Research Brief

CLASS® Interactions Support Science of Reading

Literacy is fundamental for academic and life success. The research literature from education, psychology, and neuroscience indicates that the most effective approach to teaching literacy is grounded in the science of reading principles (Jiban, 2024; Lonigan & Shanahan, 2009).

Understanding the Science of Reading

The science of reading is an interdisciplinary body of scientific research on the teaching of reading skills. The science of reading approach supports what is known as the simple view of reading (Gough & Tunmer, 1986), and centers around "five big ideas" or literacy skills: phonemic awareness, phonological awareness, fluency, vocabulary and comprehension (National Center on Improving Literacy, 2026). Children learn to read when given explicit and systematic instruction on these skills (Reading Rockets, 2025).

Specifically, children learn to read when educators:

- Use code-based instruction to build letter and word recognition, including:
  - Guide children in hearing, identifying, and manipulating both the separate sounds in spoken words (phonemic awareness) and the larger sound units in words and sentences (phonological awareness)
  - Demonstrate the connections between printed letters and the sounds they make, alone and blended together (alphabetic knowledge, phonics instruction)
- Provide multiple opportunities to read words within a larger text with accuracy, automaticity, and expression (fluency)
- Build children's expressive and receptive vocabulary through using and explaining new words (oral language and vocabulary)
- Promote understanding of the texts they are reading (text comprehension)

Simple View of Reading

RC = D x LC

Reading Comprehension **(RC)** is the product of Decoding skills **(D)** and Language Comprehension **(LC)**.

Evidence-based curricula can help educators know how and when to introduce these skills to young children; often in an engaging and developmentally-appropriate way (Carlson et al., 2017; Jiban, 2024; What Works Clearinghouse, 2010).

How Teachstone's CLASS® Supports the Science of Reading

While the Classroom Assessment Scoring System (CLASS, Pianta et al., 2008 a, b) is not a measure of specific literacy teaching practices, it provides the essential framework for the interactions that make literacy lessons effective. Table 1 defines key reading skills children need and then outlines how CLASS-based interactions can promote effective literacy teaching.

Table 1. Aligning CLASS® Interactions with Key Literacy Skills

Skill Needed	What It Is	Examples of CLASS-aligned Interactions
Phonemic Awareness	Understanding that individual sounds are combined to make up spoken words; Recognizing and manipulating these sounds	**Instructional Learning Formats** *Combine explicit instruction with a variety of modalities to experiment with letter sounds and combinations such as feeling the puff of air with the /p/ sound or singing silly songs that swap out sounds to make new words.*
Phonological Awareness	Identifying and manipulating the larger sound units in words and sentences	**Instructional Learning Formats** *After explicit instruction, children practice different ways to count syllables in their names such as noting how many times their jaw drops or clapping for each syllable.*
Alphabetic Knowledge	Knowing the names of letters and their case, spotting them in print, and understanding that letters stand for sounds	**Instructional Learning Formats** *Play a matching game with upper and lower case letters, or set up a letter scavenger hunt.*
Oral Language	Understanding and using spoken language — the words and sentences spoken to convey meaning	**Quality of Feedback; Language Modeling** *Engage in extended feedback loops with open-ended and thought-prompting questions during a nature walk.* *(What do you notice…? How do you know…? What makes you think…? What do you mean by…?)*
Vocabulary	Understanding word meanings and using words appropriately	**Language Modeling** *During story time, pausing on a new word to define it with familiar words and connecting it to an object or picture; asking the children to share about what they think the word means or when they experienced that word*
Text Comprehension	Understanding the meaning of the words, sentences, passages, and information in texts	**Instructional Learning Formats; Concept Development** *Encourage children to retell a story (beginning, middle, end) or make predictions about what happens next in the story.*
Fluency	Reading within the text — sentences, paragraphs, passages, or pages (decoding while comprehending)	**Concept Development; Quality of Feedback** *"Echo" read with a child — model reading a sentence with the appropriate pauses and expression, then have the child echo or copy; extend the activity by asking the child how their voice might change if a period were an exclamation point; provide specific feedback on how the child read correctly and emphasized based on the different punctuation*

Underlying all these strategies are the other CLASS dimensions that create a warm and responsive learning environment (e.g., Educator Sensitivity) and organize children's time and behavior (e.g., Behavior Management). Such interactions help to create the foundational climate in the classroom so that educators can focus on developing key skills and individualizing instruction for children as needed.

