THE SCIENCE OF READING: WHAT EVERY COLORADO SCHOOL BOARD MEMBER SHOULD KNOW

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THE SCIENCE OF READING:
What Every Colorado School Board Member Should Know
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Local board of education members have the unique opportunity to impact each student enrolled in their district’s public schools. As leaders, they have the responsibility to hold their superintendents accountable for ensuring students become proficient readers. For years, educators and researchers have long debated “the Reading Wars,” a term used to describe which approach to teaching reading is most effective for children. Essentially, there are two schools of thought:

1. Those who advocate for reading instruction centered around the importance of explicit instruction in the five components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) to equip students with “the code” to learn to read the English language.
2. Those who are proponents of whole language, an approach that prioritizes immersing children in authentic literature.

The key difference between the two approaches is that the first is based in explicit instruction. This means the teacher directly instructs students in the skill or content to be learned, using clear and unambiguous language. The latter assumes that a child will learn to read independently by being immersed in literature.

The last three decades have brought important research and understanding to this age-old debate. Through modern technology, cognitive neuroscientists have been able to study the neural pathways of children who read fluently to those students who struggle with reading. We now have evidence of what needs to take place instructionally in order to wire the brain to be able to read.

Many Colorado school districts, including some of the largest in the state, remain deeply rooted in the whole language approach to teaching reading, a practice that is effective for about only 5% of children. The children in this small population typically come from homes of high socioeconomic status and have parents who expose them to rich language and literacy experiences. These children will learn regardless of the instruction they receive.
Only 41.3% (2019) of third grade students in Colorado are considered to be proficient readers, as measured by the English Language Arts (ELA) portion of the state assessment, the Colorado Measures of Academic Success (CMAS). This means almost 60% of Colorado third graders do not read and write at grade level. The stark reality is children who miss this third grade milestone are four times more likely to leave school without a diploma than their peers who read proficiently.

The Colorado legislature and State Board of Education have taken steps to provide more direction on how schools teach reading, to align with the research in what we know about how children learn to read. The Colorado Reading to Ensure Academic Development Act (READ Act), passed into law in 2012, focuses on early literacy development for all students, and especially for students at risk of not reading at grade level by the end of third grade. Children who fall below grade level on interim assessments are given individual READ plans, which must include explicit steps teachers will take to aggressively address learning gaps specific to each child’s needs. In 2019, the legislature strengthened the READ Act, adding new emphasis on the importance of instruction that is scientifically proven to be effective in teaching all students to read successfully. The law applies to all Colorado public schools.

This resource is designed to be an easy-to-understand guide that equips school board members with knowledge that empowers them to become leaders for literacy in their respective districts. Readers can expect to learn about the following:

- Research on early literacy and the reading brain;
- Components proven to be necessary for significant gains in literacy;
- Addressing equity for learners as a means of closing the achievement gap;
- Accessing their district’s data to understand performance; and
- Expectations and implications for teachers and classroom instruction.

The underlying theme to the research and recommendations provided in this guidance document are rooted in the well-established research on the Science of Reading.
What is The Science of Reading?

In examining any movement, it is important to be savvy consumers of information. The Reading League is one of the nation’s leading reading organizations, comprised of educators and literacy experts. Its mission is to spread awareness and understanding of evidence-based instruction, known as the Science of Reading. With the rapidly growing literacy movement across the country, local chapters are being formed throughout the country, including a newly organized one in Colorado.

According to The Defining Movement, a coalition developed by The Reading League:

The Science of Reading is a vast, interdisciplinary body of scientifically-based research about reading and issues related to reading and writing.

This research has been conducted over the last five decades across the world, and it is derived from thousands of studies conducted in multiple languages. The Science of Reading has culminated in a preponderance of evidence to inform how proficient reading and writing develop; why some have difficulty; and how we can most effectively assess and teach and, therefore, improve student outcomes through prevention of and intervention for reading difficulties.4

The Science of Reading is derived from researchers from multiple fields:

- Cognitive psychology
- Communication sciences
- Developmental psychology
- Education
- Implementation science
- Linguistics
- Neuroscience
- School psychology
A term often used when talking about the Science of Reading is Structured Literacy. A clear relation exists between the two, but there is an important distinction: the Science of Reading is the “evidence,” whereas Structured Literacy is the “application of” the Science.⁵

According to the International Dyslexia Association, Structured Literacy is a comprehensive approach to literacy instruction that is characterized by the delivery of systematic, explicit instruction that integrates listening, speaking, reading, and writing. Structured Literacy teaches the structure of language across the speech sound system (phonology), the writing system (orthography), the structure of sentences (syntax), the meaningful parts of words (morphology), the relationships among words (semantics), and the organization of spoken and written discourse.⁶

