



PHONICS

for Reading

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Research Summary

Research Report

Phonics for Reading is a research-based program that reflects the findings of the major national documents on reading, including *Becoming a Nation of Readers* (Anderson et al., 1985), *Preventing Reading Difficulties in Young Children* (Snow et al., 1998), and the *National Reading Panel Report* (2000), which summarized research on numerous topics, including phonemic awareness, phonics, fluency, and comprehension. In addition to these reports, the design of **Phonics for Reading** was informed by the research on beginning reading (Honig, Diamond, and Gutlohn, 2008), the research on reading interventions for older, struggling readers (Archer, Gleason, and Vachon, 2003), the research on explicit instruction (Archer and Hughes, 2011), and the research on literacy and cultural diversity (Morrow, Rueda, and Lapp, 2009).

Phonemic Awareness

Phonemic awareness refers to the understanding that words can be segmented into constituent sounds or phonemes. Students must understand that the words they say can be segmented into sounds so that they can map letters (graphemes) onto those sounds (phonemes) and use those letter-sound associations to decode unknown words (Chard and Dickson, 1999; Erhi and Roberts, 2006). A lack of this understanding is the most common cause of children's early difficulties in acquiring accurate and fluent word recognition skills (Torgesen, 2002; Torgesen, 2004). Students with strong phonological skills will likely become good readers, and students with weak phonological skills will likely become weak readers (Blachman, 2000). In fact, phonemic awareness has proven to be the best early predictor of reading difficulties (Adams, 1990) and is more highly related to learning to read than are tests of general intelligence, reading readiness, and listening comprehension (Stanovich, 1994).

Research clearly indicates that phonemic awareness can be developed through instruction, and that doing so accelerates students' reading and writing achievement (Ball and Blachman, 1991; Lane and Pullen, 2004). When

phonemic awareness is taught, it enhances the reading acquisition of young students as they move into first and second grade (Foorman et al., 1997) as well as the reading gains of older, struggling readers. Torgesen and Mathes (1998) concluded that phonemic awareness training would accelerate the reading growth of all children, but is particularly vital for at least 20 percent of children to acquire useful reading skills.

Because of its importance to beginning reading acquisition, phonemic awareness activities are included in **Phonics for Reading**. Consistent with the recommendations of the National Reading Panel (2000), the authors incorporated a limited number of phonemic awareness tasks into the program. As a result, students become familiar with the tasks, allowing them to direct their cognitive energy to the content rather than the tasks. These tasks focus on blending and segmenting, which are the phonemic awareness skills that have the greatest benefit to reading and spelling acquisition (Snider, 1995). In the blending activities, students hear the sounds in a word and say the whole word. In the segmenting activities, students put up a finger as they say each sound within a word. Torgesen et al. (1994) concluded that phonemic awareness training for at-risk children must be more explicit and intense than that for other students. For this reason, the program provides explicit modeling of these blending and segmenting tasks and daily practice with increasingly difficult words.

Phonics

Phonics is the study and use of letter-sound associations to pronounce (decode) unknown words and to spell (encode) words. In the past, students were taught that there were three equal cueing systems that could be used to determine the pronunciation of an unknown word: the phonological cueing system (letter-sound associations), the semantic cueing system (context and pictures), and the syntactical cueing system (word order). However, research has shown that good readers rely on letters in a word rather than context or pictures to pronounce familiar and unfamiliar words (Ehri, 1994).

Research has also determined that competent readers do not sample text as they read, but rather process the letters of each word, although this is done rapidly and unconsciously (Adams et al., 1998; Share and Stanovich, 1995; Rayner and Pollatsek, 1989). For these reasons, **Phonics for Reading** teaches students to use letter-sound associations as their primary decoding tool and to utilize the semantic and syntactical cues to confirm the accuracy of their initial pronunciation of a word.

As with phonemic awareness, students—especially those struggling to acquire reading skills—benefit from very explicit instruction, in this case focused on letter-sound associations and their application to the decoding and encoding of words. In fact, one of the most well-established conclusions in all of behavioral science is that direct instruction on letter-sound associations and word decoding facilitates early reading acquisition (Stanovich, 1994). To optimize student gains in decoding and encoding, **Phonics for Reading** uses the following instructional steps: a) introduce a letter-sound association, b) guide students in reading one-syllable words with the letter-sound association, c) provide reading practice with multisyllabic words containing the letter-sound association, d) have students read decodable passages containing words with the target letter-sound association, and e) dictate spelling words containing the target letter sound. The research basis for each of these steps is articulated below.

