READING INSTRUCTION: EFFECTIVE STRATEGIES FROM THE NATIONAL READING PANEL

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Educators, parents, and even politicians agree that too many children have difficulty learning to read. National tests show that about 37% of all elementary school children and 60–70% of children who are African American, poor, or who have limited English proficiency perform below a basic level in reading.

Research Foundation

NICHD studies. In 2001, the U.S. Congress enacted the No Child Left Behind Act to improve reading instruction in grades K–3. This law mandates that, within 12 years, every child will be reading on grade level by the end of third grade. Part of the reason that the No Child Left Behind Act includes such an ambitious reading goal was a strong belief among policy makers that research has now provided good answers to what works in teaching children to read. Much of this research was coordinated by the National Institute of Child Health and Human Development (NICHD). Beginning in the mid 1960s, research was conducted at dozens of institutions in the United States and overseas, involving more than 35,000 children and using teams of educators, psychologists, physicians, and others. In 1998, the findings of these research teams on how children learn to read were presented in a National Research Council report, *Preventing Reading Difficulties in Young Children.*

National Reading Panel. In 1997 Congress established the National Reading Panel to review research in reading instruction. The Panel reviewed more than 100,000 studies and then analyzed those of the highest quality, comparing the effectiveness of various instructional practices. The resulting report of the National Reading Panel, Teaching Children to Read, provides parents and educators with evidence-based recommendations on how to teach basic reading skills to children.

The following sections of this handout summarize the Panel's recommendations for five areas of reading instruction: *phonemic awareness, phonics, fluency, vocabulary, and text comprehension.*

Instruction in Phonemic Awareness

One of the strongest research findings is that, in order for children to learn to read and spell, they must be taught skills in phonemic awareness. Phonemic awareness is the ability to identify, think about, and manipulate the individual sounds in spoken words. In short, children must understand that words are made up of discrete speech sounds, or *phonemes.*

Phonemic awareness should not be confused with phonological awareness, a broader term that includes such skills as manipulating syllables in words or rhyming. Phonemic awareness does not come naturally or easily. Children who enter first grade without good phonemic awareness have difficulty learning to decode words. Without direct instruction, approximately 25% of middle-class first graders and substantially more who come from weak literacy backgrounds do not attain phonemic awareness skills.

Instructional activities. In the classroom, effective phonemic awareness instruction might include such activities as:

- Phoneme isolation (What is the first sound in pan?)
- Phoneme identity (What sound is the same in pin, pal, and peg?)
- Phoneme segmentation (What are all the sounds in ball?)
- Phoneme deletion (Say clap without the /k/ sound.)
- Phoneme substitution (In the word bat, if you change the /b/ to /f/, what is the word?)

Guidelines for teachers. The National Reading Panel report provides important guidelines about phonemic awareness instruction for teachers:

- Teach phonemic awareness explicitly and systematically.
- Teach several types of phoneme manipulation.
- Teach the manipulation of phonemes while teaching the alphabetic principle.
- Organize instruction to allow children to benefit from teacher feedback and from listening to peers.
- Provide at least 20 hours of quality phonemic instruction over the course of a school year. Phonemic awareness instruction does not constitute a complete reading program, but can form the foundation for the other essential reading program components, such as phonics.

Instruction in Phonics

Despite years of controversy, there is now broad consensus that reading programs should include phonics instruction to teach children the relationship between sounds and letters. All beginning readers must learn the connections between approximately 40 sounds of spoken English and 26 letters of the alphabet. This understanding that written symbols represent the phonemes of spoken words is called the *alphabetic principle* and is critical for the development of accurate and rapid word reading skills.

Characteristics of effective phonics instruction. The National Reading Panel's report describes two important characteristics of effective phonics instruction: it must be *systematic* and it must be *explicit*. Systematic and explicit instruction has proven to be more effective than non-systematic phonics or no phonics instruction at all. Systematic instruction means that sound/spelling relationships are taught in a logical order—from simple ones to more complex ones—and according to the structure of the English language. Explicit phonics instruction isolates one linguistic concept at a time, a sound or a spelling pattern, and uses it as the organizing principle of a lesson.