### Figure 1. Examples of Some Different Instruction Emphases in SL as Compared to TLP

<table>
<thead>
<tr>
<th>Structured literacy (SL)</th>
<th>Typical literary practices (TLP)</th>
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<tbody>
<tr>
<td>Phonics skills are taught explicitly and systematically, with prerequisite skills taught first. For beginning readers, these skills receive considerable initial emphasis.</td>
<td>Phonics skills are usually taught but not emphasized, even for beginners. Teaching is often not highly explicit or systematic. Prerequisite skills may not be taught first.</td>
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<td>Phonics approach is synthetic (parts to whole). Students learn sounds for common letters and letter patterns (e.g., sh, -ck) and how to blend them (phoneme blending).</td>
<td>Phonics approach may be synthetic, but is often analytic (whole to parts) or decoding by analogy (e.g., &quot;word families&quot;).</td>
</tr>
<tr>
<td>Beginning readers usually read decodable texts (texts largely controlled to specific phonics patterns that have been explicitly taught) that facilitate learning to apply phonics skills in reading texts.</td>
<td>Beginning readers usually read leveled and predictable tests (texts in which words are predictable based on sentence structure, repetition, or pictures) that do not easily lend themselves to application of phonics skills.</td>
</tr>
<tr>
<td>Oral text reading with a teacher is included in lessons.</td>
<td>Partner reading and independent reading may be emphasized more than oral text reading with a teacher.</td>
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<tr>
<td>When students read text orally, they are encouraged to look carefully at printed words and apply decoding skills to unfamiliar words.</td>
<td>When student read text orally, some errors may be overlooked, especially if they do not greatly alter meaning. Teacher feedback to errors may emphasize sentence context or pictures rather than consistent application of decoding skills.</td>
</tr>
<tr>
<td>Spelling skills are taught explicitly and systematically with prerequisite skills taught first and with instruction in common spelling rules (e.g., rules for adding endings). Spelling instruction reinforces and extends what students learn in decoding.</td>
<td>Spelling is often not taught in an explicit or systematic manner. Students may learn word lists in which words exemplify no particular phonics pattern or spelling rule. Spelling program may be completely distinct from decoding program with different words in the two programs.</td>
</tr>
<tr>
<td>Higher levels of literacy are explicitly and systematically taught (e.g., sentence structure, paragraphs, discourse), including prerequisite skills.</td>
<td>Some higher levels of literacy may be explicitly taught but usually not systematically and not with strong attention to prerequisite skills.</td>
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Source: Structured Literacy and Typical Literacy Practices, Louise Spear-Swerling⁷
A gross misunderstanding persists that shifting to an implementation of the Science of Reading is “just adding a phonics program.” While adding a rigorous phonics program that is systematic and explicit in nature is a critical component to a full transition, much more is needed to implement the Science with fidelity.

Figure 1 provides clear examples of practices that should be seen in classrooms that implement the Science through Structured Literacy, versus practices found within popular teaching models called guided reading and balanced literacy.

The practices classified as Typical Literacy Practices are implemented across Colorado, specifically in some of the state’s largest districts. Not only are the practices ineffective, though, but they are also out of alignment with the READ Act. Any curricular resource that encourages teaching practices listed in the right-hand column will likely prove ineffective with struggling readers.

**Understanding Brain Research**

As previously mentioned, researchers and educators have long debated the most effective way to teach a child to read. Recent advances in technology have allowed cognitive researchers and neuroscientists to study brain imaging, to better understand what happens in the brain of a child who successfully reads versus a child who struggles to master the ability. This brain research has been a breakthrough in education and is one of the key underpinnings to the Science of Reading.

In *The Science of Reading: Evidence for a New Era of Reading Instruction*, Laura Stewart, the National Director of The Reading League, says:

> First words, first steps, and learning to read are milestone moments. Of these milestones, children naturally learn to speak and walk as part of the human experience. But when it comes to reading, “human beings were never born to read” (Wolf, 2018). While some children seem to effortlessly begin reading, the majority of people need to be taught. Reading and writing are recent inventions in the grand scope of humanity. Although spoken language is “hard wired” inside the human brain and the brain is fully adapted for language processing, the written code has not been around long enough for humans to have developed a “reading brain” (Wolf, 2007; Dehaene, 2009). Rather, the neural circuitry that is necessary to read is created primarily through instruction. The past three decades have produced exciting evidence about what happens in the brain during reading and what needs to take place instructionally in order to wire the brain to be able to read. Through the advancement of fMRI technology, researchers have compared the neural systems of fluent readers to the neural systems of struggling readers. These studies reveal what needs to happen to build efficient neural connections for reading.

> ... Brain imaging studies have taken place throughout the United States, and the images are consistent again and again; therefore, what has to take place instructionally is consistent as well. As cognitive neuroscientist Stanislas Dehaene states, "It simply is not true that there are hundreds of ways to learn to read... When it comes to reading, all [children] have roughly the same brain that imposes the same constraints and the same learning sequence" (2009).4
Understanding the Five Components of Reading

Learning to read is a complex process, which involves several components that build upon one another. According to the National Reading Panel, there are five essential components of literacy that elementary students must be explicitly taught in order to learn to read.

