Campaigns
13. Summer School Attendance Incentives
14. Parent-Facing Literacy Nudges

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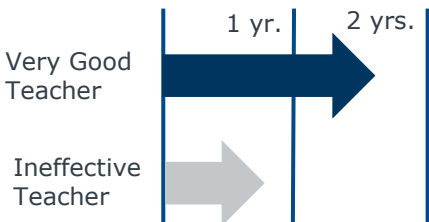
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Teachers Ill-Prepared to Teach Reading Effectively

Teachers Rarely Learn the Science of Reading Prior to Entering Classroom

Wide Consensus that Teachers are Critical to Student Success...

Students Gain 1.5 Years of Learning with an Effective Teacher



Teachers Have Greatest Impact on Student Learning

“When it comes to student performance on reading and math tests, a teacher is estimated to have two to three times the impact of any other school factor....”

RAND Study, Teachers Matter: Understanding Teachers' Impact on Student Achievement

...But Too Often Teachers are Prepared Inadequately to Teach Reading

39%

Of teacher preparation programs teach scientifically-based reading methods

25%

Of pre-service teachers report a strong focus on the essential components of early reading instruction in their preparation program

46%

Of pre-service teachers felt that they were adequately prepared to teach phonemic awareness and phonics

Source: Hanushek, E. 2010., [The Difference is Teacher Quality](#); RAND, 2012, [Teachers Matter: Understanding Teachers' Impact on Student Achievement](#); National Center for Education Evaluation and Regional Assistance, 2010, [Study of Teacher Preparation in Early Reading Instruction](#); National Center on Teacher Quality, 2016, [Landscapes in Teacher Prep: Undergraduate Elementary Ed](#); EAB interviews and analysis.

Reading Professional Development Not Filling Void

Districts Are Investing Time in Professional Development...



Professional learning communities



Early release days



Data days



Coaching

...But Not Enough Time Concentrated on Reading Knowledge

14 hrs.

Minimum time required for new content to impact academic outcomes



47%

Of public school teachers report participating in **8 or fewer hours** of reading professional development yearly

Allocated Time Squandered on Wrong Topics



Focusing on curriculum without prerequisite knowledge



Discussing book selections for theme rather than developmental appropriateness



Learning interventions without full knowledge of why students struggle to read

Science of Reading Critical Knowledge for Teachers

Refocus Professional Learning for Teachers to Impart Essential Information

Learning Outcomes of LETRS¹ Provide Teachers the Science of Reading



How the **brain learns to read** and its implication for educators



Allocate time effectively to enhance reading outcomes



Deep understanding of the **five foundational reading skills** and how to teach them



Supports for **building vocabulary**



Strategies for assessing and **addressing individual student skill deficits**



Knowledge of evidence-based instructional practices for both **ELL and students with disabilities**

Vendor Overview:

LETRS, Voyager Sopris Learning



Comprehensive Modules Provide Explicit Reading Instruction Advice

Recommended Core Requirements

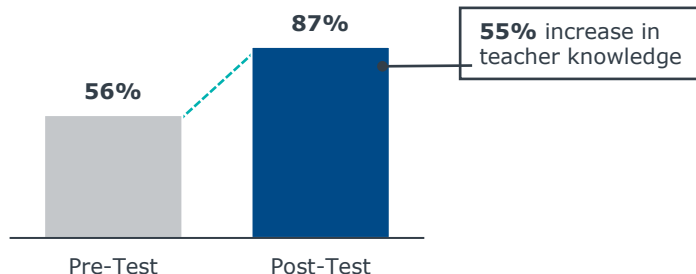
- 1 The Challenge of Learning to Read
- 2 The Speech Sounds of English
- 3 Teaching Beginning Phonics, Word Recognition, and Spelling
- 4 Advanced Decoding, Spelling, and Word Recognition
- 5 The Mighty Word: Oral Language and Vocabulary
- 6 Digging for Meaning: Understanding Reading Comprehension
- 7 Text-Driven Comprehension Instruction
- 8 The Reading-Writing Connection

Teacher Knowledge and Ability Improves

LETRS-Trained Teachers Better Equipped to Improve Student Outcomes

Increase in Teacher Knowledge of Teaching Foundational Reading Skills

Increase of Teachers' Knowledge of the Science of Reading as Measured by Correct Responses on LETRS Test in OH, 2016-17¹



“Why Didn’t We Learn This Earlier?”

