

Summary of the (U.S.) National Reading Panel Report
Teaching Children to Read

Prepared by the Division of Research and Policy, International Reading Association

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Background

Panel member selection:

In 1997, the U.S. Congress requested that the Director of the National Institute of Child Health and Human Development (NICHD), in consultation with the Secretary of Education, appoint a panel of experts to determine the effectiveness of various approaches to teaching reading. They selected 14 panel members from 300 applicants. No federal government employees, persons who had taken set stands on particular approaches to reading methods, or persons with financial or commercial ties to reading-material production were considered. The group included scientists engaged in reading research, psychologists, a pediatrician, a teacher, administrators, a principal, and a parent.

Studies reviewed:

The panel identified 100,000 reading research studies, and narrowed the selection by sorting for those with well-defined instructional procedures, those that were experimental in design, those that showed causality between practice and outcomes, and those including a large sample size. Qualitative research and studies that were descriptive, observational, or correlational were not chosen. However, the panel recommended that future reviews look at qualitative and descriptive research.

Public comments:

At five regional meetings, the panel elicited input from teachers, administrators, researchers, teacher educators, and parents. More than 400 people attended the hearings and offered direction to the panel.

Panel findings:

In April 2000, the NICHD released the report of the National Reading Panel, under the title *Teaching Children to Read* (see www.nichd.nih.gov/publications/pubskey.cfm?from=nrp). The panel determined that effective reading instruction includes teaching children to break apart and manipulate the sounds in words (phonemic awareness), teaching them that these sounds are represented by letters that can be blended together to form words (phonics), having them practice what they've learned by reading aloud with guidance and feedback (guided oral reading), and teaching them to apply strategies to guide and improve reading comprehension.

Chapter 1 of *Teaching Children to Read: Phonemic Awareness (PA) Skills*

- Understanding that spoken words are composed of tiny sound segments or phonemes

Skills studied (p. 10):

phoneme isolation (recognizing individual sounds in a word: /g/ in “go”);
phoneme identification (common sound in different words: /b/ in boy, bike, bell);
phoneme categorization (recognizing sounds in sequence: bus, bun, rug);
phoneme blending (listening to series of separate spoken sounds and blending them: /g/
/o/ = go);
phoneme segmentation (tapping out/counting the sounds in a word: /g/ /o/ = go, which is
two sounds);
phoneme deletion (recognizing what word remains when a specified phoneme is deleted:
smile is “mile” without the /s/).

Designation of students studied (p. 14):

children at risk (below 2nd grade with low PA or reading ability);
disabled readers (mostly 2nd-6th graders who read below grade level despite average
cognitive ability); and
children progressing normally (not identified as having reading problems).

PA Findings (based on 96 treatment-control group comparisons)

Panel conclusion (p. 5):

PA can be taught, and it is effective in improving reading with all types of children under
a variety of teaching conditions.

Group size (pp. 22, 42, 44):

Teaching small groups produces better results than teaching individuals or who classes.

Best PA methods (p. 41):

PA taught with letters is more effective than PA taught without letters. Letters help
children grasp and manipulate sounds that are ephemeral. Letters also help children
transfer their PA skills to reading and writing tasks.

Teaching one or two skills was effective and both were more effective than teaching three
skills.

Length of sessions (pp. 22, 31, 42):

Teaching sessions of about 30 minutes and a total of no more than about 20 hours
appeared to be most effective. However, the panel cautions against declaring how long
instruction needs to last based on these observations, and recommends tailoring training
time to student learning by assessing who has and who has not acquired the skills being
taught as training proceeds.

Who teaches (p. 19):

Classroom teachers, researchers, and computers delivered PA instruction effectively.

Computers/parents (pp. 44-45):

Use of computers yielded significant effects for teaching PA and its transfer to reading. However, effects were smaller than those produced by teachers or researchers. More research is needed on computer use. The panel also recommends more research on parents as PA trainers.

Training teachers to use PA (p. 44):

With training, teachers can and do teach PA effectively. The panel raised questions that researchers need to answer regarding specifics of teacher training.

Dialects (p. 31):

Teachers implementing PA instruction need to be aware of regional dialects and their effects on phonemes. E.g., vowels in *marry*, *Mary*, and *merry* are pronounced identically in some areas of the West but differently in some areas of the East.

English as a second language (p. 32):

Children's minds are programmed to categorize phonemes in their first language, which may conflict with English phonemes. E.g., Spanish-speaking children may select *ch* when they should use *sh*, because in Spanish these two-letter combinations produce the same phoneme.

Who Benefits**Age of most benefit (pp. 24, 40):**

Preschoolers and kindergartners benefited more than first to sixth graders in acquiring phonological awareness. Kindergartners benefited more in reading; the other groups did not differ from one another.

At-risk readers (pp. 18, 23, 33, 41):

PA skills resulted in the biggest boost in reading for at-risk students. PA instruction had positive effects for all learners and transferred to reading across all conditions and characteristics studied. At-risk readers gained as much from PA training as normally-developing readers.

Reading-disabled students (pp. 23, 41):

Although all students gained from PA, it appears harder to improve PA in reading-disabled students — perhaps because disabled readers were older and relatively more advanced in PA skills, with less room for gains than the younger beginners. Also, disabled readers were taught more advanced forms of PA than were younger students.

Helping disabled readers (pp. 35-36):

The panel found some programs to be highly effective in teaching decoding skills to disabled readers. In one, children ages 7-12 were taught to segment and blend phonemes first in speech, and then using letters. Children progressed from a set of seven consonants and two vowels to using additional letters, consonant clusters, and two-syllable words.

Normally progressing students (pp. 19, 23-24):

PA training improves spelling and boosts reading skills.

Which Skills Improved

Reading-PA connection (pp. 33, 41):

Teaching children PA skills of segmenting and blending along with letter identification and how to apply PA skills in reading words produces better outcomes on reading comprehension as well as word and pseudoword reading.

Spelling (pp. 24-26, 30, 40-41):

Phonemic awareness training improved spelling more than alternative forms of training, except outcomes were insignificant for 2nd- to 6th-grade disabled readers, perhaps due to their processing difficulties. Improvements in reading and spelling lasted beyond the immediate training period.

Adding PA instruction to a whole language program enhanced students' decoding and spelling skills but not their other reading skills.

Chapter 2 of *Teaching Children to Read: Phonics Skills*

- The process of linking sounds to letter symbols and combining them to make words

Skills studied (pp. 92, 110):

decoding regularly spelled real words;
reading novel words in the form of pseudowords;
reading miscellaneous words, some of which were irregularly spelled;
spelling words;
comprehending text read silently or orally;
reading text accurately aloud.

Designation of students studied (pp. 90, 106):

normally developing (not identified as having reading problems);
children at risk (below 2nd grade with low PA or reading ability);
disabled readers (2nd-6th graders who read below grade level despite average or better intelligence); and
low-achieving readers (older children with poor reading progress, varying in intelligence, at least some of whom achieved poorly in other academic areas).

Systematic phonics definition (pp. 89, 99, 102, 106-107):

This report examined research on **systematic phonics** instruction. Systematic phonics is teaching a planned sequence of phonics elements, rather than highlighting elements as they happen to appear in a text. Approaches to systematic phonics instruction include

- synthetic phonics (convert letters into phonemes, and then blend the phonemes to form words);
- analytic phonics (analyze letter-sound relations once the word is identified);
- phonics through spelling (transform sounds into letters to write words);
- phonics in context (use sound-letter correspondences along with context cues to identify unfamiliar words); and
- analogy phonics (use parts of already known written words to identify new words).