To ensure proper instruction, each of the essential components listed below should be explicitly taught to all students using a core program from the Colorado Department of Education’s (CDE) advisory list of approved instructional programs.9 Students’ mastery levels for each of the components should then be measured with an approved interim assessment.10 A more thorough description of these components, and implications on instruction, can be found in the full report from the National Reading Panel.11

- **Phonemic awareness**—The ability to distinguish and manipulate the individual sounds (phonemes) in spoken words. Phonemic awareness can be done “in the dark,” meaning that it is not necessary to see letters to master this skill. A teacher might say, “Tell me the sounds in the word ‘cat’.” The child would respond with the sounds, “/c/-/a/-/t/.” Children who are read to at home—especially with material that rhymes—often develop the basis of phonemic awareness. Children who are not read to will likely need someone to teach them that words can be broken apart into smaller sounds.

- **Phonics**—The knowledge that letters of the alphabet represent sounds and these sounds are blended together to form written words. Readers who are skilled in phonics can sound out unfamiliar words and recognize familiar words accurately and automatically. Explicit, systematic instruction in phonics helps average children learn to read and spell more accurately and fluently than those who do not receive phonics instruction. Becoming proficient in phonics is a key to developing fluency and comprehension.

- **Fluency**—The ability to recognize words easily, read with greater speed, accuracy, and expression, to support comprehension of text. Children gain fluency by practicing reading until the process becomes automatic.

- **Teaching vocabulary words**—Best achieved by reading itself, oral language practice, and instruction on a wide range of topics. Instruction of new words, either as they appear in text or by introducing new words separately, aids reading ability.

- **Reading comprehension strategies**—The ultimate goal of reading is to understand, remember, and communicate what has been read. Students must acquire various comprehension skills and strategies, background knowledge, and verbal reasoning, that can be applied across a wide range of text.
Figure 2. Progression of the Components of Literacy

<table>
<thead>
<tr>
<th>Components Typically Emphasized at Each Grade Level</th>
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<tr>
<td>Phonological Awareness</td>
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<td>Basic Phonics</td>
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<tr>
<td>Advanced Phonics/Decoding</td>
</tr>
<tr>
<td>Vocabulary</td>
</tr>
<tr>
<td>Passage Fluency</td>
</tr>
<tr>
<td>Comprehension Skills &amp; Strategies</td>
</tr>
<tr>
<td>Grade</td>
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<td>K 1 2 3 4 5 6+</td>
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</table>

FIGURE 2. Progression of the Components of Literacy

Figure 2 illustrates how learning the components of reading progresses through the grade levels for the average child. Once students master phonemic awareness (typically by the middle of first grade), a teacher no longer needs to include this component as part of core instruction for all children. However, some students continue to demonstrate they have not mastered this critical skill. In these cases, it is appropriate for the teacher to provide small group instruction using an approved intervention program, to support students in mastering this skill. Struggling readers need more instruction and practice to catch up with their grade level peers.

A teacher should not wait until a child can read to teach comprehension skills and strategies. Think of interacting with a young child: Can they listen to and understand language (in a story, for example) at a higher level than what they are able to read? This is because listening comprehension outpaces reading comprehension. Can they articulate what they have heard at a higher level than what they are able to write? This is because children can speak at a more sophisticated level than what they are developmentally able to write. A teacher should capitalize on these natural abilities a child possesses.

The Importance of Systematic and Explicit Instruction

Because learning to read is not a natural process, students, especially those at risk of reading failure, need teachers who provide explicit and systematic instruction in all areas of literacy, especially in the area of phonics. But what exactly does “explicit and systematic” mean?

Explicit instruction is when the teacher directly points out what is being taught (e.g., a says /a/ as in apple), leaving little to chance. Children who struggle in learning to read do not discover what teachers leave unsaid about the complexities of word learning.

Systematic instruction refers to the use of a planned, logical sequence to introduce skills and concepts, with important prerequisites taught before more advanced skills.
The teacher takes care to avoid introducing skills in a way that is unintentionally confusing (e.g., students are not expected to spell and decode complex words before they have the chance to learn to spell and decode simpler words).

Programs that are explicit and systematic equip teachers with language to support instruction and contain multiple opportunities for students to practice a new skill. Average learners only need between one and 10 repetitions to learn a new skill, whereas struggling learners, on average, need more than 100 repetitions for a new skill to stick.13

Some may perceive that phonics, and the decoding skills necessary for our most at-risk learners can be boring, but here are the facts:

- Only 5% of students learn to read with little effort.
- Approximately 35% of students will learn to read through broad instruction.
- Nearly 40-50% of children require more explicit, systematic, and sequential instruction, aligned to Structured Literacy (as defined above).
- Roughly 10-15% of students have dyslexia, and many of these children are undiagnosed medically. A diagnostic assessment for literacy must be used to pinpoint specific areas of need. Using a Structured Literacy approach to instruction, with many opportunities for practice and repetition, is essential for a dyslexic child’s success in becoming a reader.14

These statistics indicate that a majority of students require instruction rooted in Structured Literacy. This research aligns with both state assessment data, as measured through the Colorado Measures of Academic Success (CMAS), and national data, as measured through the National Assessment of Educational Progress (NAEP). The NAEP, referred to as the Nation’s Report Card, assesses a sample of Colorado fourth graders in reading every two years. According to 2019 CMAS ELA data, approximately 48% of fourth graders “meet or exceed” grade level expectations for reading and writing. Assessing only reading levels, NAEP data from the same year indicates that only 40% of Colorado’s fourth graders read proficiently.15 It is critical for adults to set our personal feelings of “boredom,” and provide the necessary instruction research indicates aside our students need.