“For our teachers, true learning is occurring, and the light bulb is being turned on. So many of these teachers have said, ‘How were we not taught these skills in college?’”

Alana Cohen, ELA Curriculum Specialist, Rapides Parish, LA

LETRS Contributes to Reading Success

Example of reading success in districts that have used LETRS

7% → 60%

Increase in students achieving “probable reader” on STAR assessment in **Rapides Parish Schools** in one year

78%

Increase in the percentage of Kindergarten students in **Bethlehem Area School District** scoring at or above benchmark on DIBELS over 3 years

1) n = 255; teachers were trained in units 1-4 of LETRS.
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Source: Education Week Webinar. 2018. [Develop Your Teachers Into Literacy Experts](#); Voyager Sopris Learning. 2018. [LETRS: Language Essentials for Teachers of Reading and Spelling, Elementary](#); American Public Media. 2018. [Hard Words: Why aren't kids being taught to read?](#); EAB interviews and analysis.

Delivery Methods Provide Flexibility for Districts

Three Delivery Models Available to Adjust to District Needs and Costs



In-Person Delivery Support Varies to Meet Districts' Budget Allocations



District Trainer or Facilitator



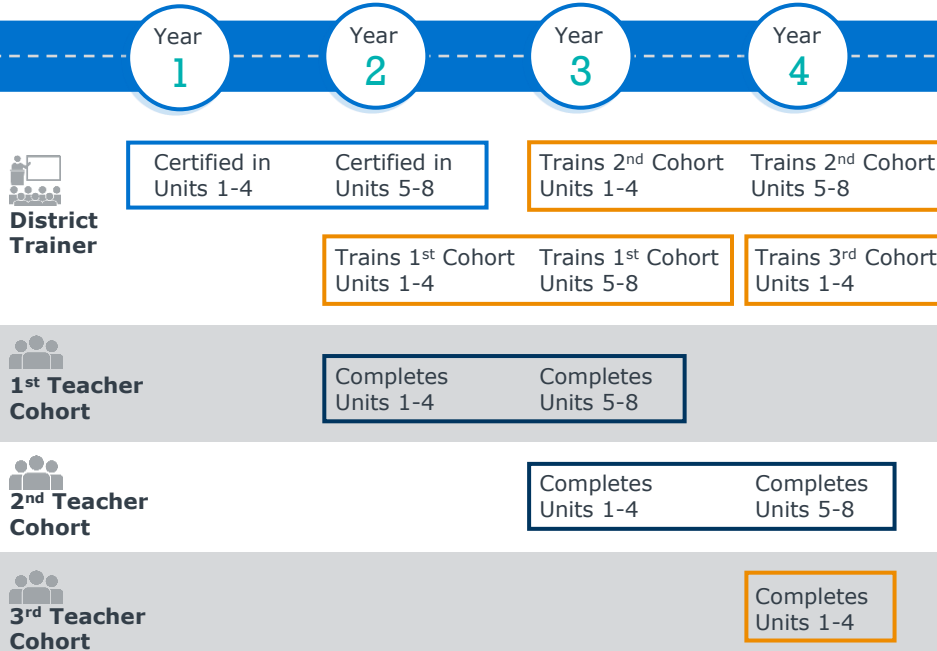
Independent Consultant



Certified National Trainer

Internal Experts Provide Cost-Saving Sustainability

Recommended Four Year Train-The-Trainer Rollout for LETRS



Implementation Considerations

Suggested Trainer

- Literacy specialist
- Instructional coach
- Master teacher

Delivery Format

- PLCs and early release
- Summer training
- Teacher "out days"



Record video-trainings so teachers can review on their own time

Cost Savings

\$15K

Average fixed cost savings per year in the 3rd year of using the train the trainer model



Build Initiative Momentum with Pilot Sites

Determine Best Pilot Approach Based on District Needs and Strengths



Single Pilot School Site

Selection Criteria

- Demographics that reflect district composition
- Average to lagging academic performance compared to the district
- Strong school leadership



Shows that the whole district can succeed because **pilot site reflects demographics of district**



