



Phonemic Awareness

W H I T E P A P E R

Virginia Literacy Partnerships

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What Is Phonemic Awareness?



Sentences are made up of words. Written words are made up of letters that represent sounds. To learn how to read and spell, it is crucial that students make the connection that letter(s) represent the sounds they hear in words (Foorman et al., 2016). Teachers can facilitate students making that connection by teaching students to identify the smallest individual speech sounds in words, called *phonemes*, and then teaching students the letter(s) that represent the sounds. The most effective phonemic awareness instruction incorporates letters as soon as possible (National Institute of Child Health and Development (NICHD), 2000).

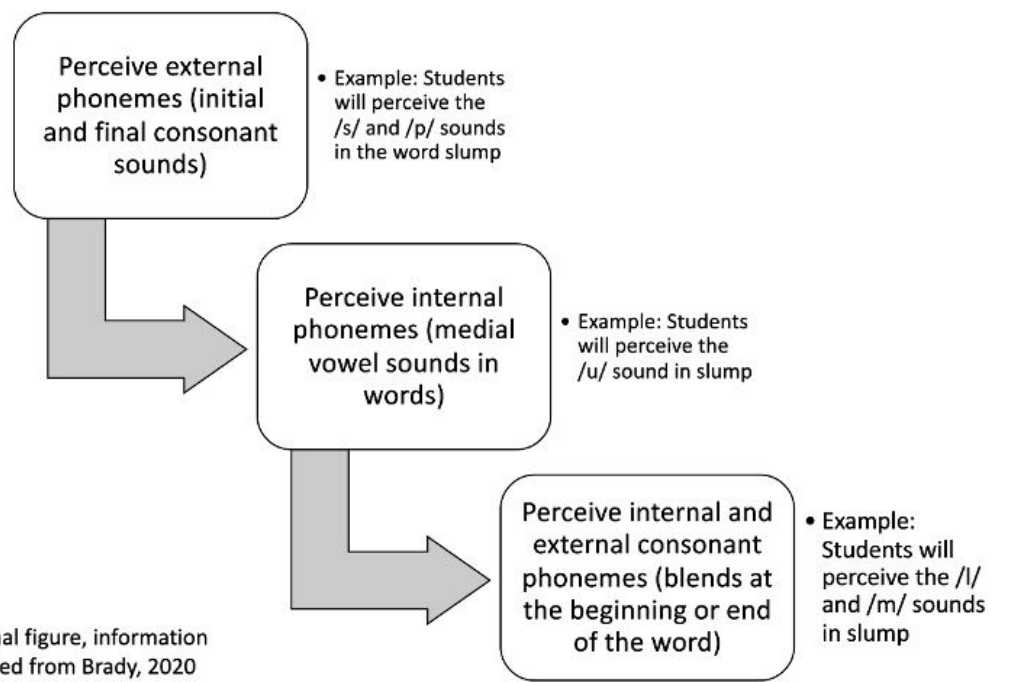
Phonemic awareness is a term that is used to describe an individual's ability to perceive and manipulate individual sounds in speech. It encompasses the ability to *blend* sounds (e.g., '/c/ /a/ /t/' is 'cat'), *segment* sounds (e.g., 'cat' is '/c/ /a/ /t/'), and *manipulate* sounds (e.g., replacing /c/ in 'cat' with /m/ makes 'mat'). Phonemic awareness is a subset of *phonological awareness*, which is a broad term that is used to describe an individual's ability to perceive and manipulate speech sounds. Sounds range from larger chunks, like *syllables* (e.g., tea/cher) and *onset-rime* (e.g., p/each), to the smallest individual speech sounds called *phonemes* (e.g., /c/

How Does Phonemic Awareness

Develop?

Learning to hear each individual sound in words follows a predictable sequence that is based on a sound's position in the word. Students are first able to hear and learn to identify the external phonemes in the word, such as the initial and final consonants. Then they hear the internal phonemes, such as the medial vowel. Finally, they hear internal and external consonant sounds that occur in consonant blends at the beginning or end of a word (Brady, 2020).

Figure 1 displays the development of phonemic awareness.



How is Phonemic Awareness

Related to Phonics and Print?

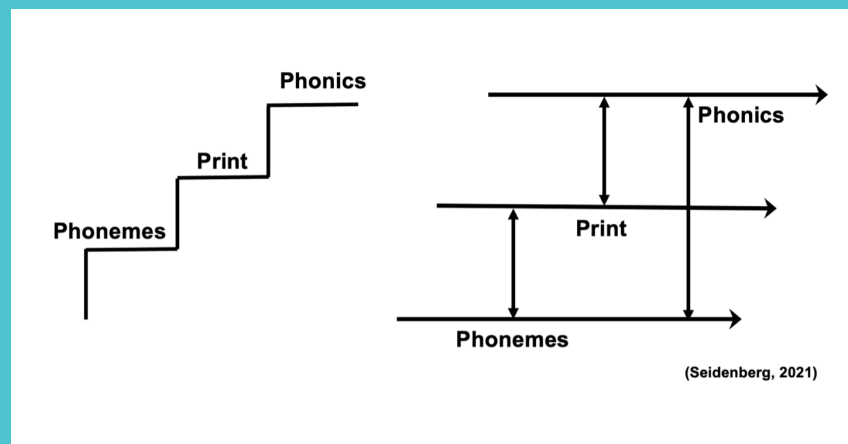


Figure 2. The interaction between phonemes, print, and phonics. Seidenberg suggests educators shift from thinking about these skills as precursors to each other (as shown on the left), to recognizing their interdependence (as shown on the right).

