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A Focus on Comprehension

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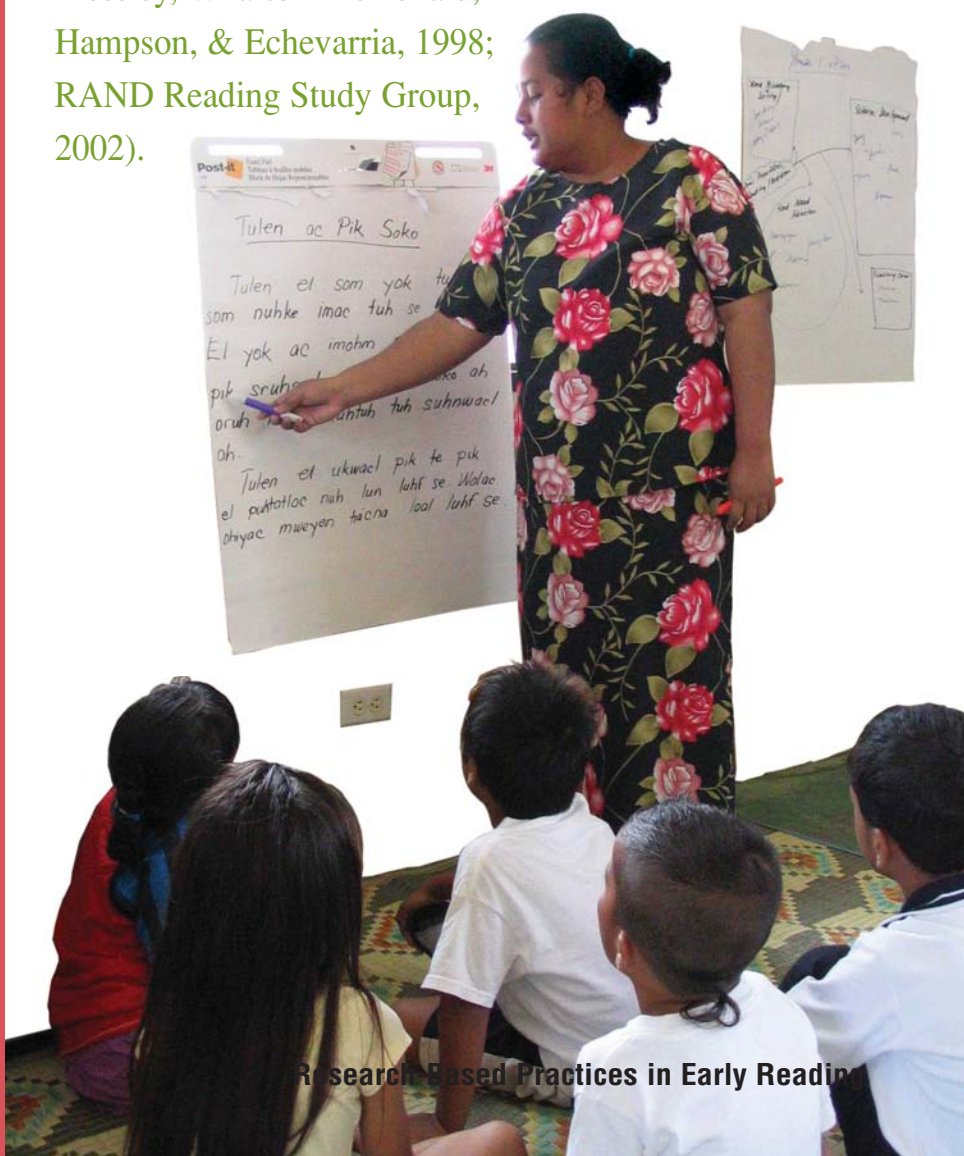
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A Focus on Comprehension

A major goal of reading comprehension instruction is to help students develop the knowledge, skills, and strategies they must possess to become proficient and independent readers. However, although decades of research have revealed a great deal of information about how readers get meaning from what they read and about the kinds of explicit instruction and activities that are most successful in helping students to become good readers, recent classroom observation studies indicate that students in typical elementary school classrooms still receive little in the way of effective comprehension instruction (e.g., Pressley, Wharton-McDonald, Hampson, & Echevarria, 1998; RAND Reading Study Group, 2002).