Demonstrates student **progress at multiple grade levels**



Allows student **success to build year over year** because all teachers trained

Profiled Institution:

K-12 Public School District, Northeast



Districtwide Kindergarten Pilot



Excites Kindergarten teachers because they see their **students performing at higher levels** than ever before



Excites teachers in the next grade across schools because they **receive more prepared students**



Demonstrates **districtwide success** rather than a pocket in one school



Builds a **districtwide cohort** of grade-level teachers

Profiled Institution:

Bethlehem Area School District, PA





Principals Create Building-Level Environment for Literacy Instruction

✓ Set **building-level priorities and focus** year-to-year

✓ Determine **teacher hiring** criteria and make school-level hiring decisions



✓ Help determine **professional development** offerings

✓ Oversee and conduct **teacher observations and evaluations**

But Principals Have No More Knowledge of Literacy Than Teachers

“Principals help to set the foundations for school success, but **we were finding that many of the principals themselves did not have much background in the science of reading...** Some principals shared similar teacher beliefs that some students were unlikely to make much reading improvement by third grade because of non-school factors beyond their control. After all, this is how it’s always been. We had to change our mindset.”

*Jack Silva, CAO
Bethlehem Area School District*



Establish a “No Excuses” Leadership Mindset

Prepare Principals to Be Building-Level Literacy Leaders and Advocates

1 Data Summit

District convenes a principal data summit as a call to action to initiate literacy change



Inaugural Urgency Data Summit

- District **sets expectation for improved performance** by highlighting underperformance in current data and challenging the status quo
- District sets expectation that **data summits will be replicated at the building level**

2 Science of Reading Training

Principals participate in science of reading professional development¹ to build their knowledge and prepare them to answer tough questions from teachers

3 Change Management Training

Principals participate in change management professional development to give them tools to lead their teachers through literacy change



Change Management Training

- Principals **discuss real-time case scenarios to identify practical solutions** from science of reading PD
- District leaders and principals **develop a collective set of talking points** for resistant teachers
- Principals have network to connect with in real time for **support on tough questions**

Profiled Institution:



Bethlehem Area School District, PA

1) Principals went through LETRS training on units 1, 2, 3, and 7.



Create Systems to Sustain Literacy Leadership

Principals Recreate Data Summits at Their Schools

4 School-Level Data Summit

Convene data summits for teachers to analyze data to catalyze a mentality of change

5 Science of Reading Training for Teachers

Select initial cohort of teachers for LETRS training and create roll out plan for subsequent grades

6 Bi-Monthly Data Meetings

Lead bi-monthly data summits with teachers to review DIBELS results and instructional needs for students



Repeat steps 1-3 for principals and 4-6 for buildings on a yearly basis to maintain focus on literacy.

Principals Engage in Continued Cross-District Collaboration



Establish Collaborative Online Platforms for Principals

- Create a password-protected online document sharing system using a free or inexpensive platform (e.g., Google Docs)
- Principals share resources, talking points, and regularly collaborate with each other



Quarterly Meeting Between District and School Leaders

- Elementary principals meet on a quarterly basis to analyze school and student data
- Principals share best practice strategies from their schools



Principals Become Informed Reading Advocates

Principals Know What Works and Make More Effective Reading Decisions

Principal Knowledge and Decision Making Improves

40% → 95%

Increase in principals who believed that all kids could read when provided science-based instruction

85%

Of principals report greater clarity around what it takes to improve reading outcomes

80%

Of principals report making at least one change in their decisions to better support literacy

Principals Adjust Practice to Promote the Science of Reading



Principals incorporate **new hiring questions** about prospective teachers' level of comfort with change in addition to literacy knowledge



Principals provide more targeted and **informed guidance and feedback** on literacy instruction



“Rather than saying a student ‘needs more reading support’ in a generic way, **school staff can now discuss the skill needs of struggling readers**. They can figure out whether a student’s poor performance is linked to needing help with speech sounds or with matching the letters with the speech sounds.”

