

# Rationale and Research

## Waterford Early Reading Program

In order to implement the most effective methods for teaching beginning reading, the designers of *Waterford Early Reading Program™*, all former teachers, researched data, consulted experts, and observed students. Some of their findings are explained below.

To see how these findings have been implemented into each of the instructional strands, refer to the “Scope and Sequence” section in this guide.

### PHONOLOGICAL AWARENESS INSTRUCTIONAL STRAND

The Phonological Awareness Instruction Strand is composed of two areas: phonological awareness and phonemic awareness.

**Phonological awareness** includes identifying and manipulating larger parts of spoken language, such as words, syllables, onsets and rimes, as well as phonemes. *Waterford Early Reading Program’s* phonological awareness curriculum adheres to the following research:

- Phonological awareness is important in learning to read (Griffith & Olsen, March 1992, pp. 516–523; Bradley & Bryant, 1989, p. 419; Juel, 1991; Juel, 1988, p. 778; and Torgesen & Mathis, 2000).
- Rhyme is one of the simplest ways to draw young student’s attention to the insides of words. An early knowledge of nursery rhymes is strongly related to other phonological skills and emerging reading abilities (MacLean, et al., 1987, pp. 277–278).
- “The ‘causal connection’ between phonological awareness and reading is strongest at the stage of early reading acquisition” (Stanovich, 2000, p. 93).
- “Turning to phonological awareness, there is an extensive research base in support of the effectiveness and practical utility of providing kindergartners with instruction in this skill” (Snow, et al., 1998, p. 185).
- “Young children who receive specific training in phonological awareness are able to learn to read more quickly than children of similar backgrounds who do not receive such training” (Snow, et al., 1998, p. 185).
- “A variety of games and activities have been designed to direct children’s attention to the sounds, rather than just the meanings, of spoken words. These activities can involve, for instance, detecting and producing rhymes and alliterative sequences in songs and speech, identifying objects in the environment whose names begin (or end) with the same sound, clapping to indicate the number of syllables (or phonemes) in a spoken word, and so forth” (Snow, et al., 1998, p. 187).

**Phonemic awareness** is one type of phonological awareness. It encompasses the ability to hear, identify, and manipulate individual sounds (phonemes) in spoken words. The information below outlines the importance of phonemic awareness.

- “Correlational studies have identified phonemic awareness and letter-knowledge as the two best school-entry predictors of how well children will learn to read during the first 2 years in school” (National Reading Panel, 2000, p. 2-1)
- “Attaining phonemic awareness is difficult for most children and far more difficult for some than others. Still, because phonemes are the units of sound that are represented by the letters of an alphabet, an awareness of phonemes is key to understanding the logic of the alphabetic principle. Unless and until children have a basic awareness of the phonemic structure of language, asking them for the first sound in the word *boy*, or expecting them to understand that *cap* has three sounds while *camp* has four, is to little avail” (Snow, et al., 1998, p. 54).
- Children who have phonemic awareness skills are likely to have an easier time learning to read and spell than children who have few or none of these skills (National Reading Panel, 2000, p. 2-19).
- One of the “essentials of an effective early intervention program is systematic and direct instruction in phonemic awareness” (Shaywitz, 2003, p. 262).
- “By the end of first grade, students should be well on the way to mastering phonemic awareness. No longer working on sounds or letters separately, they now are able to put these elements of the code together to read meaningful, connected texts.” At this time the students should be able to separate the sounds of a word and blend separately spoken phonemes to make a meaningful word (New Standards Primary Literacy Committee, 2009, p. 70).
- “Teaching students to segment and blend benefits reading more than a multiskilled approach. Teaching students to manipulate phonemes with letters yields larger effects than teaching students without letters, not surprisingly because letters help children make the connection between PA [phonemic awareness] and its application to reading” (National Reading Panel, 2000, p. 2-41).
- “In Kindergarten, children should be learning phonemic awareness, the ability to hear and say the separate sounds (phonemes) in words. Specifically by the end of Kindergarten, we expect children to: produce rhyming words and recognize pairs of rhyming words; isolate initial consonants in single-syllable words; when a single-syllable word is pronounced, identify the onset and rime and begin to fully separate the sounds by saying each sound aloud; and blend onsets and rimes to form words and begin to blend separately spoken phonemes to make a meaningful one-syllable word” (New Standards Primary Literacy Committee, 1999, p. 54).