Phonics Skills Findings (based on 66 treatment-control group comparisons)

Panel conclusion (pp. 93, 103-104, 113, 118, 132):

The panel concluded that systematic phonics instruction makes a bigger contribution to children's growth in reading than nonsystematic alternative programs or no phonics. Effects last beyond the period of training. The most effective types of instruction are

- synthetic phonics, which teaches students to convert letters (graphemes) into sounds (phonemes) and then to blend the sounds to form recognizable words;

- larger unit phonics which emphasizes the analysis and blending of larger subparts of words (onsets, rimes, phonograms, spelling patterns) as well as phonemes;
- miscellaneous phonics programs that teach phonics systematically but do this in other ways not covered by the synthetic or larger unit categories.

Group size (pp. 93, 120, 132):

Systematic phonics instruction is effective when taught through tutoring, small groups, or whole classes.

Duration of teaching (pp. 118, 126-127):

The findings suggest that when phonics instruction is taught to children at the beginning of learning to read, and continued for two to three years, the children experience significantly greater growth in reading at the end of training than do children who receive phonics instruction for only one year after first grade.

One effective phonics program that the panel looked at began with kindergartners and lasted for 2.5 years. It began with PA training, included regular teacher in-service professional development, and regular assessments to enable flexible instruction.

Control groups (pp. 90, 95, 102, 121, 124, 133-134):

In studies that investigated phonics effectiveness in treatment groups where phonics was taught as compared to control groups following other approaches, systematic phonics produced better results than programs that did not provide systematic phonics instruction. The control groups used approaches including basals (focusing on whole-word activities with limited attention to letters and sounds and letter-blending skills), regular curriculum, whole language (meaning-based reading and writing with phonics taught incidentally), whole word (50-100 reading word vocabulary built first, then lessons on alphabetic system), and miscellaneous programs.

As for the weaker effect of phonics on older readers, the panel noted that it is possible that in many of the control groups, more phonics instruction was actually taking place, and they were thus comparing “more” systematic phonics instruction to “less” systematic phonics instruction.

Motivational factors (p. 125):

The motivational value of associating letters with interesting characters or hand motions and incorporating this into activities and games that are fun is important for promoting young children’s learning.

Training teachers to use phonics instruction (pp. 123, 135-136):

Teachers should note that early instruction in systematic phonics is especially beneficial to growth in reading. Phonics is not an end in itself, but should be taught with the goal of applying phonics knowledge in daily reading and writing. Training for teachers will enable them to evaluate various programs and to match those programs to the needs of their students.

Who Benefits

Age that benefits most (pp. 93, 113, 115, 118, 133):

The biggest impact on reading growth occurs when phonics instruction begins before children begin to learn to read independently. Thus, phonics instruction should begin in kindergarten or first grade. When taught in kindergarten, it must be appropriately designed and must begin with foundational knowledge involving letters and phonemic awareness.

At-risk beginning readers (below 2nd grade with low reading ability; pp. 94, 110, 117, 133):

Systematic phonics is significantly more effective than non-phonics in preventing reading difficulties among at-risk readers.

Disabled readers (2nd to 6th graders with average IQs but poor reading; pp. 94, 106, 110, 114, 116, 133):

Systematic phonics is more effective than non-phonics in remediating disabled readers and helping these students comprehend text more successfully. However, when the 17 reading-disabled comparisons were analyzed separately, there was a small positive effect. The panel concluded that systematic phonics is more effective than non-phonics in remediating disabled readers and helping these students comprehend text more successfully.

Socioeconomic levels (pp. 95, 118, 133):

The panel found systematic phonics instruction was helpful to children at all socioeconomic levels.

No Demonstrated Benefits

Older, normally progressing readers (pp. 115-116):

The impact of phonics instruction was less than for the younger readers, but data were insufficient to draw any conclusions. (The panel reviewed only seven comparisons, four of which used a program designed for disabled readers.)

Low-achieving readers (2nd to 6th graders with reading difficulties and possibly other cognitive difficulties that explained their low achievement; pp. 94, 106, 110, 114, 117, 133):

There was low impact of systematic phonics on low achievers' growth in reading, but the panel drew no firm conclusions from its review of these studies because they numbered only eight and all were case studies.

Which Skills Improved

Decoding and word reading (pp. 94, 113, 116, 133):

Systematic phonics was most effective in improving ability to decode regularly spelled

words, and was also effective in helping with decoding of irregularly spelled words for kindergartners and first graders, as well as for older struggling readers.

Comprehension (pp. 94, 106-107, 113, 115-116, 123, 133):

These skills were boosted substantially for younger students (K-1, but not the older group (2-6) in general. Phonics appears to help older poor readers improve decoding but had a weak effect on their ability to apply these skills to reading text and spelling words.

Oral reading (p. 115):

Among beginning readers phonics skills had a larger impact on reading comprehension than on oral reading. (This may have been because the comprehension tests given to this younger group generally favored short passages of phonetically regular words. Oral reading passages were longer.)

Spelling (pp. 95, 115, 116, 133):

Much growth was seen in spelling for kindergartners and 1st graders, but not among those in 2nd grade and above.

Additional studies needed on classroom applications (pp. 97-98, 117, 135, 137-138):

Teachers must keep the end goal in mind: the purpose of learning letter sounds is to apply these skills in daily reading and writing. The panel emphasizes that phonics should be integrated with other reading instruction to create a balanced reading program.

In relation to older readers, it is likely that phonics programs that emphasize decoding exclusively and ignore the other processes involved in learning to read will not succeed in making every child a skilled reader.

Topics requiring more study include optimal length of programs and optimal number of years; teachers' depth of phonics knowledge; use of scripted programs vs. assessment of individual needs; flexible instruction groups and phonics programs; teacher and student motivational factors; phonics program ingredients that yield the best results; contribution of decodable books to phonics effectiveness; effectiveness of phonics beyond 2nd grade; best phonics methods for poor readers above 1st grade; phonics instruction and addressing needs of older students with bad reading habits; and systematic instruction in fluency and automaticity for older students' phonics instruction.

Chapter 3 of *Teaching Children to Read*: Fluency

- Reading with speed, accuracy, and proper expression without conscious attention; performing multiple reading tasks (e.g., word recognition and comprehension) at the same time

Skills studied:

guided repeated oral reading, including repeated reading, neurological impress, paired reading, shared reading, and assisted reading; independent silent reading, including sustained silent reading, Drop Everything and Read, Accelerated Reader, and various incentive programs.

Designation of students:

All ability levels, kindergarten through grade 12

Guided oral reading's effect on fluency (pp. 2, 18):

Although many studies were located, only 14 met the panel's criteria for inclusion. Twelve additional studies were also examined that considered the impact of guided oral reading on one to three students, and another 12 studies evaluated the practicality of various guided oral reading procedures.

Panel conclusion (pp. 3-5, 20):

Guided oral reading with feedback has a significant positive impact on word recognition, reading fluency, and comprehension. Guided oral reading is more effective than silent reading. The greatest impact was on reading accuracy; next was on reading fluency. Still impressive, but with less impact, was on reading comprehension. There is a close relationship between fluency and comprehension.

Teachers should assess fluency regularly.

Repeated reading and other procedures that have students read passages orally multiple times, while receiving guidance or feedback from peers, parents, or teachers, are effective in improving a variety of reading skills.

Peers, parents, or teachers were all about equally effective in their ability to provide effective feedback on oral reading. However, the studies that examined the lowest achieving readers all used teachers as the reading partner. Children who are struggling the most might benefit from more skilled guidance.

Age that benefits most (p. 17):

Attention to fluency is appropriate for all ages. There is a clear impact on the reading ability of nonimpaired readers through at least grade four, as well as on students with various kinds of reading problems throughout high school.

Effect on poor readers and good readers (p. 17):

Effects are similar for both poor and good readers.

Which Skills Improved

Decoding and word reading (p. 20):

Guiding oral reading practice exerted its greatest effect on children's ability to recognize or decode words. Words seem to be a big part of the learning that occurs during repeated reading.

Guided oral reading (p. 20):

Fluency allows children to read text more quickly and more accurately when they are asked to read aloud. Guided oral reading leads to improvement with the texts that children practice with, and skills transfer to other texts as well.