Jack Silva, CAO
Bethlehem Area School District

Narrowing the Third Grade Reading Gap

Embracing the Science of Reading to Ensure All Students Can Read

1

Develop and Sustain Schoolwide Expertise in the Science of Teaching Reading



1. Science of Reading Professional Development
2. Train the Trainer Sustainability Plan
3. Grassroots Pilot Success Models
4. Principal Literacy Champions

2

Aid Teachers in Implementing Science-Based Instruction



5. Instructional Materials Selection Tools
6. Science-Directed Literacy Look-For
- 7. Video-Based Teacher Observations**
8. Literacy Implementation Evaluations

3

Redesign Small Group Instruction to Target Student Skill Deficits



9. Skills-Based Grouping
10. Cross-Classroom Intervention Specialists

4

Mitigate Summer Slide with Engaging Summer Programming



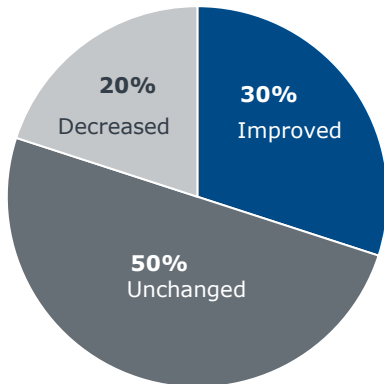
11. Camp-Style Summer Literacy
12. Online Video Enrollment Campaigns
13. Summer School Attendance Incentives
14. Parent-Facing Literacy Nudges

Translating Teacher Knowledge to Action a Challenge 42

Teachers Struggle to Bring Their Learning into the Classroom

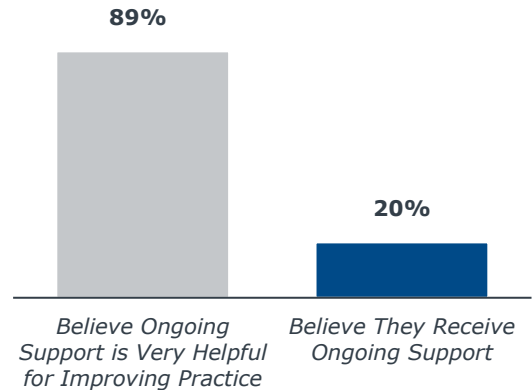
Inconsistent Translation of Professional Learning to Teacher Practice

% Breakdown of Teacher Performance Change After Participating in Professional Development¹



Limited Ongoing Implementation Support a Key Barrier

Discrepancy Between Teachers' Desires for Ongoing Support and Reported Experiences²



1) N=10,000 teachers; TNTP performance quality review was measured using evaluations and observations over a two-to-three year period.

2) N=20,000 teachers.

Source: Gates Foundation, "Primary Sources: America's Teachers on Teaching in an Era of Change"; TNTP, "[Billions of Dollars in Annual Teacher Training is Largely a Waste](#)," 2015; EAB interviews and analysis.

Multiple Roadblocks to Changing Teacher Practice

Teacher Knowledge Is Only the First Stop to Improving Instruction

Infrequent Feedback and Coaching: Existing coaching offerings are often infrequent and brief, providing marginal value to teachers



Limited Practical Guidance: While teachers may learn the theory behind scientifically-sound literacy instruction, they receive little guidance on how to translate theory into practice



Few Accountability Metrics to Ensure Theory Translates To Practice: School leaders rarely monitor teacher implementation of professional development knowledge designed to improve student outcomes

Coaching Proves Essential for Teacher Success



High-Frequency Coaching and Feedback Powerful Drivers of Change

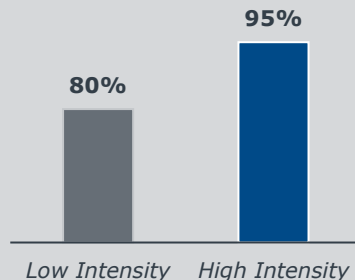
Coaching and Feedback Most Effective for Changing Teaching Practice

% of Teachers Who Demonstrate Knowledge of New Skills vs. Those Who Applied Them in the Classroom¹

Professional Learning Strategy	Demonstration of Knowledge	Classroom Application
Theory and Discussion	10%	0%
Observing a Demonstration in Training	30%	0%
Practice in Training	60%	5%
Coaching in Classroom	95%	95%