Popular approaches to reading, especially those found in many Colorado school districts, lack an explicit and systematic approach to literacy and fail to provide the decoding skills struggling students need to succeed in reading. A key step district leaders can take to ensure literacy programming is effective for every student is to move away from ineffective practices called guided reading and balanced literacy. Some popular literacy programs that are synonymous with these unhelpful approaches are:

- Lucy Calkins’ Units of Study
- Fountas and Pinnell’s programs
- Marie Clay’s Reading Recovery
- Jan Richardson’s resources
- Leveled Literacy Intervention, also called LLI

It is imperative that schools replace these programs and approaches with resources aligned to Structured Literacy that are designed to support all students. Combining a systematic and explicit supplemental program for one of the five essential components with any of the ineffective practices mentioned above does not produce a high-quality
literacy program, nor does it comply with the READ Act. All programs should align with the principles of Structured Literacy, and be systematic and explicit in nature.

**Literacy Scope and Sequence**

All core, supplemental, and intervention programs rooted in the Science of Reading should have a scope and sequence. This structure is intended to serve as a general guide for educators to facilitate instruction, where ordered sequences begin with basic concepts and progress to more difficult concepts and new learning builds on prior knowledge. A literacy scope and sequence outlines the breadth and arrangement of key literacy topics and concepts across grade levels (scope), and the progression in complexity of essential literacy skills addressed at each grade level (sequence) from pre-kindergarten to the 12th grade.
Raising the Bar
Research indicates that when provided with appropriate early intervention, 95% of children, including those diagnosed with dyslexia and other learning disabilities, can become readers. Yet, our school systems significantly fall short of this realistic goal.

Understanding Dyslexia
The International Dyslexia Association (IDA) is the leading national organization for training, resources, and information to help educators and families understand dyslexia and the implications for instructing students with this condition. Dyslexia is a specific learning disability that is neurobiological in origin. The Rocky Mountain Branch of IDA has provided the following guidance to support parents and educators in understanding what dyslexia is and what it is not:

Dyslexia is not a disease; it has no cure. Dyslexia is a learning disability that affects one’s ability to easily process written and/or verbal language. It is the most common cause of reading, writing and spelling difficulties. Furthermore, it affects males and females nearly equally, as well as people from different ethnic and socioeconomic backgrounds. Dyslexia results from differences in the structure and function of the brain. This neurological difference causes individuals with dyslexia to learn differently. The problem is not behavioral, psychological, motivational, or social. It is not a problem of vision; people with dyslexia do not ‘see backward.’

Dyslexia is the most common learning disability and the most common cause for reading failure. Some estimate the underdiagnosed condition affects 15-20% of all people to varying degrees. The brains of children with dyslexia are organized differently, but intensive reading intervention can rewire them.

We know through brain imaging there is one way children learn to read. Children with dyslexia learn the same way their peers do; they just need more time, repetition, and
practice to help them build the connections between print and sound in their brains. Therefore, it’s critical to screen students for dyslexia and related reading difficulties early using a strong observational assessment tool. Dyslexia can be identified as early as preschool, before a child learns to read.

Too many children have been failed by the lack of proper reading instruction. It is past time that society as a whole becomes educated about the Science of Reading. In the *Colorado Department of Education Dyslexia Handbook*, parents, school staff, and community members will gain a better understanding of dyslexia through various resources, including videos.\(^7\)

**Figure 3. 2020 Colorado Learning Disability Statistics.**\(^8\)**

- **40%** of students on an IEP in Colorado have a Specific Learning Disability (SLD)
- **2020 Colorado Student Statistics**
  - # of Students in K-12: 883,199
  - # in K-12 Special Education: 104,495
  - # in K-12 Special Education for SLD: 41,677
  - According to the International Dyslexia Association, about 85% of kids with SLD are Dyslexic, therefore an estimated **35,425** students in Colorado Special Education are receiving services for dyslexia.
  - However, there are an estimated 12% of Colorado K-12 students with Dyslexia, or roughly **105,984** students. This leaves **70,559** not identified and/or receiving special education.
- **Few Dyslexic children in Colorado today are receiving services with fidelity and accountability for their Dyslexia.**

**Literacy and Equity**

The Science of Reading has proven how students should be taught to achieve literacy, enabling them to become successful learners. The first action school districts should take to ensure equity in student learning is to properly implement a reading program based on the Science of Reading. Teachers and leaders in each school should be trained in the Science through CDE or other state-approved programs. Parents and community members should also have access to training. The impact of COVID-19 on children’s learning increases the need for this broader sort of training to help children overcome the losses caused by a lack of in-person learning. Yet so many district schools in which students are able to achieve the 95% reading proficiency rate value and implement
practices which focus on equity. Equity means making sure every student has the support they need to be successful.