Systematic and explicit instruction not only directly teaches letter-sound relationships, but also allows enough practice for students to apply their knowledge of phonics as they read words, sentences, and text. Phonics should also be taught early, preferably in kindergarten or first grade. Although 2 years of systematic, direct teaching of phonics is sufficient for most children, some children may need more.

Some reading programs may include phonics but are not particularly explicit and systematic. Nonsystematic programs of phonics instruction have several problems: (a) they do not teach sound-letter relationships in a prescribed sequence, (b) they often neglect vowel spelling patterns, (c) the teaching of letter-sound relationships is often incidental and implicit, and (d) they do not provide adequate practice materials for each phonic element. Often basal reading programs, literature-based programs, and sight-word programs do not teach phonics explicitly and systematically.

Benefits of systematic instruction. Systematic phonics instruction appears to benefit all children regardless of their background. Although some children may discover the alphabetic principle through home or preschool experiences, most children—especially those from non-English speaking families or from disadvantaged backgrounds—do need more systematic instruction in decoding skills. Systematic phonics instruction is also instrumental in *preventing* reading problems in children prone to learning disabilities. Dr. Reid Lyon, Director of the NICHD research program, in his testimony before Congress, said, "Classroom instruction that explicitly addresses the connections between letters and sounds within a literature-rich classroom environment can make a difference between reading failure and reading success" (Lyon, 1997). Research now supports teaching phonics as critical for reading success. Studies have shown that kindergarten and first grade children who receive systematic phonics instruction are better at reading and spelling words than children who do not receive systematic phonics instruction. In addition, systematic phonics instruction significantly improves children's reading comprehension. Researchers have shown that accurate and fluent decoding is a hallmark of skilled reading. Of course, instruction in phonics does not provide a complete reading program for beginning readers. Children need four additional components as well as exposure to good literature.

Instruction in Fluency

Skilled readers find reading effortless and read fluently. They recognize most words automatically and are able to focus on understanding what they read and connecting it to what they already know. When reading out loud, they read smoothly and with expression. Less fluent readers, however, must put most of their effort into recognizing individual words. They have few mental resources left over for understanding what they read or for reading orally with expression.

Fluency provides a critical link between single word decoding and reading comprehension but many students have poor fluency. A recent National Assessment of Educational Progress (NAEP) study showed that 44% of fourth graders were weak in fluency and that students with poor fluency also had lower scores on reading comprehension tests.

Fluency skills. Good fluency requires that a student have three skills: accurate decoding, automatic word recognition, and use of the rhythms of spoken language, including stress and intonation.

As discussed in the preceding section, effective reading programs teach accurate decoding using phonics instruction. However, research indicates that automatic word recognition, or *automaticity,* as it is known, requires repeated decoding of *every word.* In fact, students have to decode a word five to seven times for recognition of that word to become automatic.

Automaticity, however, is not sufficient for fluency. Students must be taught to read with appropriate expression. For example, they must learn to tell the difference between these three sentences: She's frightened. She's frightened! She's frightened?

Strategies to improve fluency. The National Reading Panel report reviewed two frequently used fluency building techniques. The Panel concluded that there was no evidence that independent silent reading in the classroom is effective in improving reading fluency. The report recommends that teachers encourage students to increase their independent reading at home but reserve valuable classroom time for techniques that provide more guidance and feedback from the teacher. Research studies show that the best approach for fluency instruction is repeated and monitored oral reading. Students who orally read *and reread* appropriate passages show improved word recognition speed and accuracy, along with improved fluency. However, they must receive guidance and feedback from the teacher. Here are some additional tips for helping students become fluent readers:

- Read aloud to students while modeling fluent reading, and then have the students reread the same text. Four times is usually sufficient.
- Use oral reading material that is at students' independent reading level for practicing fluency (material they can read with about 95% accuracy).
- Choral reading and partner reading can provide practice for pairs or small groups of students.
- Assess students' fluency with simple measures of speed and accuracy such as counting the number correctly read words per minute.
- Fluency instruction should be part of a basic reading program but also should be used with students needing remedial instruction.