But Are Only as Effective as Their Frequency and Consistency

% of Teachers Who Changed Practice Based on Coaching Intensity



Low intensity = once or twice/semester
High intensity = once or twice/month

50

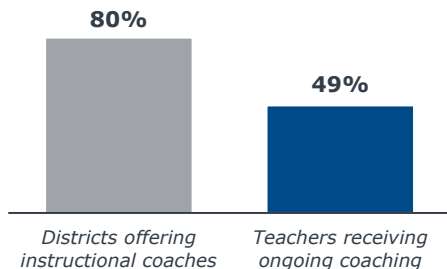
Number of hours of instruction, practice, and coaching teachers need before a new teaching strategy is mastered, implemented in class

1) Summary of a meta-analysis of the effects of training and coaching on teachers' implementation in the classroom

Source: Joyce and Showers, "Designing Training and Peer Coaching: Our Needs for Learning," 2002; "Teacher Perceptions of Instructional Coaching," PIIC, <http://piic.pacoaching.org>; Sailors M, Price L.; Gulamhussein A, "Teaching the Teachers," Center for Public Education, <http://www.centerforpubliceducation.org/teachingtheteachers>; EAB interviews and analysis.

Districts' Limited Coaching Capacity Hinders Impact

While Instructional Coaches Are Common, Intensive Coaching is Rare...



...Due to Limited In-School Capacity



Minimal time for observations and meaningful feedback and reflection



Prohibitively costly to hire enough coaches to serve teachers at scale



Administrators stretched too thin to supplement coaching

Teachers Left with Insufficient Guidance on Classroom Practice

1

Infrequent, Surface-Level Observations

Observations focus on basic teacher competencies, such as lesson plan preparation, timeliness, and classroom management

2

Delayed Feedback

Coaching and related feedback typically delivered weeks after class observation; delay makes feedback less impactful, actionable for teacher

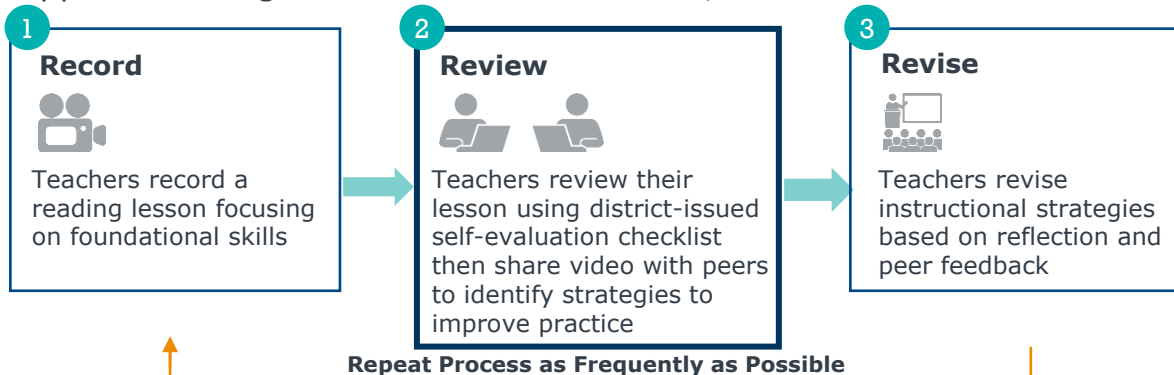
3

Limited, Brief Coaching Sessions

Few coaching conversations grounded in observation of basic teacher competencies, not geared towards substantial development

Expand Opportunities for Ongoing Support

Support Teaching Excellence with Sustained, Actionable Feedback



Three-Step Review Process



Self-Evaluation

Following prescribed instructional checklist, teachers self-review their lessons on video



Peer-to-Peer Discussions

Teachers then use checklist to observe a colleague's video and provide feedback accordingly



Exemplary Modeling

Highest quality videos are used as models and presented in professional learning communities