Comprehension (p. 20):

Guided oral reading improved children's ability to understand what they read. Students do better at answering questions about the stories and articles that they read, to a degree sufficient to improve standardized test performance even when texts on assessments are read silently.

Additional Studies Needed (pp. 24, 28)

Longitudinal studies are needed to examine the impact of guided oral reading on different levels of students over longer periods.

None of the studies examined extended for more than one school year. How much instruction is needed and what materials lead to the biggest gains?

The panel was unable to determine if silent reading improves fluency, as research on this is insufficient. Studies do show that the best readers read silently more frequently than do poor readers, but this may simply be because they are better at it.

Chapter 4 of *Teaching Children to Read: Comprehension*

Part I: Vocabulary Instruction

The panel found few research studies that met all its criteria for inclusion. It did a detailed review of the evidence presented in 47 studies.

Vocabulary teaching methods (pp. 1, 3, 17-18):

Explicit instruction (definitions instruction including preteaching and analysis of root words), implicit instruction (exposure to words during reading), multimedia methods (pictures, hypertext, American Sign Language), practicing to increase capacity, association (connecting what one knows to the new word).

Age, ability, and vocabulary instruction (p. 18):

As students begin to read content material, they need more instruction in vocabulary that is specific to the new material.

Computer instruction (p. 4, 19, 26):

Increases vocabulary better than traditional instruction.

Effect on comprehension (pp. 4, 20):

Vocabulary instruction leads to gains in comprehension. Preteaching of vocabulary words and repeated exposure in different contexts were found to improve vocabulary and comprehension.

Vocabulary assessments (pp. 26-27):

No single standard of vocabulary assessment emerged from the studies reviewed. However the panel concluded that appropriate conclusions about instruction are derived when the assessments match the instruction. This will provide better information about the specific learning of the students related directly to that instruction.

Effective vocabulary instruction strategies: Recommendations for teachers (pp. 4-6, 20-23, 25-27)

The panel is reluctant to name a single method of vocabulary instruction that is most effective because the studies seemed to indicate that using a variety of methods leads to increased vocabulary learning. The following concepts/methods were found to be effective:

- **Keyword method:** Children learn new words by learning a keyword “word clue” for each vocabulary word. Findings were positive. However, some studies showed gains fading after one week, and low-ability students had more difficulty with keywords than did high-ability students.
- **Incidental learning:** Most vocabulary is learned through reading or listening to others read. Some studies showed that adverbs, verbs, and adjectives that create

vivid images were most memorable. Active, student-initiated analytic talk and participation also helped motivate students and increase vocabulary learning.

- **Repeated exposure:** Using new vocabulary across the curriculum increases learning gains. Children who learned American Sign Language did better than control subjects on the Peabody Picture Vocabulary Test.
- **Preteaching of vocabulary** increases both vocabulary and comprehension gains.
- **Restructuring reading materials**, such as substituting an easier synonym for a harder word, yielded significant vocabulary gains. Making sure children not only understand the vocabulary but also the task (for instance, by restructuring through use of group learning or revised learning materials) can also lead to increased vocabulary learning. This is especially effective for low-achieving or at-risk students.
- **Context method:** Children use clues in the text to help decipher new words. Several studies indicate that a blend of direct-definition instruction and vocabulary learning through context clues is more effective than one method alone. Another group of studies, however, found that one method sometimes produces the highest gains.

Further research (pp. 4-5, 27, 96-97, 115):

Further research is needed to determine the optimal use of multimedia learning, computer use in vocabulary instruction, the vocabulary instructional needs of different age and ability levels, and the best professional development to help teachers become proficient in vocabulary instruction.

There is a high correlation between vocabulary instruction and reading comprehension. More experimental studies are needed in this promising area because it bridges early reading skill development and later comprehension training.

Part II: Text Comprehension

- Text comprehension assists in recall of information by encompassing a variety of techniques and systematic strategies such as question generation, question answering, and summarizing information. The teacher demonstrates models or guides the reader until the reader can use these skills without the assistance of the teacher. The panel reviewed 203 studies in this area.

Panel conclusion (pp. 40, 47-48, 52):

When readers are given cognitive-strategies instruction, they make significant gains on measures of reading comprehension over students trained with conventional instruction. Teaching a variety of reading comprehension strategies in natural settings and content areas leads to increased learning of the strategies, to transfer of learning, to increased memory and understanding of new passages, and, in some cases, to general improvements in comprehension. Students show noticeable improvement on standardized tests. More intensive instruction and modeling are more successful in improving reading and standardized test scores.

The panel is concerned that when comprehension skill instruction is present, teachers appear to be “mentioning” a skill to students and “assigning” it to them rather than employing the effective instruction, modeling, and transactional practices that research supports.

Effects of strategy instruction (p. 48):

When conscientious, diligent, and highly professional teachers apply strategy instruction in the classroom, even if imperfectly, their students improve in reading comprehension.

Most effective comprehension strategies (pp. 5-6, 42-47, 69-72, 75, 80, 82-83, 87-89, 91-93, 100-101, 103, 107, 110-113):

The panel identified 16 distinct areas of instruction; 8 were deemed most effective.

- **Comprehension monitoring:** Students learn to be aware of their understanding of the text and to use specific strategies when needed. Comprehension monitoring is “thinking about thinking.” Comprehension monitoring instruction has positive effects on standardized reading comprehension test performance.
- **Cooperative learning:** Students work together to learn comprehension strategies. This leads to an increase in the learning of the strategies, promotes intellectual discussion, and increases reading comprehension including on standardized test performance.
- **Graphic organizers:** Students write or draw meanings and relationships of underlying ideas. Main effect appears to be in the improvement of the readers’ memory for the content that has been read. Improvement is also found in social studies and science content areas.
- **Story structure:** Students ask and answer who, what, when, where, why, and how questions. They map timelines, characters, and story events. Success is more frequent with poor or below-average readers; good readers do not seem to need this kind of instruction, although there are positive results for all readers.
- **Question answering:** Teachers pose questions and guide students to correct answers, enabling them to learn more from the text. Evidence shows improvement in grades 3 through 8, although the effects were small.
- **Question generating:** Students ask themselves what, where, when, why, what will happen, how, and who questions.
- **Summarization:** Students identify and write the main ideas of a story. Studies were mostly at grades 5-6, because summarization often presupposes writing as well as reading skill. Readers improved on the quality of text summaries, identifying the main idea, and leaving out irrelevant detail. They improved in including ideas related to the main idea, generalizing, and removing redundancy. Instruction in summarizing improves recall.
- **Multiple strategies** (a blend of individual strategies used flexibly and in natural contexts): The teacher models an approach by showing how she or he would try to understand the text, using combinations of strategies. Evidence shows that actively involved, motivated readers read more text as a result of multiple strategy instruction. The panel found that in studies involving even a few hours of

preparation, instructors taught students who were poor readers but adequate decoders to apply various strategies to expository texts in reading groups, with a teacher demonstrating, guiding, modeling, and scaffolding the strategies. Even limited use of these strategies produced noticeable improvement in their use by students, although with only modest improvement on standardized test scores.

Recommendations for teachers (pp. 6, 94-95, 114):

These strategies are teachable and do improve children's comprehension and gains on comprehension tests.

Research shows that trained teachers, teaching these comprehension strategies in combination, with flexibility, and in natural settings, do improve student reading comprehension.

Some studies showed that teaching comprehension in content areas benefits readers in their social studies achievement.

Further research (pp. 6-7, 42, 52, 94, 114):

The panel found only four appropriate studies on teacher preparation for teaching comprehension strategies. The panel believes that this is an area ripe for more research.

More research is needed on teaching comprehension in the content areas, as this looks promising. Which strategies in what combination are best for various grade levels and ability levels? What are the most effective ways to train teachers, both preservice and inservice?

Part III: Teacher Preparation

- Interest in this topic is rather new, as evidenced by the few studies the panel found (four, dealing with normal readers) that met its criteria.