Letter-Sound Associations Many studies have confirmed that students are more successful readers if they have been taught letter-sound associations (Juel, 1991). In teaching letter-sound associations, **Phonics for Reading** is consistent with the recommendations of the National Reading Panel (2000). First, only the highest frequency letter-sound associations are introduced. Next, an explicit instructional approach is utilized in which the sounds for the letters are modeled and practiced with other graphemes during initial practice sessions, followed by distributive and cumulative practice in subsequent lessons (Archer and Hughes, 2011; Carnine et al., 2006).

Decodable Words As soon as the letter-sound associations have been introduced, they are immediately placed in words that reflect common English configurations (e.g., CVC, CVCC, CCVC, CVCe, CVVC). Students are explicitly taught the following decoding strategy: a) say the sounds for each grapheme, b) blend the sounds together, c) pronounce the entire word, and d) ask yourself if it is the “real word.” Students repeatedly sound out words in which the focus grapheme is mixed with words containing previously taught graphemes deliberately chosen to promote careful scrutiny of the letters (e.g., *lake, tale, mane, man, tape, tap, fate*) to diminish “guessing” as a strategy. As Beck (2006) concluded, the ability to blend individual sounds into a recognizable word is an important component of reading.

Systematic phonics instruction has many benefits including: a) preventing reading difficulties among at-risk students (Ambruster, Lehr, and Osborn, 2001), b) helping children overcome reading difficulties, and increasing the ability to comprehend text for beginning readers and older students with reading challenges (National Reading Panel, 2000).

Multisyllabic Words The ability to read one-syllable words does not necessarily lead to proficiency with multisyllabic words (Just and Carpenter, 1987). Decoding instruction must go beyond one-syllable words to multisyllabic words to truly prepare students for intermediate and secondary reading and also to ensure that students are not intimidated when confronted by long words. From fifth grade on, students encounter about 10,000 unknown words each year (Nagy and Anderson, 1984), the majority of which are multisyllabic words (Cunningham, 1998) that often convey the meaning of the passage. For example, when reading an article about the water cycle, students will need to decode words such as *evaporation, precipitation, and transpiration*. Students must be taught systematic procedures for decoding longer words, such as these.

Research indicates that when good readers encounter unfamiliar multisyllabic words, they chunk the words into manageable, decodable units (Adams, 1990; Mewhort and Campbell, 1981). To facilitate the development of this process, each level of this program presents multisyllabic words segmented into decodable chunks, or parts (Archer, Gleason, and Vachon, 2003). Loops under the words indicate the parts, which students are asked to read one by one and then to blend into a word. As suggested by research in this area, students are also taught to use affixes and vowels to pronounce longer words (Chall and Popp, 1996; Shefelbine, 1990; Shefelbine and Calhoun, 1991).

High-Frequency Words In order to be a fluent reader, students must quickly and automatically recognize the most common words appearing in text (Blevins, 1998). Only 100 words account for approximately 50 percent of the English words in print (Fry et al., 1985). Thirteen words (*a, and, for, he, is, in, it, of, that, the, to, was, you*) account for 25 percent of the words in print (Johns, 1980). Many of the most frequent words are irregular, having unique letter-sound associations. For example, the high-frequency words *you, was, of, said, do, some, and what* are not pronounced as expected, given the letters in the words.

In **Phonics for Reading**, high-frequency words are systematically introduced, practiced, and reviewed. A spell-out method is used for directly teaching high-frequency words. Students hear the word, say the word, spell the word letter by letter, and finally repeat the word (Honig et al., 2008). As suggested by Louisa Moats (2005), high-frequency, irregular words are grouped by pattern when possible (e.g., *would, could; come, some; all, call, tall*) to facilitate acquisition.

Reading Decodable Text After students have been introduced to short, decodable words, multisyllabic, decodable words, and high-frequency words, they read decodable passages containing these words. Decodable text is useful in beginning reading for developing automaticity and fluency (Chard and Osborn, 1999) and for providing students with a strong start in reading (Blevins, 2006). Anderson et al. (1985) and Juel (1994) recommended that 90 percent of the words in a story should be decodable.

“The important point is that a high proportion of the words in the earliest selections students read should conform to the phonics they have already been taught. Otherwise, they will not have enough opportunity to practice, extend, and refine their knowledge of letter-sound relations.” (*Becoming a Nation of Readers*, 1985).