Profiled Institution:
 Cedar Rapids Community SD, IA



Cedar Rapids
 Community School District
Every Learner. Future Ready

Guidance Needed to Ensure Meaningful Reflection

Self-Evaluation Checklists Help Teachers Identify Room for Growth

	Phonological Awareness		<ul style="list-style-type: none"> Organize checklist according to foundational components of literacy instruction 
	Did I clearly state the learning target ?	✓	
	Did I provide scaffolds ? (e.g., chips, tiles, tapping)	✓	
	Model: Did I provide the "I do" (my voice only)	✓	
	Guided Practice: Did I include the "we do" (my voice with students)		<ul style="list-style-type: none"> Use checklist as opportunity to remind teachers of critical pedagogical processes 
	Independent Practice: Did I include the "you do" (students choral and/or individual response)	✓	
	Did I use a signal ? (i.e., verbal or non-verbal cue)		
	Did I complete this component in 2 minutes or less ?	✓	<ul style="list-style-type: none"> Provide concrete metrics to assist in timing and pacing of lessons 
	Did I review the learning target for phonological awareness?		
	Phonological Awareness Total:	5/8	<ul style="list-style-type: none"> Include opportunity for teachers to self-grade lessons in a non-punitive way 



Access the complete set of checklists in the [Science of Reading Implementation Guide](#).

Supplemental Coaching Model Serves Many Needs

Video Observations Encourage Formative Feedback and Reflection



Awareness of One's Own Practice

Teachers become aware of their own instructional weaknesses through self-observation and reflection



Ongoing Feedback and Discussion of Implementation

Conversations on practice provide feedback from a wider variety of sources in a non-punitive way



Opportunities to Observe Others

Observation of exemplary lessons models execution of science-informed instruction

Impact: Teachers report **realizing and correcting critical areas** in need of improvement

Impact: Increase in number of **collaborative conversations** between teachers, principals

Impact: 67% increase in teacher fidelity to scientifically-based reading instruction

"We made assumptions that our teachers were aligning their practices to the science of reading, but we realized that there wasn't an understanding of what this looked like in instruction. Teachers are noticing components of lessons not aligned with the science and are refining their processes. **We're seeing the growth in both student and teacher mastery.**"

*Val Dolezal, Executive Director
Cedar Rapids Community School District*

9.1% ↑

Increase in K-3 literacy growth in first year of implementation

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Non-Specific Data Often Drives Student Grouping

Many Teachers Group Students Using Imprecise Universal Screener Data



Universal screeners or CBMs¹ are commonly used to group students with similar average benchmark scores or reading levels, even though **this data does not provide insight on the precise nature of students' reading needs**

90%

Of teachers **maintain generic reading groups**, without diagnosing the precise reasons behind students' reading levels

Examples of Non-Specific Grouping Categories

- ✓ *Red, Yellow, Green, Blue*
- ✓ *Above Benchmark vs Below Benchmark*
- ✓ *Advanced vs Struggling*
- ✓ *Level A, B, and C Groups*

Common Screeners or CBMs: AIMS Web, DIBELS, STAAR, Texas Primary Reading Inventory, DRA

1) Curriculum Based Measurements

Source: Sparks, S. (2018) "[Are Classroom Reading Groups the Best Way to Teach Reading? Maybe Not,](#)" Education Week; Hall, S (2006) "I've Dibel'd, Now What?"; EAB interviews and analysis.

Generic Grouping Particularly Ineffective For Tier 2

Students of Similar Reading Levels Often Have Different Needs

Non-Specific Measurements Mask Critical Details About Skill Deficits...

Problems with Grouping Students Using Non-Specific Measurements



Limited Insight into the Problem

Instructors lack clarity of specific sub-skills that students have mastered and still need to learn



Difficult to Match Resources to Need

Instructors face greater difficulty finding instructional materials and approaches that are appropriate for addressing needs



Interventions May Not Be Relevant

Students receive a "one-size-fits-all" intervention approach, which may not be appropriate for their skill needs



Less Likely to Yield Positive Outcomes

Intervention is less likely to lead to meaningful gains in students' overall reading progress

...And Can Lead to Unintended Consequences For Students

50%

Of tier 2 interventions teach concepts that students already mastered

22%

Of students who develop serious reading difficulties go unidentified

14%

Of tier 2 students progressed to the next-level benchmark category from the beginning to end of year

11%

Decrease in mid-year reading scores for first grade students who received intensive interventions ²

1) Findings from a 2015 national evaluation of reading interventions that was conducted across 13 states by National Center for Education Evaluation and Regional Assistance; N=24,000 1st-3rd grade students who barely made or missed the cutoff for qualifying for tier 2 interventions.