Direct explanation (DE; p. 122):

Teachers explain specific strategies and model them for students. Instead of teaching individual strategies, teachers help students view reading as a problem-solving task and help them think strategically to solve comprehension problems. For instance, a teacher would help a student to find the main idea of a story by casting it as a problem-solving task and reasoning about it strategically.

Transactional strategy instruction (TSI; p. 123):

This approach is similar to DE, with the difference being that the teacher acts as a facilitator. The students collaborate to interpret text and discuss explicit strategies used in comprehending text.

Panel findings (pp. 123-126):

Results of all the studies show clearly that teachers can learn to teach comprehension

strategies effectively and that the use of these strategies improves students' reading comprehension. With TSI, significantly more students of trained teachers (80%) made gains on a reading comprehension subtest than did students of other teachers (50%). This suggests that preparation given the teachers was effective in improving reading comprehension performance. The amount of gain was not reported.

In a TSI program called SAIL, teachers learned to use direct explanation, teacher modeling, coaching, and scaffolding practices, with an emphasis on collaborative discussion among teacher and students. Students did better on literal recall of story content, and their recall was more interpretive. They used more strategies on their own on think-aloud tasks, and showed overall greater improvement than the students of the other teachers, outperforming the control groups at posttest.

In general, the studies indicate that instructional methods that generate high levels of student involvement and engagement during reading can have positive effects on reading comprehension. Teaching comprehension strategies effectively involves substantial and intensive teacher preparation. Intensive instruction of teachers can prepare them to teach reading comprehension strategically. Such teaching can lead students to greater awareness of what it means to be a strategic reader, and to the goal of improved comprehension.

Teachers help students by (p. 125):

- Explaining fully what it is they are teaching—what to do, why, how, and when
- Modeling their own thinking processes
- Encouraging students to ask questions and discuss possible answers among themselves
- Keeping students engaged in their reading via providing tasks that demand active involvement.

The appropriate comprehension assessment (p. 125):

- Is of the students' reading achievement and
- Shows how interested students are in reading
- Indicates how satisfied the teachers are with their instructional methods

Need for further research (p. 126):

Further research in this area could focus on effective components of teacher preparation; whether comprehension instruction can be successfully incorporated into content instruction; and how best to assess strategy instruction—through reading achievement assessments, or subject matter achievement?

Chapter 5 of *Teaching Children to Read: Teacher Education and Reading Instruction*

Preservice studies (p. 5):

The focus of the 11 reviewed preservice studies was almost entirely on changing teacher behavior, with little focus on the outcomes of students who are eventually instructed by those teachers. Preparation of teachers for comprehension instruction at the preservice level requires extended training with ongoing support.

Inservice studies (pp. 6, 12):

For the 21 inservice studies reviewed, the ultimate test of success was whether students benefit from instruction delivered by teachers as a result of that intervention. One clear trend of inservice instruction was that where teacher outcomes showed significant improvement, so did student achievement. One can conclude that inservice professional development does lead to improved teacher knowledge and practice, and improved student achievement.

Positive outcomes of teacher education and reading instruction (p. 14):

The panel found that improvement in teaching leads directly to higher achievement on the part of students. Most of the research that measured attitudes demonstrated that teacher attitudes did change as a result of the interventions. Teacher practices improved as a result of teacher education. Student achievement outcomes can be improved as a result of teacher development. However, sustainability of the student improvement was not addressed.

Technology and teacher education (p. 16):

The panel found seven studies that used various forms of technology to improve teacher education. Computers have made video modeling and simulation more available.

Need for further research (pp. 2, 13):

Little research exists in this area. More needs to be done to pinpoint what makes training most effective, but research indicates that training both new and established teachers yields higher student achievement. The panel found a need for more interactions between teachers and researchers. The panel found no research in the sample that addresses the question of the relationship between the development of standards and teacher education or professional development.

Chapter 6 of *Teaching Children to Read: Computer Technology and Reading Instruction*

Need for more research (pp. 2, 9):

More research needs to be done in this relatively new area. From the 21 studies reviewed, however, it appears that teachers can use computers to successfully deliver a variety of types of reading instruction.

Areas showing initial positive effects (p. 2):

Since reading instruction is most effective when combined with writing instruction, word processing software can be helpful. Also, hypertext (highlighted text that links to definitions or related text) may be useful. All studies in the analysis reported positive results.

Motivation (p. 7):

Reading instruction can make good use of the motivational aspects of computers and software.

Additional Resources

Find publications from the National Reading Panel at the website of the National Institutes of Health: www.nichd.nih.gov/publications/pubskey.cfm?from=nrp

Visit IRA's website at www.reading.org to find these resources on the work of the National Reading Panel and on specific topics covered in the panel's report:

- *Evidence-Based Reading Instruction: Putting the National Reading Panel Report Into Practice*, a collection of readings from *The Reading Teacher*
- *What Is Evidence-Based Reading Instruction?* (position statement)
- "The National Reading Panel: Using Research to Create More Literate Students," by Timothy Shanahan (in *Reading Online*)
- "The National Reading Panel Report" [essay book review], by James W. Cunningham (in *Reading Research Quarterly*)

- Focus on Beginning Readers
- *Phonemic Awareness and the Teaching of Reading* (position statement)
- *The Role of Phonics in Reading Instruction* (position statement)
- "Phonemic Awareness Instruction Helps Children Learn to Read: Evidence from the National Reading Panel's Meta-Analysis," by Linnea C. Ehri et al. (in *Reading Research Quarterly*)
- "Oral Reading in the School Literacy Curriculum" [Theory and Research Into Practice], by Timothy V. Rasinski and James V. Hoffman (in *Reading Research Quarterly*)
- Focus on Reading Comprehension
- Focus on Teacher Education
- *Prepared to Make a Difference* (report of the National Commission on Excellence in Elementary Teacher Preparation for Reading Instruction)
- *Standards for Reading Professionals*
- Focus on Technology
- *Integrating Literacy and Technology in the Curriculum* (position statement)

The National Reading Panel: Five Components of Reading Instruction Frequently Asked Questions

Phonemic Awareness

What is a phoneme?

A phoneme is the smallest unit of sound in a word. For example, the word *cat* is made up of three phonemes (or three sounds): /c/ /a/ and /t/. The word *fish* is also made up of three phonemes (or three sounds) even though *fish* has four letters: /f/ /i/ /sh/.

Test your phoneme knowledge: How many phonemes are in the word *school*? How many phonemes are in the word *family*?

What is phonemic awareness?

Phonemic awareness is the *knowledge* that words are made up of a combination of individual sounds. For example, the word *cat* is made up of three sounds (phonemes) /c/ /a/ and /t/. When these three sounds are combined fluidly, they make up the word *cat*. If a child knows that *cat*, *car*, and *caboose* all have the same sound at the beginning of the word, she has phonemic awareness. In other words, she is aware that the /c/ sound (phoneme) begins each of those three words.

Phonemic awareness is more than recognizing sounds. It also includes the ability to hold on to those sounds, blend them successfully into words, and take them apart again. For example, in addition to the knowledge that the word *cat* has three separate sounds, phonemic awareness is the ability to blend these three sounds together to form the word *cat* and, when asked, to identify and separate the sounds within the word.

Do all children need instruction in phonemic awareness?

Some children have a good sense of phonemic awareness, but to differing degrees. It is important to determine the child's level before beginning instruction. While all reading programs should devote some time to phonemic instruction, phonemic awareness is usually acquired naturally through exposure to print. The NRP found that during the kindergarten year, 18 hours total of phonemic awareness instruction — just 30 minutes a week, six minutes a day — provided maximum advantage.

Phonics

What is phonics?

Phonics is the relationship between a specific letter and its sound, *only* as it relates to the written word. Phonics is used, for example, when a reader comes across an unknown word. With knowledge of phonics, he can try to read the word by focusing on the specific sound of each letter or combination of letters. For example, if a child does not recognize the word *chant*, he might break the word apart into pieces, such as /ch/ /a/ /n/ /t/ (or /ch/ /a/ /nt/, or /ch/ /ant/), assigning an appropriate sound to each separate letter or combination of letters. Then, the child combines those sounds to create the word *chant*.