## PHONICS INSTRUCTIONAL STRAND

**Phonics** explores the relationship between the letters of written language and the individual sounds of spoken language to read and write words. Phonics also includes an understanding of the alphabetic principle. The following information outlines the benefits of phonics instruction.

- “Children leaving kindergarten should know the letters of the alphabet and many of their corresponding sounds. The precise number of letters and sounds kindergartners should know is not important; what is essential is that children grasp the *idea* of how letters represent sounds. We expect children leaving kindergarten to: recognize and name most letters; recognize and say the common sounds of most letters and write a letter that goes with a spoken sound; and use their knowledge of sounds and letters to write phonetically, representing consonant sounds with single letters in the correct sequence” (New Standards Primary Literacy Committee, 1999, p. 52).
- “Children enter school with widely varying degrees of letter knowledge, and how well kindergartners can identify letters is a strong predictor of future achievement in reading” (Snow, et al., 1998, p. 185).
- “The relationship between spelling patterns and their pronunciations is called *phonics*, and although there has been much debate over its importance, the fact is that all students learn about letter–sound relationships regardless of the type of instruction they receive. Then they use this knowledge to decode new words” (Snow, et al., 1998, pp. 173–174).
- A principle difference between a good reader and a poor reader is the good reader’s ability to rapidly use spelling–sound knowledge and identify words (Juel, 1988, pp. 444–445; Lieberman & Shankweiler, 1985, pp. 10–11; Perfetti, 1985, pp. 6–10; Stanovich, 1980, p. 38).
- Systematic and explicit phonics instruction makes a bigger contribution to children’s growth in reading than instruction that provides non-systematic or no phonics instruction (National Reading Panel, 2000, p. 2-92).
- Phonics instruction should be a prominent part of any beginning reading program, but it should by no means be a program’s only concern (Adams, 1990, p. 411).
- Skillful readers “process the letters of text . . . quickly and easily” because they have an “overlearned knowledge about the sequences of letters comprising frequent words and spelling patterns” (Adams, 1990, p. 410).

## COMPREHENSION AND VOCABULARY INSTRUCTIONAL STRAND

The Comprehension and Vocabulary Instructional Strand combines vocabulary and comprehension because vocabulary is vital to comprehension of text.

**Vocabulary** includes words we must know to communicate effectively, both orally (words spoken or recognized while listening) and visually (words used in print). The following research outlines the importance of vocabulary.

- “Most children enter kindergarten with vocabularies that are more than ample for what they read. But because of the vocabulary of the books they will read, . . . children’s vocabularies also must grow—even in kindergarten. Children should learn not only new words but also new meanings and uses for familiar words” (New Standards Primary Literacy Committee, 1999, p. 66).
- Vocabulary is also very important to reading comprehension. Readers cannot understand what they are reading without knowing what most of the words mean. As children learn to read more advanced texts, they must learn the meaning of new words that are not part of their oral vocabulary (National Reading Panel, 2000, pp. 4-3–4-4).

- Children learn the meanings of most words indirectly, through everyday experiences with oral and written language (National Reading Panel, 2000, p. 4-4).
- Children learn word meanings indirectly in three ways: they engage daily in oral language; they listen to adults read to them; they read extensively on their own (National Reading Panel, 2000, p. 4-3).
- Students learn vocabulary directly when they are explicitly taught both individual words and word-learning strategies. Direct vocabulary instruction aids reading comprehension (National Reading Panel, 2000, pp. 4-3–4-4).

**Comprehension** means reading for a purpose and actively thinking during reading. The following research outlines the importance of comprehension.