How serious is the problem? Consider the following figures:

1. On recent National Assessment of Educational Progress (NAEP) measures, 37% of fourth grade students fall into the "below basic" category; 59% in the "below proficient" category (Biancarosa & Snow, 2004).
2. Among fourth graders, only 40% of white students, 17% of Native American students, 16% of Hispanic students, and 12% of African American students are proficient in reading (Donahue, Finnegan, Lutkus, Allen, & Campbell, 2001).
3. Among eighth grade students, those who are nonwhite or who are from low-income families read three to four grade levels lower than students who are white and those who are economically more advantaged (Office of Vocational and Adult Education, 2002).
4. A majority of incoming ninth grade students in high-poverty, urban schools read 2 to 3 years below grade level (Office of Vocational and Adult Education, 2002).
5. More than 8 million students in grades 4–12 are struggling readers. Each school day, some 3,000 students drop out of high school (Biancarosa & Snow, 2004).

The purpose of this booklet is to examine what research tells us about factors that affect reading comprehension and about what instruction must contain and what it must do to help students become proficient comprehenders. We begin by discussing exactly what we mean by *reading comprehension*.

What Is Reading Comprehension?

Widely cited definitions of reading comprehension generally have at their core some variation of *constructing meaning from text*. Durkin (1993), for example, defines comprehension as "intentional thinking during which meaning is constructed through interactions between text and reader." In the *Literacy Dictionary*, Harris and Hodges (1995, p. 39) define it as "the construction of the meaning of a written text through a reciprocal interchange of ideas between the reader and the message in a particular text." These definitions have at their core the idea that meaning resides in the deliberate thinking processes readers engage in as they read. The meaning they *get* from their reading is influenced both by their relevant prior knowledge and experiences and by the kind of text they are reading and its content (National Reading Panel, 2000). Such definitions, however, do not adequately capture the complexity of comprehension. How well a reader is able to construct meaning from a text is influenced by many factors, including the nature of the reading activity; the abilities and skills the reader brings to the activity; the nature of the text being read—its genre, its subject matter, and the density and quality of its writing; and the social and cultural factors that make up the context of the reading.

In recent years, efforts to recognize the complexity of comprehension have resulted in expanded definitions, such as the definition used by the RAND Reading Study Group, a group charged by the



U.S. Department of Education with developing a research agenda to address pressing issues in literacy. To guide its work, the RAND group defined comprehension as: "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. It consists of three elements: the reader, the text, and the activity or purpose for reading" (RAND Reading Study Group, 2002, p. 11). According to this definition, the elements of reader, text, and activity are interrelated and are shaped by (and in turn shape) the larger social and cultural context in which the reading occurs.

Other groups, including the NAEP (National Assessment Governing Board, 2004) and the Program for International Student Assessment (Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001), have developed similar definitions to reflect comprehension as a process that requires the coordination and interaction of multiple factors.

The definition of reading comprehension used in this booklet reflects this view of comprehension as a multi-dimensional process that involves factors related to the reader, the text, and the activity.

What Is Text?

In this booklet, we use the term text to refer to any form of connected written language, including the language found in/on:

- comic books
- computer screens
- directions/instructions
- magazines
- newspapers
- novels
- poems/rhymes
- repair manuals
- short stories
- signs
- textbooks

Factors Related to the Reader

All readers bring to their reading differences in *competencies*, such as oral language ability, fluent word recognition, and knowledge of the world. They also bring an array of *social* and *cultural influences*, including home environment, community and cultural traditions, and socioeconomic status (RAND Reading Study Group, 2002; Rueda, 2004).

Reader Competencies

To understand the role that reader competencies play in comprehension, it is helpful to view reading as a 2-level process. One level is made up of the application of *foundational skills*, such as word recognition and decoding, fluency, and vocabulary knowledge. The other level is made up of *higher order reading processes*, or the procedures readers use to make connections among words—that is, how words work together in sentences, paragraphs, and passages—and to make connections between their existing knowledge and text information so as to analyze, evaluate, and think about the meaning of sentences, paragraphs, and entire texts (Pressley, 2000; RAND Reading Study Group, 2002). Proficient comprehension requires all these processes.