Phonics is also used in writing, or encoding text. For instance, if a child is trying to spell *smart*, she might begin with the /s/ sound and write *s*. Then, she goes to the next sound /m/ and writes *m*, and so on. An early phonics learner often achieves a close approximation of correct spelling rather than complete accuracy. For example, she may attempt to spell the word *smart* using the method above but end up with *smrt*, simply because she only heard the dominant /r/ sound in the /ar/ sound-letter combination.

What is phonological awareness?

Phonological awareness is the knowledge that there are patterns within words that can aid in both reading and writing. For example, those who have good phonological awareness can use rhyme, beginning and ending sounds, specific phonemes, etc. to read and write words.

Does learning phonics inhibit reading comprehension?

No. If a child learns to identify the relationship between the sounds of our language and letters, he will have an easier time identifying words, leading to improved reading comprehension. Failure to master phonics is the number one reason that children have difficulty learning to read.

However, phonics instruction does have limitations, especially since English does not have a pure phonetic base. The most obvious example of this is sounding out the words *cough*, *though*, *tough*, and *through*. A successful reading program should include both explicit phonics instruction and comprehension instruction. One without the other can delay or impede success in learning how to read.

How important is phonics instruction?

According to the NRP, systematic phonics instruction is only one component of the reading process — a means to an end. Children need to be able to blend sounds together to decode words, and they need to break spoken words into their basic sounds in order to write them. However, phonics should never become the overriding component in any reading program.

Fluency

What is fluency?

Fluency is the ability to read text accurately and smoothly. When fluent readers read aloud, their expression, intonation, and pacing sound natural — much like speaking. This does not mean that fluent readers never make mistakes. Fluency develops from reading practice. The same reader may read a familiar text fluently and a new, more challenging text less fluently.

Why is fluency important?

Since fluency depends on higher word recognition skills, it helps children move from decoding words to sight-reading. This means that less energy is spent on deciphering each word and more is spent on comprehending what is read. If children are struggling to decode individual words, they cannot concentrate on other strategies that support their overall understanding of what they read.

How does fluency increase?

Practice, practice, practice. Repeated oral reading is the best way for children to improve their fluency. This can include re-reading a familiar text several times, listening to models of fluent reading, or engaging in choral, or unison reading with a big book. Choose books that children can read with a high degree of success. If the book is too difficult, children will be bogged down with vocabulary and comprehension questions and their fluency will be hindered.

Vocabulary

What role does vocabulary play in learning to read?

When children learn to read, they begin to understand that the words on the page correspond to the words they encounter every day in spoken English. That's why it's much easier for children to make sense of written words that are already part of their oral language. While we don't have to know every word on the page to understand what we are reading, too many new or difficult words make comprehension impossible. As children's reading level improves, so does the number of words they need to know.

How do children learn new words?

Children increase their vocabulary through both direct and indirect instruction. Children continually learn new words indirectly through listening and speaking to the people around them, being read to by others, and reading on their own. Sometimes children need to be taught new words explicitly, especially when they are crucial to their understanding of a story or concept. Study in content areas, such as science and social studies, adds to a child's vocabulary development.

Text Comprehension

What is text comprehension?

Text comprehension is the interaction that happens between reader and text. More than merely decoding words on a page, comprehension is the intentional thinking process that occurs as we read — it's what reading is all about!

What strategies support comprehension?

Good readers are purposeful and active. They use a wide variety of strategies, often simultaneously, to create meaning from text. Some of the most important are:

- *Monitoring comprehension:* Successful readers know when they understand a passage and when they don't. When they don't understand, they know to pause and utilize strategies to improve their understanding.
- *Using prior knowledge:* Thinking about what is already known about the subject helps readers make connections between the story and their knowledge.
- *Making predictions:* Good readers often make predictions as they read through a story, using both the knowledge they bring to a text as well as what they can derive from the text.
- *Questioning:* When children ask questions about what they read and subsequently search for answers, they are interacting with the text to construct meaning. Good questions are based on a child's knowledge base and what further information she desires.
- *Recognizing story structure:* Children will understand a story better if they understand how it is organized (i.e., setting, plot, characters, and themes).
- *Summarizing:* When they summarize a story, readers determine the main idea and important information and use their own words to demonstrate a real understanding of the text.

When does comprehension instruction begin?

Since the ultimate goal of reading is to interact with the text, comprehension should be emphasized from the very beginning, not only after a child has mastered decoding skills. For example, reading aloud provides an opportunity for children to hear a story and respond to the content — the characters, their feelings and motivations, and the setting, and to relate it to their own experiences. Children begin from an early point to understand that comprehension is the point of reading.

Other Questions

Is there a sequence to teaching the five components?

No. Reading or learning how to read is a combination of all the skills mentioned in the report. The interconnectedness of each of the five components makes it impossible to teach them in isolation or in a particular order. It is more important to use the individual child's knowledge and stage of development as a starting point for instruction. However, since there is a constant give and take among the components, one will sometimes be emphasized over another.

Is it still important for children to read and discuss excellent literature?

Absolutely. The NRP report states that "quality literature helps students to build a sense of story and to develop vocabulary and comprehension." Tutoring activities that focus on comprehension as their ultimate goal lead to increased student interest and motivation.

Discussions based on excellent literature do two things: (1) allow for a more interesting/relevant discussion; and, (2) deepen a child's basic comprehension. By engaging in a discussion around a text, the reader is exposed to multiple views of interpretation and is forced to create a deeper personal connection with the text.

What role does writing play in a literacy program?

Writing is an important part of the literacy process. As children discover writing as a form of communication, they will begin to express themselves to the best of their ability. At first this may be scribbles, which then become letters, which eventually resemble more and more the accurate symbols for the sounds represented. This process allows children to explore the spelling system of our language.

Reading and writing have a reciprocal relationship — one is used to learn and enrich the other and vice versa. As a writer, the reader has a more intimate knowledge of the writing process, allowing her to have a greater connection to another author's text.

Writing also supports reading comprehension and recall. When a student writes about something he has read, he must take time to reflect and organize his thoughts. The literature children read influences their writing. A child will use his writing as a place to try out styles, language, new words and even spellings he has come across in reading. To be literate requires proficiency in both reading and writing.

Can reading sub-skills be taught in isolation and then transferred to authentic text to improve comprehension?

In an ideal world, the answer would be yes. Unfortunately (or fortunately) that is not the case. Remember that each sub-skill really relies on other sub-skills. Reading is a combination of many sub-skills combined to achieve the common goal of comprehension. Teaching reading sub-skills in an authentic setting ensures that there is never a moment when comprehension is not a factor.

What is authentic text?

Authentic texts are texts that one might encounter in a typical reading situation, such as a book, magazine article, or newspaper. In good reading instruction, authentic texts are used to teach specific skills. For example, one might use a picture book to practice vocabulary — allowing the child to see and understand new vocabulary in its natural context. This way, the reader learns specific literacy skills in a meaningful and motivating context that demonstrates how such skills are actually applied.

What constitutes an integrated reading program?

The NRP states that a program that overemphasizes phonics instruction is less effective in teaching a child to read than a program that integrates a systematic phonics program with other reading instruction (e.g., phonemic awareness, fluency, text comprehension). This underscores the importance of using phonics instruction as a means to an end — to advance oral reading and reading comprehension.

