Building a Strong FOUNDATION for LEARNING to READ

BY KATHY BARCLAY, EdD
Professor Emeritus of Reading/Early Childhood at Western Illinois University
“Well see,” said five-year-old Sasha, “it just happened one day and suddenly it felt like ‘Yippee, I CAN READ,’” and he threw up his arms and laughed, “and it made me feel different inside my tummy. I felt kind of powerful.”

— Polakow, 1985, p. 9

INTRODUCTION: WHY FOUNDATIONAL SKILLS MATTER

The ability to unlock the pronunciation of words and to understand the meaning of those words are foundational to reading, as well as to all of one’s future learning. While a building’s foundation serves to support the load of the entire building, a solid base of foundational skills frees the reader to focus on higher level comprehension and knowledge construction. A poorly constructed foundation can be dangerous to both its occupants and the surrounding area. Weak foundational skills interfere with a reader’s ability to decode words quickly and efficiently and, subsequently, to comprehend text and act on its meaning.

Teaching reading in the primary grades is the most urgent task in education today. Yet our most recent national report card shows that nearly two-thirds of our fourth graders are not reading proficiently, and the rate of reading failure in high-poverty, minority populations is much higher (McFarland, et al., 2017). Children who do not read proficiently in third grade are four
times less likely to graduate from high school on time (Hernandez, 2012). In fact, compelling research shows that students who do not learn to read by the end of second grade will likely struggle with reading throughout their lives (Vaughn & Linan-Thompson, 2003). Research shows that students who are held back or who drop out of school are often those with poor reading skills (Feister, 2010). Conversely, “Students who are above grade level for reading in grade 3 graduate and enroll in college at higher rates than students who are at or below grade level” (Lesnick, Goerge, Smithgall, & Gwynne, 2010, p. 2).

Although it was once thought that learning to read was as natural as learning to speak, a large body of research over three decades has proven otherwise. We now know the skills children must master in kindergarten, first, and second grade in order to read well, and we know what constitutes effective instruction. If the evidence about reading instruction is readily available to us, why aren’t all of our children learning to read? Putting evidence into practice—and doing so in K–2—is the key.

Mark Seidenberg, cognitive neuroscientist and author of *Language at the Speed of Sight: How We Read, Why So Many Can’t, and What Can Be Done About It*, reminds us, “Learning to read is a complex problem because multiple overlapping subskills develop at the same time. Children vary in how rapidly they progress along the path to reading, but there is little skipping ahead because basic skills are prerequisites for more advanced ones” (2017, p. 105). As Seidenberg points out many times in his book, one cannot learn to read by imitating skilled readers; explicit instruction and practice are required.

Our most vulnerable children in particular need strong reading instruction. Effective beginning reading programs are important for children of all backgrounds and are especially important for disadvantaged and minority children and for children with learning disabilities who are highly dependent on successful school experiences to achieve future life success (Slavin, Lake, Chambers, Cheung, & Davis, 2009, p. 3).
WHAT SKILLS COMPRISE THE FOUNDATION FOR LEARNING TO READ?

Since 1998 four national research reports have had a major impact on early literacy in the U.S.:

1. Preventing Reading Difficulties in Young Children by the National Research Council
2. Report of the National Reading Panel: Teaching Children to Read
3. Developing Early Literacy: Report of the National Early Literacy Panel
4. Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade from the What Works Clearinghouse

The National Academy of Science commissioned a group of experts to compile a synthesis of research describing what research has to say about how we can best prevent reading difficulties in young children. Drawing upon both qualitative and quantitative research studies, researchers Snow, Burns, and Griffin edited a synthesis of research with accompanying recommendations for practice. Their report, Preventing Reading Difficulties in Young Children, published by the National Research Council in 1998, quickly became the definitive statement of what was known about building a strong foundation for reading instruction. This seminal work was one of the first major reports to highlight the importance of developing young children’s phonological and phonemic awareness during the preschool and kindergarten years.