Foundational Skills and Processes

Word recognition and decoding. Good readers understand that there are systematic and predictable relationships between written letters and spoken sounds (Adams, 1990; Anderson, Hiebert, Scott, & Wilkinson, 1985; Bond & Dykstra, 1967; Chall, 1967). Because of this knowledge, good readers are able to read familiar words quickly, accurately, and automatically, and to "decode" unfamiliar words by identifying and blending the individual sounds represented by each word's letters. Once good readers have identified a word, they use this knowledge to determine whether they know the word's meaning—that is, whether it is in their oral language vocabulary and whether the word makes sense in its context. If it does, they move on with their reading; if it does not, they look closer at the word and think longer about its meaning (Adams, 1990).

Clearly, word recognition and decoding are foundational reading skills, and must be core elements of any program of beginning reading instruction. These skills alone, however, do not lead automatically to effective comprehension. Good word recognition and decoding skills are necessary but not sufficient if we want students to be able to read and make sense of the many kinds of text they

will encounter in (and out of) school (Adams, 1990; RAND Reading Study Group, 2002; Snow, Burns, & Griffin, 1998).

Fluency. Defined by the National Reading Panel (2000, p. 3.5) as "the ability to read a text quickly, accurately, and with proper expression," fluency appears to serve as a bridge between word recognition and reading comprehension.[1] It is because fluent readers are able to identify words accurately and automatically, that they can focus most of their attention on comprehension (LaBerge & Samuels, 1974). They can make connections among the ideas in the text and between the text and their background knowledge. In other words, fluent readers can recognize words and comprehend at the same time. Less fluent readers, however, must focus much of their attention on word recognition. Because they cannot identify words rapidly, they may read word-by-word, sometimes repeating words, sometimes misreading or skipping words. They may group words in ways that they would not do in natural speech, making their reading sound choppy (Dowhower, 1991). The result is that non-fluent readers have insufficient attention to devote to comprehension (see, e.g., Anderson et al., 1985; National Reading Panel, 2000).

Vocabulary knowledge. The powerful relationship between comprehension and vocabulary knowledge is one of the most consistent findings in reading research.[2] Research shows both that good readers generally have large vocabularies (Anderson & Freebody, 1981; Nagy, Anderson, & Herman, 1987) and that improving students' vocabularies also can improve their reading comprehension (Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Pople, 1985). The relationship works this way: To get meaning from what they read, students need a great many words in their vocabularies as well as the ability to use various word-learning strategies to establish the meanings of words they do not know when they encounter them in print. Students who lack adequate vocabularies or effective word-learning strategies necessarily struggle to achieve comprehension.

Higher Order Reading Processes

Good readers bring to each reading activity a great deal of general world knowledge (Anderson & Pearson, 1984; Hirsch, 2003). As they read, good readers activate their network of existing knowl-

[1]For a more complete discussion of the role of fluency in reading comprehension, see the PREL booklet *Focus on Fluency*, available online at *www.prel.org*.

[2]For a more complete discussion of the role of vocabulary in reading comprehension, see the PREL booklet *Focus on Vocabulary*, available online at *www.prel.org*.

edge, or *schema*, as they encounter topics or words in a text that relate in some way to that network. Once activated, schemas trigger connections to other schemas, thus supporting comprehension. Logically, then, the larger a reader's network of schemas the greater the likelihood that he or she will read with comprehension.

In addition, good readers engage in *metacognition* as they read. *Cognition* refers to mental functions such as remembering, focusing attention, and processing information. *Metacognition* refers to readers' awareness of their cognition; that is, their thinking about their thinking. For example, before they read, good readers use their knowledge of the text subject to think about and set purposes and expectations for their reading. As they read, they think about whether they are understanding the text and, if not, what they can do to improve understanding. After reading, they may think about what they read, whether they enjoyed or learned something from it, and whether their reading gave them ideas of information they might use in the future (Palincsar & Brown, 1984; Paris, Lipson, & Wixson, 1983; Paris, Wasik, & Turner, 1991; Pressley, 2000).

Social and Cultural Influences

To a certain extent, reading is a cultural and social activity, as well as a cognitive one. As a result, reading differences among students often reflect the varying social and cultural environments in which students live and learn to read (Dickinson, 2004; Gee, 1990). This is so because children's initial attitudes toward reading are acquired, quite naturally, through their experiences with their families and though their social interactions in their cultural and language communities. These attitudes represent how families and cultural or language communities interpret the world and transmit information and how they view themselves as readers (Dickinson, 2004; Gee, 1990; Heath, 1992).