USING RESEARCH AND REASON IN EDUCATION

HOW TEACHERS CAN USE
SCIENTIFICALLY BASED RESEARCH
TO MAKE CURRICULAR
& INSTRUCTIONAL DECISIONS

Paula J. Stanovich and Keith E. Stanovich
University of Toronto



National Institute for Literacy

National Institute of Child Health
and Human Development

U.S. Department of Education

U.S. Department of Health and Human Services

May 2003

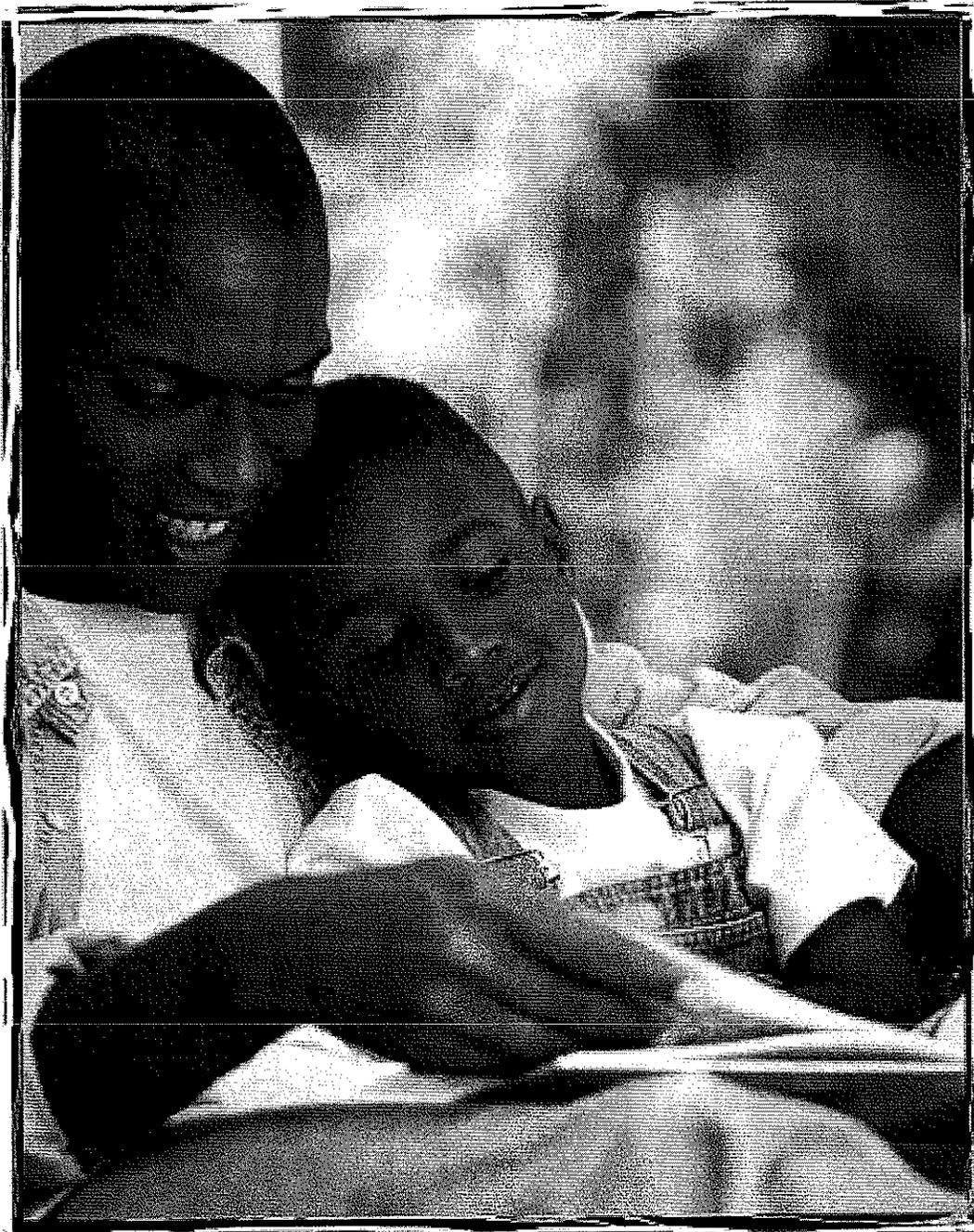
Second Edition
Spring 2003

Kindergarten through Grade 3

Proven ideas from research for parents

A Child Becomes a Reader

KINDERGARTEN THROUGH GRADE 3



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A Child Becomes a Reader

KINDERGARTEN THROUGH GRADE 3

Produced by RMC Research Corporation, Portsmouth, New Hampshire

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The National Institute for Literacy

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Spring 2003

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The National Institute for Literacy, an independent federal organization, supports the development of high quality state, regional, and national literacy services so that all Americans can develop the literacy skills they need to succeed at work, at home, and in the community.

The Partnership for Reading, a project administered by the National Institute for Literacy, is a collaborative effort of the National Institute for Literacy, the National Institute of Child Health and Human Development, the U.S. Department of Education, and the U.S. Department of Health and Human Services to make evidence-based reading research available to educators, parents, policy makers, and others with an interest in helping all people learn to read well.

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Introduction

The road to becoming a reader begins the day a child is born and continues through the end of third grade. At that point, a child must read with ease and understanding to take advantage of the learning opportunities in fourth grade and beyond—in school and in life.

Learning to read and write starts at home, long before children go to school. Very early, children begin to learn about the sounds of spoken language when they hear their family members talking, laughing, and singing, and when they respond to all of the sounds that fill their world. They begin to understand written language when they hear adults read stories to them and see adults reading newspapers, magazines, and books for themselves.

Mothers, fathers, grandparents, and caregivers, this booklet is for you. Your role in setting your child on the road to becoming a successful reader and writer does not end when she* begins kindergarten.

This booklet contains:

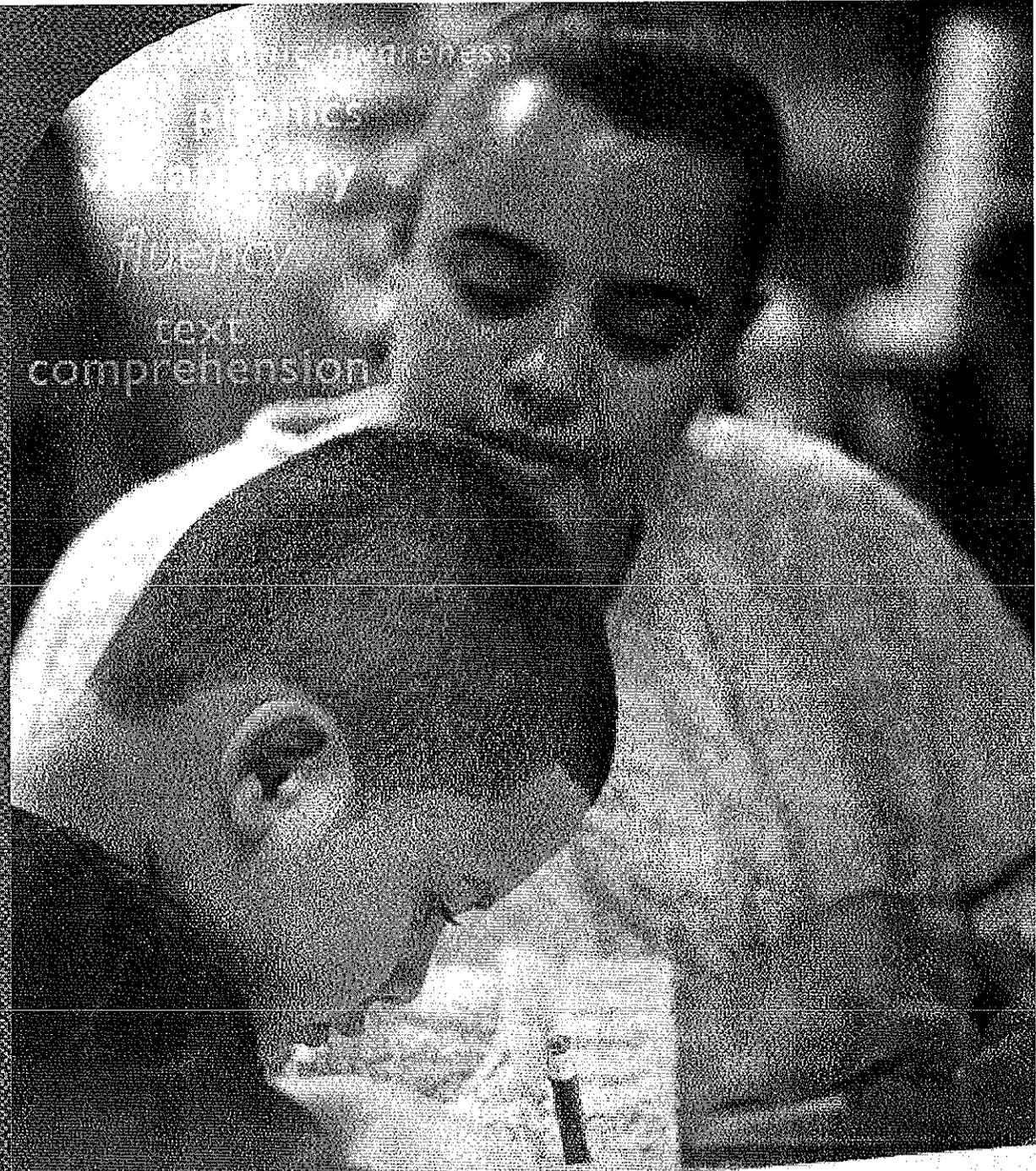
- A short summary of what scientific research says about how children learn to read and write
- Things you can do with your child at three different grade levels—kindergarten, first grade, and second and third grades—to help him become a reader, as well as what to look for in quality reading instruction at each grade level
- A list of helpful terms. Throughout the booklet, these terms appear in **bold type**.
- Ideas for books to read and organizations to contact if you would like more help or information