In 1997, the U.S. Congress asked the National Institute of Child Health and Human Development (NICHD), in consultation with the Secretary of Education, to convene a national panel to assess the status of research-based knowledge about the teaching of reading. Building upon the foundational work of the National Research Council, the National Reading Panel (NRP) reviewed thousands of tightly controlled, scientifically based research studies on teaching reading in grades K–12. Five essential components for reading instruction were identified and discussed in their report: phonemic awareness, phonics, vocabulary, fluency, and comprehension (NICHD, 2000).

Convened in 2002 to develop a synthesis of the scientific research on the development of early literacy skills in children ages birth to five, the National Early Literacy Panel (NELP) sought to identify the strongest predictors of literacy outcomes. The question of when
the road to success really begins was clearly answered through NELP’s extensive six-year synthesis of research, which emphasized the importance of print knowledge, phonological processing abilities, and oral language skills as important predictors of later literacy skills and with evidence that teaching these early on can have long-term benefits (NICHD, NIH, DHHS, 2008).

More recently, a search was conducted by the What Works Clearinghouse (WWC) for scientific studies related to foundational reading instruction since the publication of the previous three reports. The years from 2000 to 2014 yielded more than 4,500 citations, of which 235 met their stringent eligibility criteria for inclusion. Following an intensive review by a panel of expert researchers and practitioners, the WWC released these recommendations for instruction in foundational reading skills (Foorman, et al., 2016):

• Teach students academic language skills, including the use of inferential and narrative language, and vocabulary knowledge.

• Develop awareness of the segments of sounds in speech and how they link to letters.

• Teach students to decode words, analyze word parts, and write and recognize words.

• Ensure that each student reads connected text every day to support reading accuracy, fluency, and comprehension.

As these four reports synthesizing thousands of studies spanning decades of research in reading instruction clearly and unequivocally demonstrate, there is strong consensus regarding what constitutes the foundational skills for reading: **oral language and vocabulary knowledge, print concepts/letter knowledge, phonological and phonemic awareness, phonics, and fluency.**

**Oral Language and Vocabulary Knowledge**

Becoming literate requires knowing thousands of words. As evidenced in the groundbreaking study by Hart and Risely (1995), word knowledge in preschool correlated to comprehension in the upper elementary grades. Not only was children's oral language at age three a reliable predictor of their oral language by kindergarten, children who had high oral language in kindergarten had much higher reading ability levels in the upper grades.

Research clearly shows gaps in vocabulary have their roots in the preschool years. One way to help us be more specific about children's early language needs is to think about the separate components that make up our language system. Many children entering school have participated in innumerable conversations with a variety of individuals, have heard many stories told, have been read to by adults, and know that certain settings and situations require different types of language. These children have learned most of the rules that govern our interactions with others. They may not, however, know how to communicate in a classroom environment or how to focus on and talk about language apart from its meaning. An important job of prekindergarten and kindergarten teachers especially is to help all children develop the skills needed to communicate in an academic setting.

An often overlooked, but extremely important component of academic language is **language demands**. These are the words students must know in order to understand and follow directions given in class. Oftentimes we take for granted the fact that students will know what we mean when we say “circle the picture” or “underline the word” or any number of other phrases and words used to provide directions to students. Consider the words *front, back, cover, title, author, illustrator, word, space,* and *letter.* These are but a few of the many specific words teachers use daily during beginning reading instruction that can cause confusion for young children.
Morphology is one of the often-overlooked building blocks for reading fluency, reading comprehension, and spelling. More recent research has demonstrated the importance of strong morphological teaching as early as first and second grade (Apel & Lawrence, 2011; Apel & Werfel, 2014).

Print Concepts/Letter Knowledge

Print concepts are an important early foundational skill for reading. Many children enter kindergarten with the understanding that writing on a page has meaning and is related to spoken language. Children who have a firm understanding of print concepts also recognize that text is made up of words, words are made up of letters, and spaces are used to separate words. They understand that books are read from left to right and that the text on each page is read in the same direction from left to right and top to bottom.