Students' socioeconomic status (SES) also can play a role in their reading development. Students from low-income homes may have fewer early experiences with books and engage in fewer literacy-promoting activities than students from higher income homes (Whitehurst & Lonigan, 2001). In addition, they may have fewer opportunities to engage in the kinds of "academic," or school-related oral language experiences that contribute to the vocabulary growth so essential to later reading comprehension (Hart & Risley, 1995; Kamil, 2004). Nonetheless, as Goldenberg (2001) notes, "Effective school and classroom programs will make a difference, despite SES."

Recognizing Students' Diverse Backgrounds

> Only when teachers understand the cultural backgrounds of their students can they avoid culture clash. In the meantime, the ways in which teachers comprehend and react to students' culture, language, and behaviors may create problems. In too many schools, students are required to leave their family and cultural backgrounds at the schoolhouse door and live in a kind of "hybrid culture" composed of the community of fellow learners.
>
> *(Latchat, 1998)*

Factors Related to the Text

Comprehension comes from the representations of the ideas in a text that readers construct as they read (Alexander & Jetton, 2000). These representations are influenced by text features and are related to *genre* and *structure*, or the way in which content is organized (RAND Reading Study Group, 2002) and to *language features*, such as vocabulary and syntax (sentence structure and complexity) and the author's writing style and clarity of expression (Armbruster, 1984; Freebody & Anderson, 1983).

Text Genre and Structure

Text genre may be classified in many ways, such as fiction, nonfiction, fairy tales, fables, and plays. *Text structure* refers to familiar patterns that establish the interrelations among the ideas of a genre, such as cause-effect or time-order relationships in nonfiction; the division of plays into acts and scenes; the rhyme and rhythm of poems; dialogue in fiction—and so on. Research indicates that different text structures place different demands on readers' comprehension and that learning to identify and take advantage of text structure is a characteristic of proficient readers (Dickson, Simmons, & Kame'enui, 1998).

Although each genre has specific structural features that can be helpful to comprehension, research has focused most attention on the features of two types of writing found across genres. The two types of writing are *narrative* and *informational*. Learning from narrative writing and learning from informational writing often requires students to process what they read in different ways.

Narrative Writing

Broadly defined, *narrative writing* relates events, situations, actions, and emotions that people in a given culture might experience (Graesser, Golding, & Long, 1991; Simmons & Kame'enui, 1998). Folktales, fairy tale, tall tales, myths, fables, legends, fantasies, short stories, novels, and science fiction are all built on narrative writing. The use of narrative writing is not limited to the fiction genre, however. Because it can report actual as well as fictional experiences, narrative writing is also found in newspaper and magazine articles, in biographies and autobiographies, in poems, and in plays (Graesser et al., 1991).

Narrative writing is usually found in texts that have characters, a setting, a theme, and a plot or story line made up of events that comprise what has been called a "story grammar" (Mandler, 1987; Stein & Glenn, 1979). When good readers read a narrative, they are able to identify story grammar elements and use this information to visualize settings or characters, to make predictions about what might happen as the story unfolds, and to draw conclusions based on the series of events in the story line.

Informational Writing

Broadly defined, *informational writing* communicates factual information about the natural or social world (Duke, 2000). The writer is assumed to have knowledge about his or her topic to convey to less knowledgeable readers. As Duke (2004) notes, being able to comprehend text that contains informational writing is especially important because:

- Most texts that adults read frequently contain informational writing.
- Reading texts that contain informational writing contributes to vocabulary growth and builds knowledge.
- Texts that contain informational writing often can capitalize on students' interests and curiosities, provide opportunities for them to further develop areas of expertise, and provide valuable links to their own experiences.

Informational writing can pose special problems for students because it is often read non-linearly, out of order, selectively; and at a pace that varies from place to place in the text (Duke, 2004). Informational writing also can differ from narrative writing in the way it is presented on a page. For example, informational writing

may be organized by means of text headings and subheadings, and may contain extensive graphics, such as tables, charts, diagrams, and illustrations (National Reading Panel, 2000). The technical words found in some informational writing can also cause difficulties for students, especially when those words are used infrequently and are not well-explained (Duke, 2004).