- Using their experiences and knowledge of the world, their knowledge of vocabulary and language structure, and their knowledge of reading strategies (or plans), good readers make sense of the text and know how to get the most out of it. They know when they have problems with understanding and how to resolve these problems as they occur (National Reading Panel, 2000, pp. 4-5–4-6).
- Instruction in comprehension can help students understand what they read, remember what they read, and communicate with others about what they read (National Reading Panel, 2000, p. 4-6).
- “Beginning in the earliest grades, instruction should promote comprehension by actively building linguistic and conceptual knowledge in a rich variety of domains, as well as through direct instruction about comprehension strategies” (Snow, et al., 1998, p. 7).
- The following six strategies appear to have a firm scientific basis for improving text comprehension: Monitoring comprehension; Using graphic and semantic organizers; Answering questions; Generating questions; Recognizing story structure; Summarizing (National Reading Panel, 2000, p. 4-6).
- “Comprehension strategies instruction typically includes two components: direct explanation and scaffolding. . . . Then with time, practice, feedback, and coaching, students gain the knowledge and motivation to use independently what they have learned. In short, the goal is for students to become self-regulated in their strategy use” (Block and Pressley, 2002, p. 64).

## **LANGUAGE CONCEPTS INSTRUCTIONAL STRAND**

**Language concepts** include print awareness, language conventions, grammar, and language structure. The following information outlines the importance of language concepts instruction.

- An important preparation for beginning reading instruction is the understanding that print is made up of letters and words that are read from left to right (Clay, 1991, pp. 141–154; Adams, 1990, pp. 333–374).
- Researchers have found that writing helps beginning readers gain a better understanding of reading in general because they begin to read with the “eye of a writer” (Tierney & Leys, 1986, p. 19).

- “Through writing, children learn that the purpose of text is not to be read but to be understood” (Adams, 1990, p. 405).
- “From first grade on, reading and language arts programs need a strand of continuing skills development for grammar, usage, and composition; mechanics (such as capitalization and punctuation); syllabication, prefixes, suffixes, and derivatives such as *ing* and *ed* . . . These skills should not be de-emphasized in the mistaken belief that they can be learned only in the context of writing or that teaching skills hampers writing” (Honig, 1996, p. 89).
- When children are gaining an awareness of print, “adults serve as facilitators and planners who . . . structure the environment so that certain literacy experiences are apt to occur. They surround children with print. . . Literacy learning proceeds naturally if the environment supports young children’s experimentation with print” (Strickland & Cullinan, 1990, pp. 430–431).

## FLUENCY INSTRUCTIONAL STRAND

**Fluency** is the ability to read text accurately and quickly and with appropriate expression. The following research outlines the importance of fluency instruction.

- “Direct instruction in fluent oral reading produces readers who move from word-by-word reading to more efficient phrase reading” (Allington, 1983, p. 559).
- “Repeated reading and other guided oral reading procedures have clearly been shown to improve fluency and overall reading achievement” (National Reading Panel, 2000, p. 3-28).
- “Because the ability to obtain meaning from print depends so strongly on the development of word recognition accuracy and reading fluency, both of the latter should be regularly assessed in the classroom, permitting timely and effective instructional response when difficulty or delay is apparent” (Snow, et al., 1998, p. 7).
- “Fluency should be promoted through practice with a wide variety of well-written and engaging texts at the child’s own comfortable reading level” (Snow, et al., 1998, p. 7).
- “Fluency is important because it provides a bridge between word recognition and comprehension. Because fluent readers do not have to concentrate on decoding the words, they can focus their attention on what the text means. They can make connections among the ideas in the text and between the text and their background knowledge. In other words, fluent readers recognize words and comprehend at the same time” (National Reading Panel, 2000, p. 3-8).
- “Monitoring student progress in reading fluency is useful in evaluating instruction and setting instructional goals can be motivating to students” (Armbruster, et al., 2001, p. 31).
- Four ways to build reading fluency include:
  - Model good oral reading
  - Provide oral support for readers
  - Offer plenty of practice opportunities
  - Encourage fluency through phrasing (Rasinski, 2003, pp. 26–33)

- “Oral reading . . . offers us a window into the reading process. Strengths and weaknesses in word recognition, fluency, and—to a lesser extent—comprehension are measured by analyzing the quality of the student’s oral reading and any deviations from the text. We can even make inferences about the strategies the student is using based on the number and type of deviations he makes” (Rasinski, 2003, p. 157).
- “By listening to good models of fluent reading, students learn how a reader’s voice can help written text make sense” (Armbruster, et al., 2001, p. 26).