To illustrate equity in the classroom:
- All students, including English Language Learners (ELLs), need instruction in phonics that uses a systematic and explicit approach. We know ELLs need additional scaffolds, like pictures to help build meaning of new words, to support learning of a secondary language. These particular scaffolds are not typically necessary for a student whose primary language is English.
- On average, children who come from high-income families, where parents are educated, working professionals, hear 30 million more words within the first four years of life than a child from a low-income family. Low-income children who enter preschool classrooms start at a disadvantage and need a tremendous amount of exposure to rich language to build vocabulary. They require opportunities to speak to build oral language skills, far more than their peers.
- Many school districts have digital curriculum resources, which require a device and internet capability to function. The COVID-19 pandemic brought greater attention to this problem, as many students grappled with how to connect remotely to participate in class and complete assignments. Educators need to be mindful when asking students to complete schoolwork at home: Do students have the full capabilities, including internet and working devices, to successfully complete the work? If not, how can schools help these students effectively learn the content and meet classroom expectations?

Impact on Children
Teaching a child to read has a huge impact on his or her future success. Becoming literate by third grade is one of the biggest keys to success and affords a child the opportunity to function as an independent adult in society. Ineffective instructional methods and the inability to meet the needs of individual students increases the chances that a student will not graduate from high school. Here are the alarming facts:
- One in six children who do not read proficiently in third grade fail to graduate from high school on time, four times the rate for children with proficient third-grade reading skills.
- 60% of students who drop out or fail to graduate did not read proficiently by third grade.
- Black and Hispanic children who do not read proficiently in third grade are about twice as likely as similar white peers not to graduate from high school.
- Incarcerated individuals who receive a high school diploma should not be viewed as necessarily possessing the literacy skills needed to function in society, given that their performance is lower than that of others who hold a high school diploma.
- 52 million people living in the U.S. ages 16-74 have low literacy rates.

In a review of academic literature on the topic, the Department of Justice states, “The link between academic failure and delinquency . . . is welded to reading failure.” The study revealed that the frustration caused by reading failure was likely a cause for delinquent behavior.

It is absolutely critical for school district leaders to ensure they have a firm understanding of the following:
• Literacy performance levels for all students (including subgroups of students), as indicated in local and state assessment data.
• Programming used to teach reading, especially for kindergarten through third grade, the most critical grades for learning to read. Any resources used for core, supplemental, and intervention instruction that do not follow the Science of Reading/Structured Literacy should be abandoned.
• The district’s plan to address inadequate reading instruction, from the school to individual student level. Do schools (and teachers) have the resources and training required to understand and support each student? Is every student provided with the instruction and resources they need to become literate?

Accessing Assessment Data
As previously noted, only 41% of Colorado’s third grade students and only 48% of Colorado’s fourth grade students “meet or exceed” grade level expectations on the 2019 ELA CMAS. To better understand what can be done to address literacy at a local level, there are a few resources every school board member can access:

1. READ Act Data: All K-3 students in Colorado are required to be screened three times per year (beginning, middle, end) using one of CDE’s approved interim assessments to support early identification of a Significant Reading Deficiency (SRD), a term used to describe a child who is at risk for reading failure. More information on understanding an SRD is explained in the following section. Components of this information are publicly available on the READ Act Data Dashboard, through CDE’s website. The Dashboard contains data on every district, including the share of students identified with an SRD, as well as monies the district has received under the READ Act to provide intervention for those students most at risk of reading failure.

2. Colorado Measures of Academic Success (CMAS): Typically, students in grades three through eight take the English Language Arts (ELA) assessment for CMAS. Due to the pandemic, the 2020 assessments were cancelled across the state, and the 2021 assessment schedule was revised to limit the amount of testing in schools. For example, the fourth-grade ELA CMAS was not administered.

CMAS data is publicly available and may be accessed through CDE’s website. To view the aggregated data for all students, choose the report for “District and School Level Results.” Once the Excel file has been downloaded, the data may be filtered to view districtwide and school-level data.

The data columns most important to understanding how well a district, and its schools, are performing in literacy (ELA) are “Percent Met or Exceeded Expectations.”

If individual school ELA scores are not included on the CMAS Excel report, it is likely due to a small number of students enrolled or tested. Ask the district superintendent for the data. School board members have the legal right to see this data.
Figure 4. Accessing K-3 Data from the READ Act Dashboard on CDE’s Website
**SECTION 3: COLORADO LITERACY INITIATIVE: THE READ ACT**

**Colorado READ Act**

The READ Act includes many components that apply to all Colorado public schools, including charter schools. The following section is not comprehensive but highlights key elements of the Act.

**What is a Significant Reading Deficiency (SRD) and what is a READ Plan?**

Colorado’s READ Act establishes certain parameters to help teachers and schools identify which students are at risk of not learning to read. All K-3 students in Colorado are required to be screened three times per year (beginning, middle, end) using one of CDE’s approved interim assessments to support early identification of a Significant Reading Deficiency (SRD), a term synonymous with being at risk for reading failure.

Students scoring below the cut point on one or more of the approved interim reading assessments are designated as having an SRD.

A student identified as having an SRD requires both intensive intervention (documented through a READ Plan) and grade-level instruction to close the achievement gap. For each student identified with an SRD in kindergarten through third grade, the school is required to create an individual READ Plan that documents the specific path a school will take to bring the child to grade-level performance. The READ Plan remains in place until a student has reached grade-level reading competency, determined locally through a body of evidence.