Some researchers suggest that ensuring that students from the primary grades on are exposed to more text containing more informational writing will help to mitigate these difficulties (Hiebert & Fisher, 1990; Sanacore, 1991). Other researchers suggest that exposing young students to informational writing might help to increase their reading engagement and motivation to read more. Text with informational writing can capitalize on students' interests and curiosities, provide opportunities for them to apply and further develop areas of expertise, and provide valuable links to their personal experiences (Caswell & Duke, 1998; Duke & Purcell-Gates, 2003; Guthrie & McCann, 1997).

Language Features

The ways in which authors express their ideas in a text—the words and syntax they use—directly determine how well readers are able to access and understand those ideas. The level of difficulty of a text's vocabulary, for example, is a powerful predictor of that text's comprehensibility (Freebody & Anderson, 1983). The same is true for syntax. Complex sentences (i.e., those having several embedded ideas) and poorly structured sentences (i.e., sentences that are unduly wordy, rambling, or ambiguous) can cause comprehension problems by requiring readers to spend too much time puzzling out the meanings of the sentences (Bormuth, Carr, Manning, & Pearson, 1970; Bowey, 1986).

As studies have shown, some texts (including the content area textbooks that students must read in school) are "inconsiderate" of readers. That is, the texts do not provide enough background information nor do they make sufficient connections among ideas they are intended to convey (Armbruster, 1984; McKeown & Beck, 1994). Learning that comprehension problems are sometimes the result of unclear or poorly written text can boost student confidence and lead to improved attitudes toward reading (Hacker, 1998).

"New" forms of text pose their own language problems for readers. Text presented on computer screens, PDAs, phones, and an

ever-growing universe of electronic gadgets and devices challenge comprehension through their non-linear (i.e., not read in any particular order) presentation of information and their use of language "shortcuts" and symbols and graphics (Leu, 2000). However, these new media also hold the potential to support comprehension. Hypertext, for example, may afford students immediate access to definitions of difficult words, to sources of additional information about a topic, and to a vast array of reference materials such as maps, videos of historical events, interviews with experts in a field, and so on (RAND Reading Study Group, 2002).

Factors Related to the Reading Activity

As the RAND group notes, reading is not done in a vacuum. It is done to achieve some end. This is the dimension of reading addressed by the term *activity* (RAND Reading Study Group, 2002). A reading activity can be a session with a teacher working with an entire class, a small group of students, or one-on-one with a student. It can be students reading alone or with others. Factors related to the success of a reading activity include the *purposes* for reading and student *engagement* in reading.

Purposes for Reading

Away from school, students' purposes for personal reading might include reading to learn how to put together a game or toy, reading to find out how something works, or just reading to enjoy language and ideas or the pleasure afforded by a new work by a favorite author. In school, however, the purposes for reading are set most often by teachers. These purposes may require students to read to answer questions, to write a book report, or to prepare for a test. When a teacher-imposed purpose is unclear to students, or when they cannot see the relevance of an activity, their comprehension can suffer. The same is true when teacher-set purposes are insensitive to or incompatible with the understandings and expectations that students bring to the activity. This is a particular concern in cases in which students' social and cultural backgrounds differ from those of their teachers (RAND Reading Study Group, 2002).

School-related reading activities are most productive when teachers make the purposes for the activities clear and relevant to what students are doing or will need to do, such as reading for writing (Horowitz, 1994) or reading for presentation (Bransford, Brown, & Cocking, 1999).

Engagement in Reading

As defined by Guthrie and colleagues, *reading engagement* is "the joint operation of motivations, strategies for reading, and conceptual knowledge acquisition during reading" (Guthrie, Anderson, Alao, & Rinehart, 1999). Engaged readers want to read, believe in their ability to read, and take satisfaction in successful reading (Guthrie et al., 1999; Guthrie & Humenick, 2004).

To build reading engagement, reading activities must take into account such things as ensuring that the texts students read on their own in the classroom match their abilities. Findings by Chall, Jacobs, and Baldwin (1990) suggest that students need to have access to challenging but easy-to-comprehend reading materials if they are to improve as readers. High interest, easy-vocabulary reading materials, although sometimes necessary for building fluency, are not likely to expose students to the kinds of academic vocabulary, sentence patterns, and text structures they must understand if they are to become proficient and motivated readers.