What CLASS® Research Says

Several recent studies from preschool and early elementary settings demonstrate connections between CLASS and children's outcomes in key skills identified within the science of reading approach. Although the CLASS is a generalized measure of classroom interactions, the studies generally show that higher scores across the different **CLASS domains predict better language, literacy, and reading achievement** for young children.

Phonological Awareness and Letter-Word Recognition

- Kindergarten and first grade children with language delays demonstrated higher phonological awareness when decoding in settings where there was more Emotional Support observed (Tambyraja et al., 2015).
- A study of kindergarteners in Finland showed that higher Classroom Organization scores predicted higher learning motivation which in turn predicted better phonological awareness skills (Pakarinen et al., 2010).
- Findings from a meta-analysis of CLASS and literacy studies from 2008 to 2021 demonstrated small, but significant positive associations between CLASS domains and children's phonological awareness and print knowledge (Wang et al., 2020).
- In a large Head Start program, children who experienced higher Classroom Organization and Instructional Support scores were more likely to demonstrate better letter-word recognition skills (Bultosky-Shearer et al., 2020).

Vocabulary and Text Comprehension

- CLASS scores mediated the relationship between educators' beliefs and children's literacy skills in Chinese preschool settings. Specifically, educators who had more child-centered beliefs demonstrated more effective educator-child interactions, and the children in their classrooms scored higher on measures of receptive vocabulary (Hu et al., 2021).
- Higher scores on Instructional Support were linked to high vocabulary scores for Head Start preschoolers, regardless of reported behavior challenges. For children who did have behavior challenges, high Emotional Support acted as a buffer in the negative relationship between behavior and literacy skills (Bulotsky-Shearer et al., 2020).

- One study of almost 2,000 kindergartners showed a positive relationship between CLASS and reading skills. For children who were in the "social-emotional" risk profile, higher CLASS scores predicted higher reading comprehension scores. This finding was also true for children who showed some school readiness skills but were not included in the "high readiness" profile (Whittaker et al., 2024).
- For children learning multiple languages, CLASS Instructional Support can promote vocabulary skills. In German preschool settings, higher Instructional Support scores predicted better German vocabulary for children who experienced languages other than German at home (Kohl et al., 2019).
- Similarly, in Head Start settings, children learning English as an additional language showed higher receptive and expressive vocabulary skills when exposed to more effective Language Modeling as measured by CLASS (Sonnenschein et al., 2015).

Curriculum, Dosage, and Rigor Considerations

Children's literacy gains are often modest when CLASS is implemented alone, but when combined with an evidence-based curriculum and the appropriate dosage and rigor of academic content, we see improved outcomes.

- When educators implemented the 4R curriculum (which integrates social-emotional and literacy learning) and received CLASS coaching, children displayed higher-rated academic skills (Doyle et al., 2023).
- One study of a county pre-K program found that the magnitude (strength) of effect sizes increased when four conditions were present (Pianta et al., 2020):
  - Higher quality interactions (CLASS scores)
  - More educator involvement in academic activities
  - Higher levels of rigor or difficulty in academic activities
  - Increased dosage of exposure to academic content

Taken together, these studies and others demonstrate that CLASS based interactions and strategies can support educators as they implement a science of reading approach.

Next Steps

For more information on how CLASS can support a science of reading approach, explore some of Teachstone's early literacy resources (https://teachstone.com/bridging-the-literacy-gap/).

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