Spelling Spelling dictation was included in each **Phonics for Reading** lesson for a number of reasons. First, learning to read and spell rely on much of the same underlying knowledge, such as letter-sound associations, affixes, and word patterns (Joshi, Treiman, Carreker, and Moats, 2008/2009). Because of the reciprocal relationship between decoding and encoding, spelling instruction can help children better understand key knowledge, resulting in better reading (Ehri, 2000). Likewise, reading instruction focused on the patterns of words can strengthen spelling. Systematic spelling instruction is also critical to improving students’ writing skills. Writers who must think too hard about how to spell words use crucial cognitive resources that could be used for higher level aspects of composition, such as organization, transcription, and revision (Singer & Bashir, 2004). Because of the importance of spelling, in each **Phonics for Reading** lesson, students are asked to spell words that contain letter-sound associations and affixes that they have been taught and have used in decoding words.

Fluency

Fluency has been defined as being able to read words accurately and fluently with expression or prosody (Hudson, Lane, and Pullen, 2005). Meyer and Felton (1999) concluded that fluency is “the ability to read connected text rapidly, smoothly, effortlessly, and automatically with little conscious attention to the mechanics of reading such as decoding” (p. 284). When students are able to read fluently, decoding requires less attention and cognitive effort. Instead, attention and cognition can be directed to comprehension (La Berge and Samuels, 1974; Stanovich, 1986). Not surprising, oral reading rate is strongly correlated with reading comprehension (Torgesen and Hudson, 2006). As Hasbrouck (2006) concluded, if students read slowly, they struggle to remember what was read, much less to extract meaning.

Another result of laborious decoding and low fluency is little reading practice (Moats, 2001). Because reading is arduous for struggling readers, they read less over time and fail to gain fluency, while their peers read more and more over time and become increasingly fluent; thus, the gap between the best readers and the weakest readers widens as they get older. The term “Matthew Effect” illustrates this rich-get-richer and poor-get-poorer phenomenon (Stanovich, 1986). Fluent, voracious readers are likely to gain, among other things, increased vocabulary, background knowledge, ideas that can be incorporated into written products, visual memory of words for spelling, and schema for understanding certain genre. It has even been suggested that voracious reading can alter measured intelligence (Cunningham & Stanovich, 1998).

Fluency in reading, like automaticity of any skill, is primarily gained through practice. In ***Phonics for Reading***, students are given abundant practice in reading lists of words and decodable passages. The decodable passages are read more than once. The students read the passages silently first and then orally. Oral reading has particular benefits at the beginning reading stages (National Reading Panel, 2000) for a number of reasons. First, the student can listen to his/her own reading and determine if the words are pronounced accurately. Second, the teacher can also listen to the student and gain information on the accuracy of the student’s reading.

In ***Phonics for Reading, Second Level*** and ***Third Level***, focused, intentional fluency practice is also provided by using a research-based procedure referred to as repeated readings. After completing a comprehensive review of fluency intervention studies conducted in the past 25 years, Chard, et al. (2002) concluded that repeated reading interventions with struggling readers were associated with improvement in reading rate, accuracy, and comprehension. In ***Phonics for Reading***, students read a short passage a number of times. After practice, they read the passage for a minute, count the number of words read, and graph the number. Timing student’s reading is effective in increasing accuracy and fluency (Hasbrouck and Tindal, 1992).

Comprehension

The desired outcome of all reading instruction is that students can read passages, constructing meaning as they proceed and extracting the gist of the passage. Each of the reading components previously discussed contributes to increased reading comprehension. If students can decode words accurately, comprehension will be facilitated. Similarly, if students can fluently read a passage, comprehension is enhanced. Nevertheless, as in all areas of reading, students benefit from systematic instruction and intentional practice.

Phonics for Reading addresses comprehension in a number of ways. First, in response to a portion of a reading passage, the students are asked to select an illustration that depicts what has been read. They are also asked to respond to oral comprehension questions, a time-honored and research-validated procedure to increase reading comprehension (National Reading Panel, 2000; McKeown, Beck, and Blake, 2009). As Ambruster, Lehr, and Osborn (2001) suggested, responding to oral comprehension questions encourages students to form better answers and to learn more. In addition, students are taught to answer written questions on passage content in response to the most common questioning words: *who, what, when, where, how, and why*. This instruction, like all of the instruction in ***Phonics for Reading***, involves modeling the skill followed by guided practice, support which is gradually reduced. This type of scaffolding, found in all strands of the program, is designed to increase the success experienced by students who have encountered consistent failure in the past.