As highlighted on the Colorado Department of Education website, the READ Act calls for the following to be included in READ Plans:

- Screening or interim assessment results,
- Diagnostic assessment results including specific skills deficiencies identified,
- An end-of-year goal, as well as ongoing objectives to meet the goal,
- Aligned interventions and services beyond 90 minutes of evidence-based universal instruction,
- Progress monitoring,
Based on 2019 assessment data, 19.1% of Colorado’s third graders had a significant reading deficiency.²⁹

Figure 5. Sample Data Available CDE’s READ Act Dashboard

Acceptable Uses for READ Act Funding
Colorado created the Early Literacy Fund in 2012, under the READ Act, to support state and local implementation efforts. Each year funding is distributed directly to districts to support intervention services for K-3 students identified as having a Significant Reading Deficiency (SRD). Per-pupil intervention dollars are based on the number of students with an SRD that a district reports to CDE. In 2020, state officials allocated approximately $26 million to schools for this purpose. To learn how much a district has received in READ funding over the last five years, visit the “Financial Data” section on The READ Act Data Dashboard (cited above).

Senate Bill 199, adopted in 2019, updated the READ Act.³² Figure 6 features a chart from CDE’s website that shows allowable uses for per-pupil funds a district receives under the READ Act.
**Figure 6. Allowable and Non-Allowable Uses of READ Act Funds**

<table>
<thead>
<tr>
<th>Use of Per-Pupil Funds</th>
<th>EXAMPLES OF ALLOWABLE AND NON-ALLOWABLE USES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Allowable Use Examples</strong></td>
<td><strong>Non- Allowable Use Examples (Included but not limited to...)</strong></td>
</tr>
<tr>
<td>Operating a summer school literacy program</td>
<td>Summer literacy program support that is not exclusively focused on SRD students and does not support evidence and scientifically based reading.</td>
</tr>
<tr>
<td>Purchasing tutoring services focused on increasing students' foundational reading skills, including contracted services for tutoring to support evidence based reading instruction</td>
<td>Tutoring services do not focus on exclusively supporting SRD students and/or do not provide tutoring with the explicit purpose of supporting evidence and scientifically based reading.</td>
</tr>
<tr>
<td>Purchasing core instructional programming included on the CDE advisory list.</td>
<td>Purchasing core instructional programming not included on the CDE advisory list.</td>
</tr>
<tr>
<td>Providing other targeted, scientifically or evidence-based intervention services which are approved by the CDE.</td>
<td>Providing intervention services which are not approved by the CDE.</td>
</tr>
<tr>
<td>Purchasing technology from the CDE advisory list to assist in monitoring student progress toward reading competency.</td>
<td>Purchasing technology not directly related to monitoring student progress toward reading competency.</td>
</tr>
<tr>
<td>Purchasing from a board of cooperative services the services of a reading specialist or reading interventionist who is trained in the science of reading.</td>
<td>Purchasing from a board of cooperative services the services of a reading specialist or reading interventionist who has not been trained in evidence based reading.</td>
</tr>
<tr>
<td>Providing professional development programming to support educators in their knowledge of scientifically and evidence based reading practices. This includes the hiring of a reading coach who is trained in scientifically and evidence based reading practices.</td>
<td>Providing professional development programming to support educators that does not include knowledge of scientifically and evidence based reading practices. Hiring of a reading coach who is not trained in scientifically and evidence based reading practices.</td>
</tr>
</tbody>
</table>

**Source:** Colorado Department of Education

**Program Purchases**

If a public school purchases instructional materials with READ Act funds, the programs must be included on CDE's advisory list. However, under the READ Act, all local education providers, including charter schools, are required to use instructional programs in reading that are evidence- and scientifically-based and that focus on reading competency in the areas of phonemic awareness, phonics, vocabulary development, reading fluency (including oral skills), and reading comprehension, regardless of funding source. There have been cases in which districts use programs,
not on the advisory list, that claim to be based on the Science of Reading. If district leaders encounter this situation, it is absolutely critical not to rely solely on a vendor’s word. In order to substantiate the claim, the district ought to use a highly reputable rubric, such as the one publicly available through the Reading League, to evaluate resources, to determine if they are, in fact, aligned to the Science of Reading. A key component to conducting a fair and thorough review of programs to determine proper alignment is to ensure that all members of the curriculum evaluation committee complete intensive training in this area to deeply understand the concept. Members of the committee should be under the same training requirements, discussed later in this publication, as all Colorado K-3 teachers.

Periodically, CDE will allow vendors to apply for approval to be included on the advisory list for core, supplemental, or intervention programs. It is up to the vendor to go through the process to be considered for approval.

**New Reporting Requirements- What Programs Are Used?**

Another key update to the READ Act from Senate Bill 19-199 is an emphasis on the importance of using evidence-based instructional practices to achieve the original goal of the READ Act: teaching all students to read by third grade. The update includes requirements for districts reporting in their Unified Improvement Plans (UIPs). Beginning in the 2020-21 school year, districts must report the READ Act interim and diagnostic assessments administered along with their core, supplemental and intervention instructional literacy programs for grades K-3 for each school in their district.