## Keyboarding to Read and Write

*Keyboarding to Read and Write* is based on extensive research. The information below summarizes a few of the major benefits of keyboarding instruction.

- **Learning keyboarding skills helps improve reading and writing skills.** Students who type or keyboard dramatically out-perform their nontyping counterparts in reading, reading comprehension, writing, spelling, capitalization, punctuation, and language. Research shows that children with keying skills are able to compose faster, are prouder of their work, produce documents with a neater appearance, have better motivation, and demonstrate improved language arts skills (Nieman, 1996). Ann Cothran and George E. Mason in *Elementary School Journal* report the following, based on several studies:
  - Children of elementary-school age who had typing instruction actually spent only an hour or two a week at the typewriter, yet at the end of the first year they out-performed the nontyping pupils in reading.
  - Ralph Haefner maintains that typing improves reading fluency in children of elementary-school age.
  - Rowe’s experimental subjects made dramatic gains in their control of both vocabulary and reading comprehension.
  - Katherine A. Seibert used electric typewriters in a summer program for first- and second-graders who were diagnosed as slow readers. The children who were not aware that they were in a ‘reading’ program, gained an average of .96 of a year in only eight weeks. The gain in reading skills was over three times larger than expected for these pupils (1978, pp. 171–78).
- **Keyboarding skills help students with learning disabilities.** Children who have difficulty handling a pen or pencil are at a disadvantage in school no matter what their intellectual and academic level. Using a keyboard to write can revolutionize the lives of these children (Penso, 1999). D. D. Campbell reports that children ages 7–10 with learning disabilities who learned to keyboard showed significant gains in reading achievement over the children with learning disabilities in the handwriting group (1973, pp. 155–168).

- **Students should begin keyboarding as soon as possible.** Teaching students keyboarding techniques should not be delayed. The National Business Education Association recommends keyboarding instruction in Level 1 (Grades K-6) (2001). The International Society for Technology in Education (ISTE) recommends that students use input devices, such as the mouse and keyboard, to successfully operate computers prior to second grade (2000). As Ernest Balajthy states:

Delaying keyboarding instruction may have negative consequences if students are using computers. Student use of the computer without touch-typing skills can lead to the development of bad habits that are hard to break. . . . Lack of keyboarding skills is the most often cited hindrance to effective use of word processing technology (Feb. 1988, pp. 40–43).

Mary Heller reinforces this idea:

Direct instruction in correct keyboarding techniques can begin as early as the kindergarten or first-grade year. Research indicates that children who develop their keyboarding skills early learn to compose more quickly at the computer than those left to “hunt and peck” (1995, p. 339).

## Writing

The research below summarizes the major benefits of students writing with a computer.

- **Writing and reading support one another.** “Research indicates that children’s achievements in reading and writing are generally quite strongly and positively related. Further, across evaluations of beginning reading programs, emphasis on writing activities is repeatedly shown to result in special gains in reading achievement” (Adams, 1990, p. 375).
- **Writing encourages development of the alphabetic principle.** The International Reading Association and the National Association for the Education of Young Children jointly state that “children acquire a working knowledge of the alphabetic system not only through reading but also through writing. [Their efforts to spell] encouraged them to think actively about letter-sound relations” (1998, pp. 4–5). Adams adds, “Writing is the principle vehicle for developing word analysis skills. . . . [The stories that a child writes] provide a major source of information about the student’s growing mastery of orthography” (1990, p. 420).

- **Word processors are motivational tools that simplify the writing process.** The *Handbook of Reading Research* reports that “in a series of word processing studies, Daiute (1983) discovered that children found word processing more fun than hand revision because it dispensed with recopying their writings. Children also persisted on tasks longer when using word processing” (Kamil, et al., 2000, p. 778). The *Handbook* adds, “Philosophically and practically, word processing fits with current educational thought and pedagogy. . . . Simply, there is no other alternative that will allow students and teacher to operate in composing, editing, revising, and publishing with so little compromise” (p. 773).