While children gain a general awareness of print concepts from looking at books and being read to, their first direct connection to print is through learning letters. We have long known that a child’s ability to identify the letters of the alphabet by name is one of the best predictors of how readily he or she will learn to read (Hammill, 2004; Treiman, Kessler, & Pollo, 2006; Schatschneider, Fletcher, Francis, Carlson & Foorman, 2004). Piasta, Petscher, and Justice (2012) found that
knowing 18 uppercase and 15 lowercase letter names by the end of preschool was positively correlated with first-grade literacy achievement.

While knowing letter names is important, a solid foundation in letter knowledge includes not only the ability to recognize and name letters, but also to associate letters and sounds (Bradley & Stahl, 2001). Research has demonstrated that basic phonological awareness skills and letter-name knowledge are important contributors to learning letter-sound relationships (Cardoso-Martins, Mesquita, & Ehri, 2011; Share, 2004). In fact, studies have shown improved speed of learning when letter-sound instruction for preschool and early kindergarten children is accompanied by training in phonological awareness skills (Cardoso-Martins et al., 2011).

**Phonological and Phonemic Awareness**

Phonological awareness is the understanding that speech consists of smaller units, such as words, syllables, onsets and rimes, and individual speech sounds or phonemes. Instruction moves from an analysis of words (i.e., Are these two words the same or different: hot/hat?) to syllables (i.e., Let’s clap the parts of our names: Sher-ry, Ben-ja-min), and then to phonemes, the individual sounds in words (i.e., Which two words sound alike at the end: can/cat/man?).

Children who have acquired phonemic awareness are able to hear, identify, and manipulate sounds in spoken words. They also understand that the symbols of written language, the letters of the alphabet, represent sounds of spoken language. This is a critical area of the foundational skills, as studies have estimated that 90% of children with significant reading problems have a core deficit in phonological processing (Blachman, 1995; Blachman, 2000; NICHD, 2000).

From their six-year study of research in early literacy development, the National Reading Panel reported the following:

- Children who have well-developed sensitivity to the sound structure of language are better able to profit from beginning reading instruction.
- Children who have problems acquiring phonological awareness will proceed more slowly in reading instruction in kindergarten and first grade.

These findings were corroborated by the What Works Clearinghouse. The panel of experts assigned a strong level of evidence to developing awareness of the segments of sounds in speech and how they link to letters (Foorman, et al., 2016). Seventeen rigorous scientific studies identified and examined by the panel found positive effects on students’ knowledge of letter names and sounds and phonology. These studies included diverse American students in kindergarten and first grade.

> The trick in productive letter-sound learning lies in linking the letters to a particular set of familiar sounds.
> Specifically, it lies in linking the letters to the phonemic sounds that one has already learned so well, to the phonemic sounds that are already so deeply and integrally a part of one’s knowledge of spoken words.

—Adams, 1990, p. 209

The first national research report to highlight the importance of phonemic awareness was Preventing Reading Difficulties in Young Children, commissioned by the National Research Council. As stated in this seminal report, “…instruction should be designed to provide explicit instruction and practice with sound structures that lead to phonemic awareness, familiarity with spelling-sound correspondences and common spelling conventions and their use in identifying printed words, ‘sight’ recognition of frequent words, and independent reading, including reading aloud” (1998, p. 323).

Phonemic awareness includes the ability to detect, manipulate, or analyze the auditory aspects of spoken language (including the ability to distinguish or segment words, syllables, or phonemes), independent of meaning. This understanding—that individual sounds in speech can be broken apart and blended together—is necessary to make connections between spoken and written language (NICHD, NIH, DHHS, 2008).
Phonological knowledge, including phonemic awareness, is an essential component of skilled reading in every language and in every writing system. **Early phonological awareness** includes rhyming, alliteration, and ability to identify spoken words with the same initial sound. A prerequisite for both letter-name and letter-sound knowledge, **basic phonological awareness** skills include blending sounds to form words orally and segmenting sounds in spoken words (Kilpatrick, 2015). While some children can develop phonological skills through informal exposure during interactive reading experiences, other children require direct instruction. Thus, it is important for preschool and kindergarten programs to have deliberate, purposeful instruction in these concepts. As Snow, Burns, and Griffin stated in the National Research Council’s report, “Enhancing children’s letter knowledge and phonological awareness skills should be a priority goal in the kindergarten classroom” (1998, p. 188).