* To make this booklet easier to read, we sometimes refer to a child as "he" or "she." However, all of the information about how children learn to read applies to both boys and girls.

Try a few activities from this booklet with your child. You don't need special training or expensive materials. Just include the activities in the things you already do together every day. Make these activities part of the warm, loving relationship you are continuing to build with your child.



reading awareness
phonics
fluency
text
comprehension



Put
Reading First

Helping Your Child Learn to Read

A PARENT GUIDE

PRESCHOOL THROUGH GRADE 3



Success in school starts with reading.

When children become good readers in the early grades, they are more likely to become better learners throughout their school years and beyond.

Learning to read is hard work for children. Fortunately, research is now available that suggests how to give each child a good start in reading.

Becoming a reader involves the development of important skills, including learning to:

- **use** language in conversation
- **listen** and respond to stories read aloud
- **recognize** and name the letters of the alphabet
- **listen** to the sounds of spoken language
- **connect** sounds to letters to figure out the "code" of reading
- **read** often so that recognizing words becomes easy and automatic
- **learn** and **use** new words
- **understand** what is read

Preschool and kindergarten teachers set the stage for your child to learn to read with some critical early skills. First, second, and third grade teachers then take up the task of building the skills that children will use every day for the rest of their lives. As a parent, you can help by understanding what teachers are teaching and by asking questions about your child's progress and the classroom reading program.

You can also help your children become readers. Learning to read takes practice, more practice than children get during the school day. This brochure describes what a quality reading program should look like at school and how you can support that program through activities with your children.

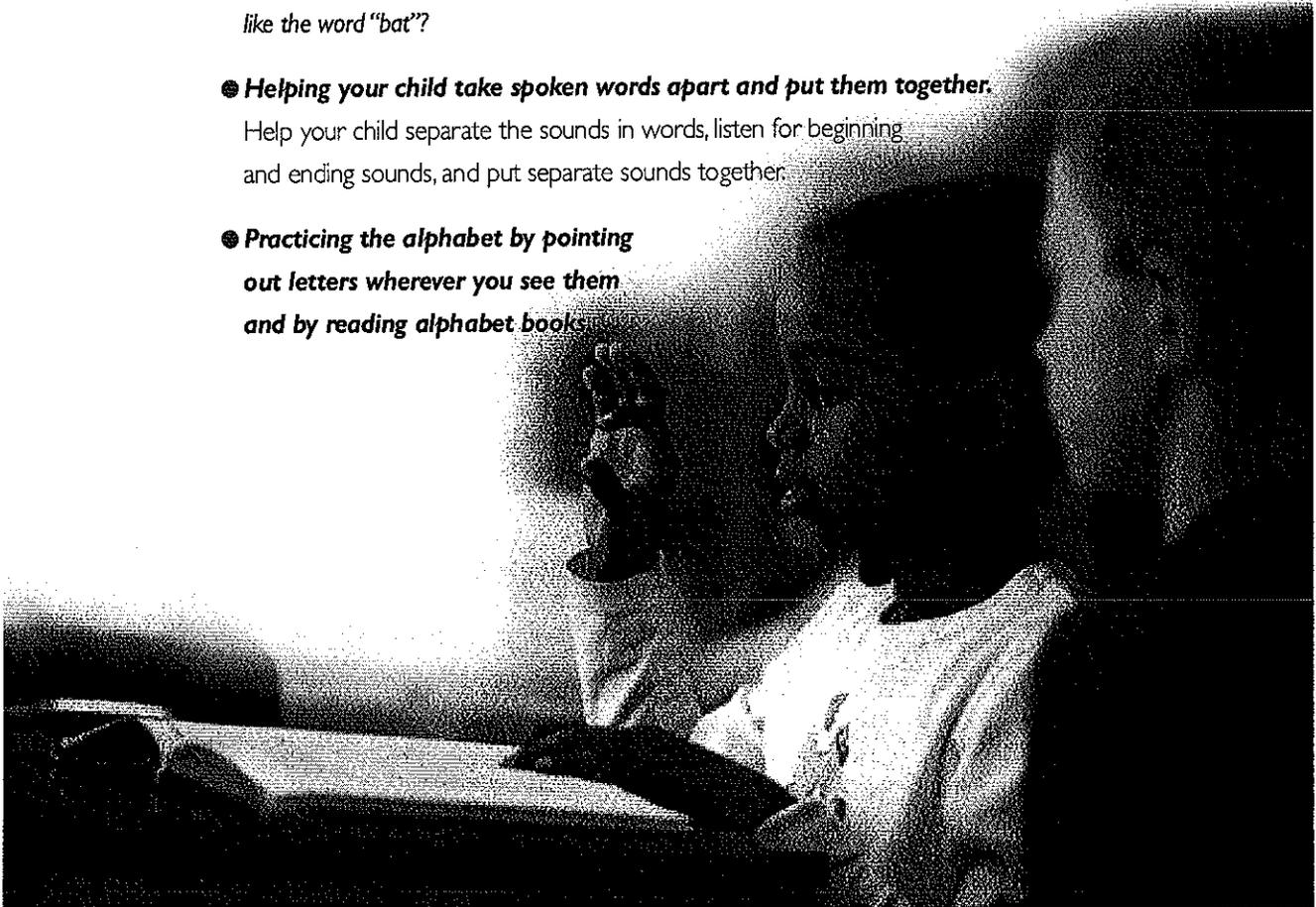
If your child is just beginning to learn to read

At school you should see teachers...

- **Teaching the sounds of language.** The teacher provides opportunities for children to practice with the sounds that make up words. Children learn to put sounds together to make words and to break words into their separate sounds.
- **Teaching the letters of the alphabet.** Teachers help children learn to recognize letter names and shapes.
- **Helping children learn and use new words.**
- **Reading to children every day.** Teachers read with expression and talk with children about what they are reading.

At home you can help by...

- **Practicing the sounds of language.** Read books with rhymes. Teach your child rhymes, short poems, and songs. Play simple word games: *How many words can you make up that sound like the word "bat"?*
- **Helping your child take spoken words apart and put them together.** Help your child separate the sounds in words, listen for beginning and ending sounds, and put separate sounds together.
- **Practicing the alphabet by pointing out letters wherever you see them and by reading alphabet books.**



If your child is just beginning to read

At school you should see teachers...

