## Science of Reading Phonics Instruction

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Phonics instruction teaches the alphabetic code, or the connection between letters and sounds, which students use to decode words. *Systematic* phonics instruction means that the letter-sound connections (i.e., sound-spellings) are taught in a planned sequence that introduces skills in a logical way (National Reading Panel, 2000). *Explicit, systematic* phonics instruction means that each of the sound-spellings is taught explicitly with teacher modeling and multiple and varied opportunities for student application and practice.

#### Why Is Phonics Instruction Important?

Written language is a human invention, unlike oral language, which is inherent and hardwired inside the brain. While learning to speak develops naturally, reading and writing are "acquired skills" that must be directly taught (Liberman et al., 1989). Because English is a particularly complex alphabetic system with so many soundspellings—long a has seven spellings, (e.g., a\_e, a, ai, ay, ea, eigh, ey)—it is especially important that students learn them explicitly and systematically (Adams, 1990).

As students have opportunities for practice and become better at decoding, they gain automaticity (i.e., the ability to read words automatically, by sight, the way expert readers do), which leads to fluency (Ehri et al., 2006; Foorman & Torgeson, 2001). Fluent reading frees up cognitive load for comprehension of ideas in text (Laberge & Samuels, 1974).

If students do not master word-level reading, which includes multisyllabic word reading, they are likely to develop reading dysfunction. Sometimes these problems do not emerge until upper elementary or middle school because students are able to guess at word meanings and use other compensatory strategies. As texts grow complex and reading demands increase, however, the lack of a strong phonics foundation means that students are still spending too much cognitive energy on word reading (Torgeson & Hudson, 2006).

### What Are the Different Types of Phonics Instruction?

Within systematic, explicit phonics instruction, there are different types of phonics. The National Reading Panel found that **synthetic phonics**, where students learn the sound for each letter or letter combinations and combine letters to make words, is more effective than other types of phonics instruction in isolation (2000). However, a high-quality foundational skills program should integrate multiple types of phonics instruction, especially for practice and application. These include the following, which are associated with common activities:

- **Analogy based:** using known word patterns to identify new patterns and words, such as with word building (e.g., cat -> mat -> bat -> sat)
- Analytic: blending sounds to make words (e.g., /d/ /o/ /g/)
- Encoding: using knowledge of sound-spelling patterns to spell words
- **Embedded:** applying phonics knowledge to reading words in text (i.e., reading sentences and passages, not words in isolation)

#### What Is a Systematic Phonics Scope and Sequence?

There is no one research-backed phonics scope and sequence. There are, however, ways to make a phonics scope and sequence systematic to maximize student outcomes. A systematic phonics scope and sequence should begin with simple skills and patterns and progress to more complex skills.

This can include, for example, beginning with CVC words and then progressing to CCVC words, followed by CVCe words. This way students can solidify their knowledge of short vowel patterns while learning new consonant sound-spellings before moving on to long vowels in CVCe words (Guthrie & Seifert, 1977). Consonant digraphs (e.g., sh, th) should come before blends (e.g., st, sl) because digraphs are a finite set, and research shows that two letters making a single sound is a simpler concept for students to learn than two letters making two sounds (Pirani-McGurl, 2009). These are just a few of the decisions that go into a systematic scope and sequence.

# Things to Remember about the Research on Phonics Instruction

- Explicit, systematic phonics instruction teaches the connection between letters and sounds in a logical sequence in direct instruction, teacher modeling, and student application and practice.
- Phonics instruction is important because we are not hardwired for literacy, and the alphabetic code is complex. By becoming secure in word reading, students will gain automaticity and fluency, which enables them to comprehend ideas in text.
- High-quality phonics instruction should include direct instruction of sound-spellings, as well as word building, blending words, encoding, multisyllabic word reading, and practicing reading words in text.
- A systematic scope and sequence should begin with simple skills like CVC words and progress to complex ones like CCVC words and then CVCe words with time for practice and review.

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