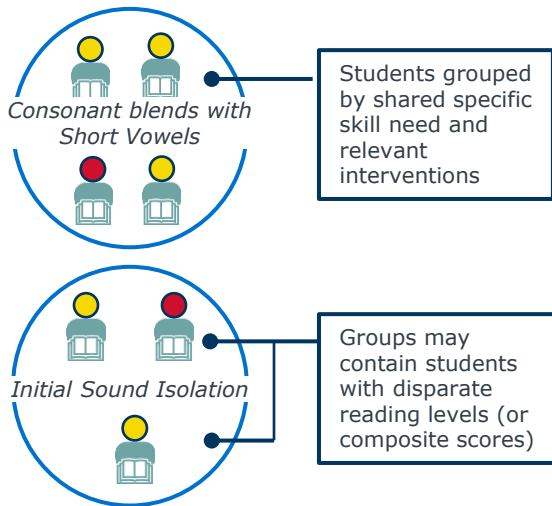
2) Ibid.

Source: National Center for Education Evaluation and Regional Assistance. (2015) "[Evaluation of Response to Intervention Practices for Elementary School Reading](#)"; Torgesen, J. et al. (2009) "[Prevention and Remediation of Severe Reading Disabilities: Keeping the End in Mind](#)"; Scientific Studies of Reading, 1:3, 217-234; Hall, S (2018) "10 Success Factors For Literacy Intervention, Getting Results with MTSS in Elementary Schools," ASCD; Sparks, S. (2015) "[RTI Falls Short of Promise](#)," Edweek; Fleste, L. (2013) "Don't DYS Our Kids: Dyslexia and the Quest for Grade level Reading Proficiency," Campaign For Grade Level Reading; EAB Interviews and analysis.

Skills-Based Grouping Refocuses Intensive Instruction ⁵²

Use Diagnostics to Group Students By Similar Skill Needs, Not Reading Levels

Sample Kindergarten Skills-Based Intervention Groups



Profiled Institutions:

Grant County Schools, WV

Farmington Municipal Schools, NM



Diagnostics Provide Deep Data Needed to Group and Monitor Student Skills

Sample Skills-Based Grouping Process

1

Employ Universal Screener (or CBM)

Which students are struggling readers? And what are their high-level skill needs (i.e., phonics)?

2

Assess Using Diagnostic

Why are they struggling? What are their sub-skill needs?

3

Organize Student Groups By Skills

Which groups of students have need similar skill-based interventions?

4

Match Intervention To Skill Need

Which targeted instruction will best address their skill deficiencies?

5

Monitor Progress of Particular Skill Using Diagnostic

Does the student demonstrate at least 80% mastery of the specific skill after three weeks?

- If yes, assess student on next skill
- If no, consider adjusting intervention

Skills-Based Grouping Boosts Reading Outcomes



Skills-Based Interventions Improve Reading Outcomes



Grant County Schools, WV

82%

Increase in share of cohort students who began the school year with “green” composite scores between kindergarten and start of third grade.

80%

Of teachers used skills-based grouping with fidelity by the third year of the initiative.

Farmington Municipal Schools, NM

30%

Increase in fourth grade students scoring proficiently on PARCC between 2014-15 and 2016-17¹

Refined Data Improves Overall Reading Proficiency

“Once you fill that skill gap, the students improve substantially, because that one skill gap was actually holding them back from multiple levels of proficiency. When they find that success, kids tend to love to read more.”