Senate Bill 151, adopted during the 2021 legislative session, amended the READ Act to require each district to submit the following information to CDE, which the department must then post on its website:

- The core and supplemental reading curriculum, or a detailed description of the reading curriculum, by grade, used in each of its schools;
- The core and supplemental reading instructional programs and intervention reading instruction, services, and other supports provided in each of its schools;
- The number of students enrolled in kindergarten and first through third grades who have READ plans, as well as the number of students who have achieved reading competency; and
- The local education provider’s budget and narrative explanation for the use of the “Colorado READ Act” intervention money.

Each local education provider must provide a link on its website and on its schools’ websites to the page on the department’s website where the information is posted. The goal of this bill has been to provide greater transparency into programming used within the district, to empower parents and other stakeholders in becoming advocates for literacy.

**Early Literacy Grant**

The Early Literacy Grant (ELG) is a competitive grant, funded under the READ Act, awarded to only a few schools each year. In order to be considered for this funding, an applying school or district must be in full agreement to implement the READ Act, and
the components of the Science of Reading with fidelity. ELG “is designed to distribute funds to local education providers, including school districts, BOCES, and district charter schools or Institute Charter Schools, to ensure the essential components of reading instruction are embedded into all elements of the primary, K-3 teaching structures in all schools, including universal and targeted and intensive instructional interventions, to assist all students in achieving reading competency.” Schools that participate in the Early Literacy Grant have proven to be some of the most successful in significantly increasing the number of K-3 students who read on grade level.

**Training for Teachers**

For years, there has been a disconnect between what is taught in higher education and what is practiced in K-12 classrooms. In 2018, the state of Colorado began cracking down on teacher preparation programs, specifically their approach to reading instruction. These actions came as part of a broader push by lawmakers, state education officials, and parents of students with dyslexia to increase the number of proficient readers in schools.

Many colleges and universities, including some of the largest in Colorado, have been scrutinized for preparing teachers with ineffective practices in teaching reading. As of May 2021, Colorado’s largest teacher prep programs (University of Northern Colorado and Metropolitan State University of Denver) finally revised their programs and received full approval from the State Board of Education for aligning their literacy courses to the Science of Reading.

A classroom teacher is the single most impactful component of a child’s success in school. In an effort to increase a teacher’s knowledge of how children learn to read, all K-3 teachers in Colorado are now required to complete 45 hours of evidence-based training in teaching reading.

Senate Bill 19-199 amended the Colorado READ Act to require the training. The requirement is not just limited to classroom teachers. The READ Act defines a ‘teacher’ as: “The professional responsible for the literacy instruction of the student(s) and may include the main instructor for a class, an instructional coach, reading interventionist, special education teacher, Title I teacher or other personnel who are identified as effective in the teaching of reading.”

According to CDE, the K-3 reading training requirement will begin to be implemented in the 2022-23 school year, due to an extension granted in House Bill 21-1129. By mid-August 2022, districts will need to document that all teachers employed to teach grades K-3 in the upcoming school year have met the requirement. CDE has not yet determined the deadline for subsequent years.

Teachers need only complete the requirement once. There are several pathways a district can choose to support its teachers in meeting the requirement to be considered qualified to teach evidence-based reading:

1. Reading Teacher or Reading Specialist Endorsement
2. State Board Approved Assessment of Knowledge of Teaching Reading
3. Appropriate Undergraduate or Graduate University Course in Teaching Reading
4. Course Appropriate for License Renewal
5. CDE-Sponsored Training (Note: There is no cost to districts for this option)
6. District/BOCES-Provided Training: The option to choose an alternative pathway requires submission of an application to demonstrate the training meets the criteria and rigor for evidence-based training. Not all applications are approved.
7. Training Program from CDE’s Advisory List of Professional Development: In this scenario, the district contracts with the vendor to provide the training, using one of CDE’s approved programs.39
The Importance of Leadership

School leadership is second only to teaching among school-related factors in its impact on student learning. Yet the component which continues to be missed in iterations of the READ Act is any focus on a principal’s role in increasing literacy.

It is often the case that principals assume their leadership positions without having the proper training or background to effectively lead their school. For instance, it is very common for elementary principal positions to be filled by someone who has spent their career as a middle school science teacher, or high school English teacher. Many elementary school principals have little to no knowledge about early literacy.

In February 2021, the Wallace Foundation released an important research paper titled *How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research.* The report provides specific guidance on what skills and behaviors effective principals need to have to support learning. They must be skilled in the following:

1. Cultivating relationships
2. Providing instructional support to teachers’ classroom instruction
3. Developing skills that transcend schools (i.e., data, resource allocation, strategic thinking)

Specific behaviors of effective leaders impact student learning. They have the following abilities:

1. To engage in instructionally focused interactions with teachers
2. To build a productive school climate
3. To facilitate professional learning communities
4. To manage resources, including personnel, strategically

Effective instructional leaders must possess the skills that enable them to provide useful, structured feedback to teachers, with the goal of motivating them to refine their practices. Envision the building principal being the “Reading Specialist/Master Teacher.” In order to be prepared to be the strongest instructor of literacy in the building, an
elementary school principal must participate in learning the Science of Reading, whether through the pathways recommended for teachers, or another path which will ultimately get them to the same result: deeply engaging with the Science of Reading to impact student learning.