Effective activities also ensure that students have a range of choices about their reading, including when to read, which materials to read, and how long to read. This means making available a wide variety of texts for students to choose from—magazines as well as books and informational as well as narrative writing (Gambrell, 1996; Guthrie & Humenick, 2004). This does not mean, however, that teachers have no role to play in helping students make reading choices. Indeed, studies suggest that guiding students in how to select reading materials that match their reading levels and interests, providing a structure for the reading (e.g., helping students set reading purposes), and allowing time for students to talk about their reading contribute to reading success (Anderson, 1990).

Summing up This brief discussion has provided some indication of the complexity of comprehension. The question for us now is: How can we use this information to identify the kinds of instruction that will best help students understand what they read?

The Search for Effective Comprehension Instruction

Prior to the 1970s, comprehension was generally considered to be—and was taught as—a set of discrete skills for students to practice and master (National Reading Panel, 2000). In a landmark study of reading comprehension instruction conducted in the 1970s, Dolores Durkin revealed that in most elementary classrooms, typical instruction focused on specific skills (e.g., identifying main ideas, distinguishing fact from opinion, cause and effect relationships) thought to be important to comprehension and followed what she called a mentioning, practicing, and assessing procedure. That is, teachers *mentioned* a specific comprehension skill that students were to apply, such as identifying main ideas; had students *practice* the skill by completing workbook pages; then *assessed* them to find out whether they could use the skill correctly (Durkin, 1978–79). Durkin concluded that such instruction did little to help students learn how or when to use the skills, nor did it promote comprehension.

From Skills to Strategies

Spurred by Durkin's findings, a number of researchers started to look for better comprehension instruction (for research reviews, see Dole, Duffy, Roehler, & Pearson, 1991; Pearson & Fielding, 1991; Pressley, 2000). At first, researchers focused attention on the higher order reading processes used by good readers to construct meaning as they read. What they found was that good readers achieve comprehension because they are able to use certain procedures—labeled *comprehension strategies* by the researchers—to relate ideas in a text to what they already know; to keep track of how well they are understanding what they read; and, when understanding breaks down, to identify what is causing the problem and how to overcome it (e. g., Brown, Bransford, Ferrara, & Campione, 1983; Levin & Pressley, 1981).

What Are Comprehension Strategies?

Comprehension strategies are specific cognitive procedures that guide readers to become aware of how well they are comprehending as they attempt to read and write.

(National Reading Panel, 2000)

By the 1990s, commercially developed reading programs used in the elementary grades had added strategy use as an element of their comprehension instruction, with each program adopting a set of strategies for instruction, and with the specific sets of strategies often differing from program to program. As researchers examined the results of this new instructional focus, however, some began to express reservations about how well strategy-based instruction was achieving the desired results.

Content-Focused Instruction

In observing some classrooms, researchers found that strategy instruction sometimes focuses on the memorization and application of strategies in much the same way that comprehension skills once were taught (Murphy & Alexander, 2002). Such instruction, they observed, sometimes causes students to devote too much of their thinking to the features of strategies at the expense of the true purpose of reading—getting meaning from text (Beck, McKeown, Hamilton, & Kucan, 1997; Duffy, 1993; Sinatra, Brown, & Reynolds, 2002). Other researchers observed that strategy instruction is often far more complicated than the reading selection it accompanies (Pearson & Fielding, 1991).

Given such findings, a number of researchers now maintain that instruction focused on helping students understand the ideas and representations in a text will contribute more to their comprehension than will instruction devoted to strategies for processing or thinking about the text.

Drawing on the reading process theories of Kintsch (1988), Beck and colleagues argue that the "big issue" in comprehension instruction is how to help students build coherent representations of text ideas (Beck & McKeown, 2004). Such instruction, they maintain, should not do anything that can distort the reader's developing ideas and representations. In addition, Beck and colleagues argue, such instruction should avoid talk about strategies that directs students' cognitive efforts toward thinking about text processing instead of involving them directly in understanding the text. In essence, this approach holds that if teachers help students understand the text in front of them, the comprehension strategies will "take care of themselves" (Carver, 1987).