- **Systematically teaching phonics—how sounds and letters are related.**
- **Giving children the opportunity to practice the letter-sound relationships they are learning.** Children have the chance to practice sounds and letters by reading easy books that use words with the letter-sound relationships they are learning.
- **Helping children write the letter-sound relationships they know by using them in words, sentences, messages, and their own stories.**
- **Showing children ways to think about and understand what they are reading.** The teacher asks children questions to show them how to think about the meaning of what they read.

At home you can help by...

- **Pointing out the letter-sound relationships your child is learning on labels, boxes, newspapers, magazines and signs.**
- **Listening to your child read words and books from school.** Be patient and listen as your child practices. Let your child know you are proud of his reading.



If your child is reading

At school you should see teachers...

- **Continuing to teach letter-sound relationships for children who need more practice.**

On average, children need about two years of instruction in letter-sound relationships to become good spellers as well as readers.

- **Teaching the meaning of words, especially words that are important to understanding a book.**

● **Teaching ways to learn the meaning of new words.** Teachers cannot possibly teach students the meaning of every new word they see or read. Children should be taught how to use dictionaries to learn word meanings, how to use known words and word parts to figure out other words, and how to get clues about a word from the rest of the sentence.

● **Helping children understand what they are reading.** Good readers think as they read and they know whether what they are reading is making sense. Teachers help children to check their understanding. When children are having difficulty, teachers show them ways to figure out the meaning of what they are reading.

At home you can help your child by...

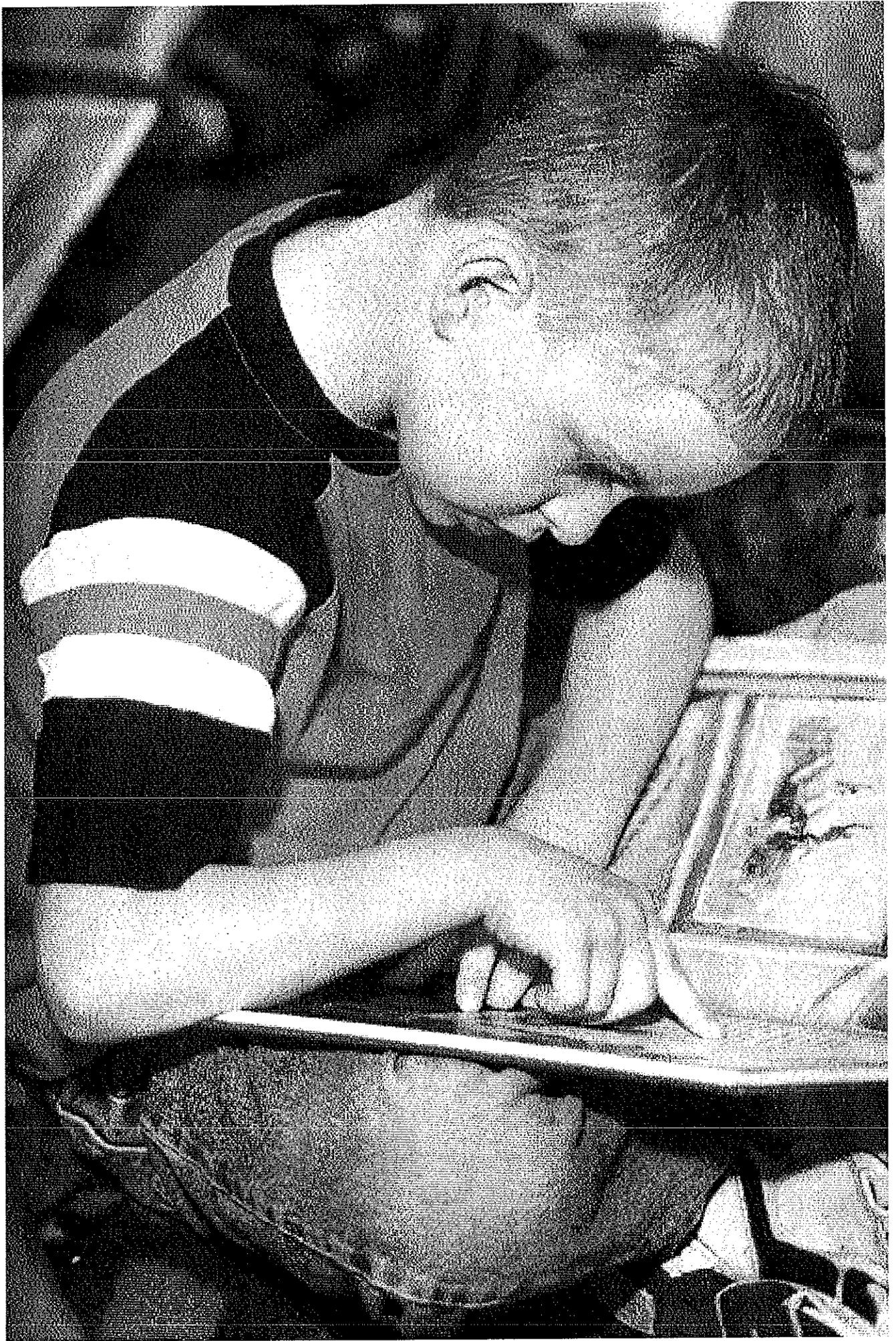
● **Rereading familiar books.** Children need practice in reading comfortably and with expression using books they know.

● **Building reading accuracy.** As your child is reading aloud, point out words he missed and help him read words correctly. If you stop to focus on a word, have your child reread the whole sentence to be sure he understands the meaning.

● **Building reading comprehension.** Talk with your child about what she is reading. Ask about new words. Talk about what happened in a story. Ask about the characters, places, and events that took place. Ask what new information she has learned from the book. Encourage her to read on her own.

*Make
reading
a part of
every day*

- **Share conversations with your child over meal times and other times you are together.** Children learn words more easily when they hear them spoken often. Introduce new and interesting words at every opportunity.
- **Read together every day.** Spend time talking about stories, pictures, and words.
- **Be your child's best advocate.** Keep informed about your child's progress in reading and ask the teacher about ways you can help.
- **Be a reader and a writer.** Children learn habits from the people around them.
- **Visit the library often.** Story times, computers, homework help, and other exciting activities await the entire family.



Put Reading First

Helping Your Child Learn to Read

The Partnership for Reading

This brochure was published by The Partnership for Reading, a collaborative effort of the National Institute for Literacy (NIFL), the National Institute of Child Health and Human Development (NICHD), and the U.S. Department of Education to make evidence-based reading research available to educators, parents, policy-makers, and others with an interest in helping all people learn to read well.

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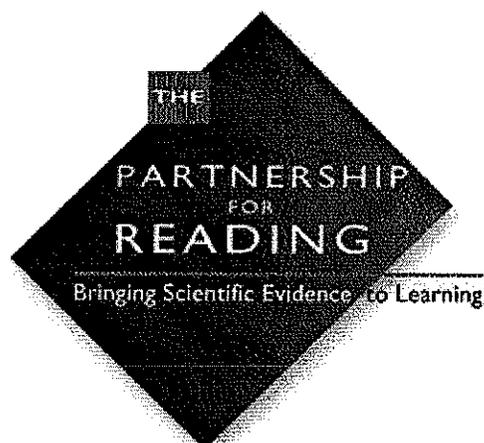
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The National Institute for Literacy, an independent federal organization, supports the development of high-quality state, regional, and national literacy services so that all Americans can develop the literacy skills they need to succeed at work, at home, and in the community. The National Institute for Literacy administers The Partnership for Reading and other programs that promote child and adult literacy. For more information about NIFL and reading, visit www.nifl.gov.

To obtain the full copy of *Teaching Children to Read*, the 2000 report of the National Reading Panel, which serves as the basis for the information in this brochure, visit www.nationalreadingpanel.org.

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