References

- Adams, M. J. 1990. *Beginning to Read: Thinking and Learning About Print*. Cambridge, MA: MIT Press.
- Adams, M. J., R. Treiman, and M. Pressley. 1998. Reading, writing, and literacy. In *Handbook of Child Psychology* 4, edited by I. E. Sigel and K. A. Renninger, 275–355. New York: Wiley.
- Ambruster, B., F. Lehr, and J. Osborn. 2001. *Put reading first: The research building blocks for teaching children to read*. Jessup, MD: National Institute for Literacy.
- Anderson, R. C., E. H. Heibert, J. A. Scott, and I. A. G. Wilkinson. 1985. *Becoming a Nation of Readers: The Report of the Commission on Reading*. Washington, D.C.: National Institute of Education.
- Archer, A. L., M. M. Gleason, and V. L. Vachon. 2003. Decoding and fluency: Foundation skills for struggling older readers. *Learning Disability Quarterly* 26, pp. 89–101.
- Archer, A., and C. Hughes. 2011. *Explicit Instruction: Effective and Efficient Teaching*. New York: Guilford.
- Ball, E. W., and B. A. Blachman. 1991. Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? *Reading Research Quarterly* 26 (1): 33–44.
- Beck, I. L., 2006. *Making sense of phonics: The hows and whys*. New York: Guilford.
- Blachman, B. A. 2000. Phonological awareness. In M. L. Kamil, P. B. Rosenthal, P. D. Pearson, and R. Barr (eds), *Handbook of reading research*, Vol. 3 (pp. 483–502). Mahwah, NJ: Erlbaum.
- Blevins, W. 1998. *Phonics from A to Z: A Practical Guide*. New York: Scholastic.
- Carnine, D. W., J. Silbert, E. J. Kame'enui, S. Tarver, and K. Jungjohann. 2006. *Teaching struggling and at-risk readers*. Upper Saddle River, NJ: Pearson.
- Chall, J. S. 1996. *Learning to Read: The Great Debate*. New York: McGraw-Hill.
- Chall, J. S., and H. M. Popp. 1996. *Teaching and Assessing Phonics: A Guide for Teachers*. Cambridge, MA: Educator's Publishing Service.
- Chard, D. J., and J. Osborn. 1999. Phonics and word-recognition instruction in early reading programs: Guidelines for accessibility. *Learning Disabilities Research and Practice* 14(2): 107–117.
- Chard, D. J., and S. V. Dickson. 1999. Phonological awareness: Instructional and assessment guidelines. *Intervention in School and Clinic* 34: 261–270.
- Chard, D. J., S. Vaughn, and B. J. Tyler. 2002. A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities* 35, 386–406.
- Cunningham, P. M., & Stanovich. 1998. The multisyllabic-word dilemma: Helping students build meaning, spell, and read “big” words. *Reading and Writing Quarterly: Overcoming Learning Difficulties* 14: 189–218
- Ehri, L. 2000. Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders*, 20(3), 19–49.
- Ehri, L. 1994. Development of the ability to read words. In *Theoretical Models and Processes of Reading*, edited by R. Ruddell, M. Ruddell, and H. Singer. Newark, DE: International Reading Association.
- Ehri, L. C., & T. Roberts. 2006. The roots of learning to read and write: Acquisition of letters and phonemic awareness. In *Handbook of early literacy research*, Vol. 2, eds. D. K. Dickinson & S. B. Neuman, 113–31. New York: Guilford.
- Foorman, B. R., D. J. Francis, S. E. Shaywitz, B. A. Shaywitz, and J. M. Fletcher. 1997. The case for early reading intervention. In *Foundations of Reading Acquisition and Dyslexia: Implications for Early Intervention*, edited by B. A. Blachman, 243–264. Mahwah, NJ: Erlbaum.
- Fry, E., D. Fountoukidis, and J. Polk. 1985. *The New Reading Teacher's Book of Lists*. Upper Saddle River, NJ: Prentice-Hall.
- Hasbrouck, J. 2006, Summer. Drop everything and read—but how? *The American Educator*, 30(2), 22–31.
- Hasbrouck, J. E., and G. Tindal. 1992. Curriculum-based oral reading fluency norms for students in grades 2 through 5. *Teaching Exceptional Children* 24(3): 41–44.
- Honig, B., L. Diamond, and L. Gutlohn. 2008. *Teaching Reading Sourcebook for Kindergarten Through Eighth Grade*. Second Edition. Novato, CA: Arena Press.
- Hudson, R. F., Lane, H. B., & Pullen, P. C. (2005). Reading fluency assessment and instruction: What, why, and how? *The Reading Teacher*, 58, 702–714.
- Joshi, M., Treiman, R., Carreker, S., & Moats, L. C. (2008/2009) How words cast their spell: Spelling is an integral part of learning the language, not a matter of memorization. *American Educator*, 32(4), 6–16, 42–43.