Instruction in Vocabulary

Accurate and fluent decoding will not make students good readers if they do not understand the meaning of words they read. Vocabulary is an important part of learning to read, and it is essential to developing reading comprehension. Research has not yet identified the most effective method or combination of methods for teaching vocabulary, but there is agreement that vocabulary instruction should be a component of a comprehensive reading program. Current evidence suggests that, while most vocabulary is learned indirectly, some vocabulary must be taught directly.

Direct vocabulary instruction. Children learn most words *indirectly* through daily experiences with oral and written language. The three primary ways are: engagement in oral language, listening to adults read to them, and reading extensively on their own. However, *direct instruction* in vocabulary is important for contributing to students' reading vocabulary, particularly as readers encounter more complex and abstract concepts. Direct vocabulary instruction should involve two areas: specific word instruction and word learning strategies. The best strategies for direct vocabulary instruction include:

- Pre-teaching specific words before reading
- Repeated exposure to vocabulary in multiple contexts
- Active engagement with vocabulary; for example, students may create sentences with new words

Specific word instruction should target words that are important, useful, and difficult. Teachers should also be sensitive to the difficulty of learning various types of word knowledge. Four different kinds of word learning have been identified:

- Learning a new meaning for a known word
- Learning the meaning of a new word representing a known concept
- Learning the meaning of a new word representing an unknown concept
- Clarifying and enriching the meaning of a known word

Word learning strategies are needed because students cannot possibly learn all vocabulary through direct word instruction. Word-learning strategies include use of dictionaries and other reference guides, analysis of word parts, and using context clues.

Instruction in Comprehension

Comprehension strategies. Of course, the ultimate goal of reading instruction is to enable children to understand what they read. In-depth study of good readers reveals that they read with purpose and think actively as they read. Good readers engage in a complex process of activating previous experiences and knowledge, applying their knowledge of vocabulary and language, and using various reading strategies to make sense of text. The

following comprehension strategies are firmly supported by scientific research as improving comprehension:

- Comprehension monitoring (thinking about what you do and do not understand).
- Using graphic and semantic organizers (maps, webs, graphs, charts).
- Questioning and answering techniques.
- Generating questions about the text.
- Using story structure or content organization.
- Summarizing text.

Instruction to improve comprehension. The current science of reading also provides guidelines for how to teach these comprehension strategies. The most effective approaches are direct and explicit instruction that includes a direct explanation, modeling, guided practice and application; cooperative or collaborative learning; and instruction that emphasizes flexibility and combination strategies. Instruction in text comprehension should be incorporated from the earliest stages of reading instruction. However, questions remain as to which strategies are most effective for which age groups or whether the techniques apply to all types of texts.

Summary

The research program of the National Institute of Child Health and Human Development and the National Reading Panel Report have shown that good readers understand how print represents the sounds of our language, can apply phonics skills in a rapid and fluent manner, use a variety of comprehension strategies to gain meaning from text, and have sufficient vocabularies and other language skills to actively connect what they're reading to their background knowledge and experiences.

However, the same research has shown that poor readers typically enter kindergarten without adequate phonemic awareness or vocabularies; do not acquire adequate decoding skills, and this hindrance limits their ability to learn to read text in a fluent fashion; have slow and labored reading that impedes their comprehension, and they rely too much on guessing; exert so much effort that reading is not rewarding or enjoyable; and they do not read independently; do not practice, resulting in poor fluency and weak vocabularies; and do not catch up.

Reading programs based upon principles summarized in this handout are likely to prevent reading failure for most children. Research has shown that, "... for 85 to 90 percent of poor readers, prevention and early intervention programs that combine instruction in phoneme awareness, phonics, spelling, reading fluency, and reading comprehension strategies provided by well-trained teachers can increase reading skills to average reading levels" (Lyon, 1997).

Resources

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Website

Center for the Improvement of Early Reading Achievement (University of Michigan School of Education)—*www.ciera.org* (reading research archive, articles)

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