Both early and basic phonological awareness instruction should be playful, engaging, interactive, and social (National Research Council, 1998). Designed to stimulate curiosity and encourage exploration and experimentation with language, excellent phonological awareness training leads children to a necessary understanding of the relationship between letters and sounds. This insight—that there is a direct connection between the sounds of spoken language and the letters in written words—is referred to as the **alphabetic principle**. Development of the alphabetic principal “is central to both phonic decoding and sight-word learning” (Kilpatrick, 2015, p. 93) and indicates a readiness for formal phonics instruction.

**Phonics**

Knowing how print relates to sound is the focus of phonics instruction. Reading scientists have proven that “readers use phonological information and that among younger readers, good readers are better able to use phonology than poor readers, allowing them to depend less on guessing words from context” (Seidenberg, 2017, p. 125).

The National Reading Panel defined phonics as a way of teaching reading that stresses the acquisition of lettersound correspondences and their use in reading and spelling (NICHD, 2000). The inclusion of spelling in this definition is important, as phonics knowledge allows students to both decode (read) and encode (spell) words. This point was further highlighted by the What Works Clearinghouse, which reported a strong level of evidence for phonics instruction due to positive effects on word reading and encoding outcomes for diverse students.

We need our students to automatically—quickly and without hesitation—decode words containing phonic elements they have been taught. And we need them to be able to, just as quickly, write the letters that represent the sounds they hear in spoken words. This need for automaticity in encoding also includes a need for automaticity in correct letter formation—handwriting. We do not want students to have to stop to think about how to form each letter before they write it. Knowing correct letter formation frees up cognitive energy for thinking about the meaning that we are attempting to convey through writing.

> **Within his brain, the child is literally building the neural circuitry that links the sounds of spoken words, the phonemes, to the print code, the letters that represent these sounds.**  
>  
> —Shaywitz, 2003, p. 177

Research in the area of neuroscience reveals that both decoding and encoding should be emphasized during beginning reading instruction and practice. As researchers Fisher, Frey, and Hattie point out, “Phonics instruction is thought to establish and strengthen the brain structures that will form the phonological loop that links the apparatus responsible for processing the sounds of language with the long-term memory needed to sustain meaningful reading” (2016, p. 47). Through thousands of case studies, we now know the brain is not hard wired for reading, as it is for language. To learn to read, neural connections must be formed within the brain in order for a reader to automatically connect letters and sounds. For the great majority of individuals, these connections must be built through successful instructional experiences.
To develop children’s phonemic awareness and knowledge of basic letter-sound correspondences, spelling instruction is important. Beginning with short, regular words, such as pot, pat, and pan, the focus of these instructional activities is gradually extended to more complex spelling patterns and words, including long vowel spellings, inflections, and so on.

clear that as soon as students have some alphabetic knowledge, they need to practice using it to read and write. This is an important distinction. By systematically teaching a consonant or two and then a vowel, followed by a few more consonants and then another vowel, we enable children to, as quickly as possible, begin to practice blending sounds to form words (National Research Council, 1998).

Research also indicates that children will learn most effectively and efficiently if we employ a multi-modal technique when teaching letter-sound correspondences (Moats, 2011). Multi-modal teaching involves use of the hand, eye, and ear, and helps children focus on the relevant details of a letter, sound, or word. In kindergarten children need to learn to print the upper- and lowercase form of each letter of the alphabet as they learn to associate the letters with sounds.

Blending is a critical step in reading. Learning how to blend enables the child to move from sound-symbol mastery to blending sounds and on to word mastery and then fluent reading. As important as phonics is, phonics instruction cannot stand alone; we must have engaging, decodable texts that match the sequence of skills we are teaching. Research is very clear: we do not want children guessing and memorizing, so the texts we give our beginning readers need to be perfectly aligned to the sequence of letters and sounds we are teaching. We need for our students to develop a strong decoding habit as quickly as possible. This means we have to be careful about the types of texts and the types of words in the texts used in beginning reading instruction.