Outstanding principals who fill the role of instructional leaders have a pulse on high-quality literacy instruction. These principals are not only steeped in the Science of Reading but also regularly appear in classrooms to observe and provide feedback to teachers on instruction. Periodically, teachers receive formal evaluations. To ensure this process is done fairly, principals must learn evidence-based practices expected in schools across Colorado, as well as develop the skill set to provide targeted and specific feedback, so as to continuously support building teacher effectiveness.

To take this responsibility one step further, a principal is then evaluated on his or her effectiveness. Decisions, especially about curriculum and intervention resources, are typically made at the district level. School boards must hold district leaders to the same expectation, to develop an understanding of the Science of Reading. Colorado can no longer afford a division between school and district leadership on one hand and classroom practice on the other. To have maximum impact on students, and greatly increase the 40% literacy proficiency rate, the problem must be approached differently. All stakeholders, especially those who directly engage with literacy, must deeply engage in the Science of Reading.

**Engaging School Board Members**

School board members will benefit their community by becoming familiar with the district’s literacy curricula, attending curriculum training sessions, and visiting classrooms. The size of the district will likely determine the best points of contact to learn about the district’s literacy curriculum and training plans. Board members in larger districts will likely maneuver through district departments such as Curriculum and Instruction, Early Literacy, or Professional Development. Smaller districts will likely engage directly with superintendents and elementary principals.

School board members can become champions of literacy in their community. When passing READ Act legislation, the Colorado legislature encouraged school districts to make evidence-based training in reading instruction available to parents and members of the community in order to effectively partner with them in teaching young learners to read.43
The research is clear on how children learn to read. In order to change the current sad reality of thousands of Colorado students not reading on grade level, current practices must change to tightly align to the Science of Reading.

School board members have a unique opportunity to become champions for literacy. By understanding how children learn to read, and how to overcome factors that impede their success, stakeholders (including school board members) can, and should, hold districts and their schools accountable for producing greater results for our children in Colorado.

Every school board member should ask the following questions:
1. What is the percentage of students at the district level and school level that meet or exceed proficiency on all elementary English Language Arts CMAS assessments? (Look at subgroups, too.)
2. How many students at the district level and school level have a Significant Reading Deficiency?
3. Are district schools using reading programs and interim assessments that are listed on the Colorado Department of Education's advisory list?
4. How is the district spending its READ Act dollars? Are the funds being used wisely?
5. Do district elementary principals understand the importance of following the Science of Reading and Structured Literacy?
6. Have district elementary principals received the same 45-hour training in Structured Literacy that is required of teachers?
7. Does the district offer the 45-hour training in Structured Literacy to parents and community members?
8. How can I become a champion for literacy in my district?

Imagine the difference for Colorado's children, and society as a whole, if all school board members followed the necessary steps to ensure every child in their districts has the appropriate instruction and supports to learn to read at grade level or above. Local education leaders should accept no excuses.
Resources
The following are recommended resources that will support deeper learning on the topic of early literacy, as it relates to Structured Literacy and the Science of Reading.

Organizations:
- The National Reading League: www.thereadingleague.org
- The Reading League: Colorado Chapter (website not available at time of publication)
- International Dyslexia Association: www.dyslexiaida.org
- Rocky Mountain Branch of International Dyslexia Association (IDA): www.idarmb.org
- Colorado Kids Identified with Dyslexia (CO Kid): www.cokid.org
- Stand for Children: www.stand.org/colorado

Social Media:
Facebook Groups:
- The Science of Reading- What I Should Have Learned in College
- Science of Reading for Administrators- What Teachers Want You to Know
- Science of Reading: The Community

Amplify:
- Amplify Literacy Hub: www.amplify.com/literacy-hub
- Science of Reading Podcast: https://amplify.com/science-of-reading-the-podcast
- Science of Reading Primers, scroll down for Parts 1 and 2: https://amplify.com/literacy-hub

Articles and Reports:
Emily Hanford, Investigative Journalist for APM, has written several articles that have drawn national attention to the reading crisis in America. The following articles are also available as podcasts. All articles can be found at: www.apmreports.org/profile/emily-hanford
- “Hard Words: How American schools fail kids with dyslexia”
- “Hard Words: Why aren’t kids being taught to read?”
- “At a Loss for Words: How a flawed idea is teaching millions of kids to be poor readers”
- “What the Words Say: Many kids struggle with reading- and children of color are far less likely to get the help they need”


The Wallace Foundation’s How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research: https://www.wallacefoundation.org/knowledge-center
Endnotes


37 Colorado Department of Education, "Early literacy Grant (ELG)," https://www.cde.state.co.us/coloradoliteracy/readact/grant.

38 Melissa Colsman, email message to Pam Benigno, June 22, 2021.


41 Grissom, *How Principals Affect Students and Schools*, p. xvi.


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DAVID KOPEL is Research Director of the Independence Institute.

PAMELA BENIGNO is the Director of the Education Policy Center.

ADDITIONAL RESOURCES on K-12 education policy can be found at IndependenceInstitute.org

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