Seidenberg (2021) describes the nature of the relationship between phonemic awareness, phonics, and print (see Figure 2). He suggests that instead of skills developing in a progressive stairstep fashion, where one must be mastered before moving to the next, these skills develop simultaneously. Rather than developing in isolation, phonemic awareness, phonics, and print knowledge have an interdependent and reciprocal relationship. As phonemic awareness develops, it strengthens knowledge of print. Similarly, as students develop knowledge of print, it improves their knowledge of phonics and phonemic awareness. The more students develop phonics knowledge, the more easily they can identify and perceive unique phonemes. Because these skills work in harmony with each other, when there is a breakdown in phonemic awareness, it impacts the acquisition of both print knowledge and phonics ability.

How is Phonemic Awareness Important to the Reading Process?

Phonemic awareness is correlated with reading success (Melby-Lervåg et al., 2012). Phonemic awareness facilitates decoding, spelling, and automatic word recognition. In order to decode a word, students first need to know that *graphemes* (the letter or letters that represent sounds in print) represent *phonemes* (the smallest speech sounds). They must look at the letters from left to right and make the sounds of each letter or group of letters. Additionally, they must be able to hold the sounds in their memory as they sound out the word, blend the sounds, and recognize the word.

Spelling also depends on phonemic awareness. When a student spells a word, they must first segment the word into individual speech sounds (phonemes) and then write the grapheme (letter or letters) that represents that sound. If a student cannot perceive all the sounds in a word, they are likely to omit letters that represent those sounds, causing them to misspell the word. For example, a student who does not perceive the L sound in 'sled,' may write 'sed,' leaving out a critical phoneme.

Phonemic awareness facilitates the process that allows for instant word recognition in proficient readers: when a student has decoded a word multiple times, they can read it automatically. When a student first decodes a word, the process is slow and laborious. But each time the student encounters the same word, the student decodes faster and faster. A process called orthographic mapping allows students to read words without conscious effort. This occurs when students develop automaticity with matching *graphemes* (letter or letters) to *phonemes* (individual speech sounds) in a particular word. For example, after a student decodes the word "spend" multiple times, they will effortlessly recognize the word the next time they encounter it and not have to sound it out. This cognitive process allows readers to recognize and retrieve known words quickly (Ehri, 2005). Even in words that have spellings that might be considered irregular, readers still form grapheme-phoneme connections that allow them to recognize words automatically (Ehri, 2020). This process of mapping words—building automaticity to the point of effortless retrieval—increases reading fluency and improves reading comprehension by allowing students to focus more on meaning than on decoding (Foorman et al., 2016).



How Should We Teach Phonemic Awareness?

Phonemic awareness instruction should follow principles of explicit instruction, use research-based routines, and incorporate letters. Explicit instruction includes modeling, guided practice, and independent practice with abundant opportunities for feedback (Schuele & Boudreau, 2008). Importantly, explicitly teaching students to hear and manipulate sounds by showing them the steps they need to follow is more effective than providing opportunities for students to notice sounds on their own (Ryder et al., 2008).

Teachers should use instructional activities that are supported by research. While working with larger units of sound (e.g., such as rhyming, counting out syllables, segmenting words into onset and rime) is appropriate for preschool, teachers should facilitate phonemic awareness beginning in preschool and kindergarten (Gillon, 2017). When students are learning how to identify phonemes while learning about the relationship between letters and sounds, it is helpful to draw attention to articulatory gestures, or the position of the lips and tongue when making a sound (Castiglioni-Spalten & Ehri, 2003). Teachers can also scaffold instruction by using manipulatives to represent the sounds in words (Ball & Blachman, 1991), teaching gestures to help students stretch the word to hear all the sounds (O'Connor, 2014), and choosing words that have sounds that are easier for students to perceive when they are in the early stages of phonemic awareness (e.g., continuous sounds, Moats, 2020).

Phonemic awareness has a reciprocal relationship with reading—as reading improves, phonemic awareness improves, and vice versa (Clayton et al., 2020; Perfetti et al., 1987). As soon as students learn letters, teachers should pair letters with phonemic awareness instruction. Pairing letters with the sounds they represent is more effective than teaching about the sounds alone (National Institute of Child Health and Human Development (NICHD), 2000; Ball & Blachman, 1991). Activities such as using letters with boxes that segment a word by sounds help students with both phonemic awareness and phonics skills (Keesey et al., 2015).

Understanding and awareness of phonemic awareness is important for later student reading and writing success. Screening of phonemic awareness skills identifies students who need extra support to become successful readers (Al Otaiba et al., 2016). Early intervention for these students can prevent most reading difficulties (Vellutino & Scanlon, 2002).



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