“As an instructional strategy, the teaching and the text cannot be separated.”
—Mesmer, 2001, p. 136

As Seidenberg points out, “Our poor children are subjected to a classic bait and switch: we emphasize the connections between letters and sounds and barrage them with alphabet books, apps, and videos; then, after they have finally gotten the alphabetic idea, the first words they read include HAVE, GIVE, SOME, ARE, WAS, SAID, WHO, WHAT, WHERE, DONE, LAUGH and other ‘exceptions’” (2017, p. 123).
Decodable text for beginning readers must include these two key characteristics:

1. A high proportion of words with phonetically regular relationships between letters and sounds

2. A close match between the letter/sound relationships represented in text and those that the reader has been taught

Decodable texts contain a perfect alignment between the phonic elements that have been taught and the words in the text children are given to read. This allows for students to not only apply what they are learning but to be successful in doing so. Through practice in text that matches the sequence of letter-sound instruction, children learn to rely on phonics as their primary decoding strategy. This helps ensure they become strong, confident readers who have the habit of decoding, rather than guessing, at new words. Through repeated practice applying their newly learned knowledge of letters and sounds to decodable text, beginning readers gradually become more automatic in their decoding. This is critical for fluent reading.

Systematic phonics instruction needs to continue in first grade with students learning consonant digraphs (e.g., sh, ch, and th), long-vowel patterns, r-controlled vowels, and other variant vowels such as vowel diphthongs (e.g., oi, ou). In second grade, phonics instruction should include learning to decode words such as contractions, words with various endings, silent letters, and words with the soft /s/ sound of c as in circle, and the soft /j/ sound of g as in giant.

Research doesn’t just show that phonics instruction is important, it unequivocally shows that systematic and explicit phonics instruction is essential. The skills of alphabet knowledge, phonological and phonemic awareness, and phonics serve as foundational reading skills all young readers need to acquire (Fisher, Frey, & Hattie, 2016) and must be intentionally and thoroughly taught. We teach these skills to enable our students to become fluent and accurate decoders. However, it is not enough for readers to read the words in text accurately—they need to read the words automatically and fluently (Rasinski, 2012).

**Fluency**

We have known for quite some time that skilled readers recognize words almost instantaneously. With repeated successful decoding of the same word, the child’s brain makes a neural model, called a word form, which allows the word to be read far more quickly. Just seeing the word activates all of the necessary components at once, mostly in the left hemisphere of the brain, without any conscious thought on the part of the reader (Ehri, 2014). This process, as Ehri points out, is referred to as orthographic mapping.

> Skillful readers can recognize the spelling, sound, and meaning of a familiar word almost instantly and automatically, leaving their active attention free for critical and reflective thought.

---

As more word forms collect, reading fluency and reading skill levels rise dramatically. The more skilled the reader, the more quickly the word form area responds to seeing a word—in less than 200 thousandths of a second, much faster than the blink of an eye (Dehaene, 2009). Typically developing readers have a solid phonological awareness base that continues to naturally develop as they become more proficient readers. For these students, orthographic mapping seems to occur relatively easily and naturally with reading practice. In contrast, weak readers who have not developed a solid phonological awareness base have difficulty with orthographic mapping (Kilpatrick, 2015). Since readers must correctly pronounce words encountered in text in order to create word forms, efforts to expand reading volume need to ensure that students are reading texts with a high level of accuracy. As Allington and Gabriel point out, “When students read accurately, they solidify their word recognition, decoding, and word analysis skills. Perhaps most important, they are likely to understand what they read—and, as a result, to enjoy reading” (Allington & Gabriel, 2012, p. 12).
Fluent reading develops gradually from kindergarten to second grade and includes attention to word reading fluency, sentence fluency, and passage fluency. Since a direct link exists between fluency and reading comprehension, fluency instruction and practice is extremely important. When students cannot quickly and accurately—fluently—get the text off the page, they have dysfluent reading that interferes with their ability to build meaning from the text. Although sometimes a lack of fluency can be attributed to gaps in vocabulary and comprehension or to a lack of oral reading practice, at the lower levels, dysfluency is usually from a lack of automatic decoding and word recognition skills. Using too much cognitive energy to decode words leaves little remaining for comprehension. Fluent readers, on the other hand, can focus their mental energy on understanding what they read rather than on recognizing words.