*Nicole Lambson
Farmington Municipal Schools, NM*

Vendor Overview: 95% Group Offers Promising Skill-Based Interventions

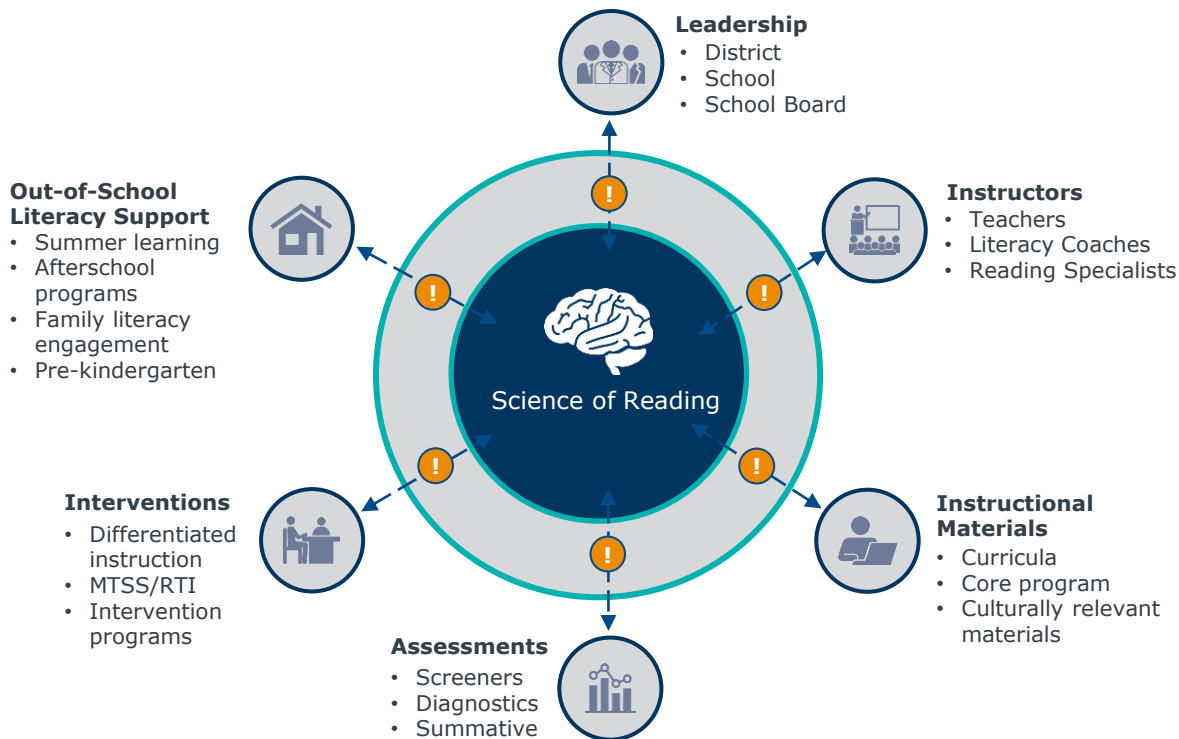


- Includes diagnostic assessments for 32 skills and corresponding targeted interventions
- Offers a scripted program and training that supports teachers in identifying and implementing skills-based interventions effectively, using brain-based research
- Provides ongoing support for teachers through on-site coaching visits from consultants
- Members using 95% group report an increase in students’ overall reading levels

1) New Mexico State Education Secretary publicly praised Farmington Municipal Schools as “one of the highest-performing districts in the state not just in terms of the improvement in scores, but also in overall proficiency

Source: Esterling, M. (2017) “NM Education Secretary Touts Farmington’s Improvement on PARCC,” Farmington Daily Times; Hall, S (2018) “95% Group;” EAB interviews and analysis.

The Science of Reading Proves Promising For Districts ⁵⁴



Revisiting Our Case Study Districts



Grant County Schools

Before

10% Of K-5 students meeting DIBELS benchmark



State takeover due to low performance

What They Did

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

Results

6th Highest performing district (out of 55)

85% Of K-5 students meeting DIBELS benchmark at grade level within 6 years



Rapides Parish Schools

Before

76% District accountability performance score

What They Did

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

Results

8x As many K-3 students achieving highest STAR classification in one year

92% District accountability performance score (improvement over 5 yrs.)



Bethlehem Area School District

Before

31% Of elementary schools had 60% or more of kindergarteners meeting benchmark on DIBELS

What They Did

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

Results

100% Of elementary schools had 60% or more of kindergarteners meeting benchmark on DIBELS

Interested in More?

I'd like to speak further about...

- 1** How to dramatically improve third grade reading scores through **district-wide alignment with the Science of Reading**
- 2** How to improve outcomes and reduce costs with with **"population mental health management"**
- 3** **Root cause analysis workshops** and professional development for my principals

Next Steps with EAB



Let Us Know in the Survey That Will Automatically Load in Your Browser



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Receive a copy of our research brief:
Narrowing the 3rd Grade Reading Gap



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