- Johns, J. L. 1980. First-graders' concepts about print. *Reading Research Quarterly* 15.
- Juel, C. 1994. *Learning to Read in One Elementary School*. New York: Springer-Verlag.
- Juel, C. 1991. Beginning reading. In *Handbook of Reading Research 2*, edited by R. Barr, M. L. Kamil, P. B. Mosenthal, and P. D. Pearson. Mahwah, NJ: Erlbaum.
- Just, M. A., and P. A. Carpenter. 1987. *The Psychology of Reading and Language Comprehension*. Boston: Allyn and Bacon.
- LaBerge, D., and S. J. Samuels. 1974. Toward a theory of automatic information processing in reading. *Cognitive Psychology* 6: 292–323.
- Lane, H. B, and P. C. Pullen. 2004. *A sound beginning: Phonological awareness assessment and instruction*. Boston: Allyn & Bacon.
- McKeown, M.G., Beck, I. L., and Blake, R. K. 2009, July/August/September. Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches. *Reading Research Quarterly*, 44(3), 218–253.
- Mewhort, D. J. K., and A. J. Campbell. 1981. Toward a model of skilled reading: An analysis of performance in tachistoscopic tasks. In *Reading Research: Advances in Theory and Practice 3*, edited by G. E. MacKinnon and T. G. Walker, 39–118. New York: Academic Press.
- Meyer, M. S. and R. H. Felton. 1999. Repeated reading to enhance fluency: Old approaches and new directions. *Annals of Dyslexia*, 49, 283–306.
- Moats, L. C. 2005. When older students can't read. *Educational Leadership*, 58, 36–40.
- Morrow, L. M., Rueda, R., & Lapp, D. (2009) *Handbook of research on literacy and diversity*. New York: Guilford.
- Nagy, W., and R. C. Anderson. 1984. How many words are there in printed school English? *Reading Research Quarterly* 19: 304–330.
- National Reading Panel. 2000. *Teaching Children to Read: An Evidence-based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction*. Bethesda, MD: National Institute of Child Health and Human Development.
- Rayner, K., and A. Pollatsek. 1989. *The Psychology of Reading*. Englewood Cliffs, NJ: Prentice Hall.
- Share, D., and K. E. Stanovich. 1995. Cognitive processes in early reading development: Accommodating individual differences into a mode of acquisition. *Issues in Education: Contributions for Educational Psychology* 1: 1–57.
- Shenfeld, J. 1990. A syllable-unit approach to teaching decoding of polysyllabic words to fourth- and sixth-grade disabled readers. In *Literacy Theory and Research: Analysis from Multiple Paradigms*, edited by J. Zutell and S. McCormick, 223–230. Chicago: National Reading Conference.
- Shenfeld, J., and J. Calhoun. 1991. Variability in approaches to identifying polysyllabic words: A descriptive study of sixth graders with highly, moderately, and poorly developed syllabication strategies. In *Learner Factors/Teacher Factors: Issues in Literacy Research and Instruction*, edited by J. Zutell and S. McCormick, 169–177. Chicago: National Reading Conference.
- Singer, B. and A. Bashir. 2004. Developmental variations in writing. In Stone, C. A., Silliman, E. R., Ehren, B. J., and Apel, K. (Eds.), *Handbook of Language and Literacy: Development and Disorders*, pp. 559–582. New York: Guilford.
- Snider, V. E. 1995. A primer on phonemic awareness: What it is, why it's important, and how to teach it. *School Psychology Review* 24: 443–455.
- Snow, C. E., M. S. Burns, and P. Griffin. 1998. *Preventing Reading Difficulties in Young Children*. Washington, D.C.: National Academy Press.
- Stanovich, K. E. 1986. Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly* 21: 360–407.
- Stanovich, K. E. 1994. Romance and reality. *The Reading Teacher* 47(4): 280–291.
- Torgesen, J. K. 2002. The prevention of reading difficulties. *Journal of School Psychology*, 40, 7–26.
- Torgesen, J. K. 2004. Preventing early reading failure. *American Educator*, Fall.
- Torgesen, J. K., R. K. Wagner, and C. A. Rashotte. 1994. Longitudinal studies of phonological processing and reading. *Journal of Learning Disabilities* 27: 276–286.
- Torgesen, J. K. and R. Hudson. 2006. Reading fluency: Critical issues for struggling readers. In S. J. Samuels and A. Farstrup (Eds.), *Reading Fluency: The forgotten dimension of reading success*. Newark, DE: International Reading Association Monograph of the British Journal of Educational Psychology.
- Torgesen, J. K, and P. Mathes. 1998. What every teacher should know about phonological awareness. *CORE Reading Research Anthology*. Novato, CA: Arena Press.