Ample research evidence links volume of reading to reading achievement and oral reading fluency (Foorman, et al., 2006; Kuhn & Stahl, 2003; Topping, Samuels, & Paul, 2007; Torgeson & Hudson, 2006). Students need to do a high volume of independent reading in increasingly challenging books. As Allington and Gabriel point out, “It’s not just the time spent with a book in hand, but rather the intensity and volume of high-success reading, that determines a student’s progress in learning to read” (2012, p. 12). Wide reading is critical to developing fluency, deep comprehension, and a large working vocabulary. In fact, simply expanding the opportunities to read seems to generally produce improved reading fluency and reading comprehension (Krashen, 2011).

The most critical factor behind fluent word reading is the ability to recognize letters, spelling patterns, and whole words effortlessly.

—Moats, 1994, p. 54

In addition to helping students develop automatic decoding and word recognition skills through high volume, high-success reading in a wide variety of texts, we need to provide our students with many models of adult oral reading fluency. Reading to students not only increases students’ fluency, but expands their vocabulary, background knowledge, sense of story, awareness of genre and text structure, and comprehension of the texts read (Wu & Samuels, 2004).
CONCLUSION

A strong foundation in PreK–grade 2 is the only way to ensure a strong growth trajectory in reading for all of our students. The foundations of reading must be built in a systematic, explicit, and sequential manner. In contrast, a foundation that is built in an implicit and randomly sequenced manner, without explicit and systematic instruction, is not likely to sustain over time.

We must build students’ reading capacity so that they are able to move from cumulatively decodable texts to reading grade appropriate, complex texts in grade 2 and beyond. Students who struggle to decode the words quickly enough begin to avoid reading, and the lack of practice contributes to a lack of vocabulary, academic language, and content knowledge. This all results in lower comprehension and a lack of motivation to continue to expend the effort necessary for learning to read.

The foundational reading skills are those that enable students to read words, relate those words to their oral language, and read connected text with sufficient accuracy and fluency to understand what they read. Unarguably, foundational skills are necessary and important components of effective reading instruction; however, acquisition of foundational skills is not the end goal of beginning reading instruction. Our target, our end goal, is development of proficient readers with the capacity to comprehend texts across a wide range of types and disciplines. Consequently, foundational skills instruction should occur not in isolation, but in concert with instruction related to reading, writing, speaking, and listening. As indicated by Moats, “The methods supported by research are those that are explicit, systematic, cumulative, and multisensory, in that they integrate listening, speaking, reading, and writing” (2011, p. 51).

Teaching students academic language skills and vocabulary knowledge, an awareness of the relationship between letters and sounds, and to decode and recognize words, and then ensuring daily reading of connected text provides students with the necessary foundation for reading accurately, fluently, and with comprehension.

“Understanding the relationship among the many component skills of readers early in their reading development is important because a deficiency in any of the component skills has the potential to affect the development of other skills and, ultimately, the development of the child as a proficient reader.”

—Hudson, Torgeson, Lane, & Turner, 2012, p. 483
ABOUT THE AUTHOR

Kathy Barclay, EdD, is professor emeritus of reading and early childhood and former department chair at Western Illinois University. She is a former classroom teacher, reading specialist, and supervisor of reading for the Louisiana Department of Education. While at WIU, she worked closely with the Illinois State Board of Education, serving as co-author of the Illinois Reading First Professional Development Academies and lead consultant for the Language and Literacy section of the 2013 Illinois Early Learning and Development Standards. For ten years, Dr. Barclay served as the editor of the Illinois Reading Council Journal. In October of 2015, she was inducted into the Illinois Reading Council’s Hall of Fame for her contributions to education and literacy. Dr. Barclay is a frequent presenter at professional conferences and has authored over 80 publications. Her more recent book, co-authored with Laura Stewart, is The Everything Guide to Informational Literature, K–2: Best Texts, Best Practices (Corwin Press, 2014).

REFERENCES


Building a Strong FOUNDATION for LEARNING to READ