From Research to Practice: The Components of Effective Comprehension Instruction

As the brief look at comprehension research suggests, effective comprehension instruction is instruction that helps students use both cognitive strategies and text content to arrive at deeper understandings of what they read. And it does so in ways that motivates students not just to read but to *want* to read.

Effective instructional approaches usually vary in emphasis for primary grade students and for students in the middle and upper grades, as well as for English language learners. In the following discussion, we first give an overview of a general instructional approach and then, when appropriate, describe variations for each group of students.

Teaching Comprehension Strategies

Although strategy-based instruction may not be sufficient by itself to ensure proficient comprehension, it should be a part of good comprehension instructional programs. For students in grade 3 and up, instruction in specific cognitive strategies can improve reading comprehension for all students and, most particularly, can help poor readers learn to retain, organize, and evaluate the information that they read (RAND Reading Study Group, 2002). What remains at issue in strategy-based instruction are (1) *what* strategies to teach and (2) *how* to teach them (Armbruster, Lehr, & Osborn, 2001).

What Strategies Should Be Taught?

In its review of more than 200 such studies, the National Reading Panel (2000) concluded that of the 16 categories of strategy instruction surveyed, seven appeared to have a firm scientific basis "for concluding that they improve comprehension in normal readers" (p. 4-42). Among these strategies are comprehension monitoring, using graphic and semantic organizers, using the structure of stories, answering questions, generating questions, and summarizing.

The National Reading Panel and the Research on Reading Comprehension Instruction

It is important to stress that the issue examined by the National Reading Panel was whether sufficient research evidence existed in support of *strategy-based instruction* as a way to improve comprehension. The panel did not examine other kinds of comprehension instruction, such as content-based instruction.

(National Reading Panel, 2000)

Comprehension Monitoring

Comprehension monitoring is a form of metacognition. That is, it is readers' thinking about their comprehension processes as they read. Comprehension monitoring instruction teaches students to be aware of their understanding as they read. Specifically, it teaches them to notice when they do understand, to identify what they do not understand, and to use appropriate "fix-up" strategies to resolve problems when they do not understand something they read (Taylor & Frye, 1992). Among these "fix-up" strategies that students learn are:

- Identifying where in the text the difficulty occurs. ("This paragraph doesn't make sense to me.")
- Restating a difficult sentence or passage in their own words. ("Oh, the author means his grandmother, because he's talking about how she took care of her baby daughter on the trip to America—and that baby would've been the author's mother.")
- Looking back (or forward) through the text. ("I know the author mentioned Bridget in the last chapter I read, but I don't remember much about her. Maybe if I reread that chapter, I can figure out why she's acting so badly now.")

Recognizing Story Structure

Story structure refers to the way the content and events of a story are organized into a plot. Students who can recognize story structure have greater appreciation, understanding, and memory for stories. Story-structure instruction helps students learn to identify story content—setting, initiating events, internal reactions, goals, attempts, and outcomes—and how this content is organized to make up a coherent plot. In addition, instruction can help students

learn to infer cause-and-effect, compare-and-contrast, problem-solution, and other relationships among parts of the text. This learning gives students both knowledge and techniques for reaching a deeper understanding of stories (Baumann & Bergeron, 1993; Idol, 1987; Idol & Croll, 1987).

Using Graphic and Semantic Organizers

Graphic and semantic organizers allow readers to represent graphically (write or draw) and to organize the meanings and relationships of the ideas in the text. They come in many forms, including maps, graphs, charts, frames, webs, and clusters. The main value of these organizers to comprehension appears to be their ability to improve a reader's memory of the content of what they read.

Instruction in the use of graphic and semantic organizers is particularly helpful in conjunction with the reading of informational writing in the content area texts. Used with informational writing, organizers can help students see how concepts fit into particular text structures (Englert, Raphael, Fear, & Anderson, 1988). In the form of story maps, organizers may also be used with narrative writing as a way to focus students' attention on story grammar components—characters, settings, problems, plot events, and themes—and on the relationship among these components (Saunders & Goldenberg, 1999).

Simple Story Map

Story Title _____

Beginning		**Middle**		**End**
The story starts when—	→	After that—	→	The story ends—

Question Answering

Question-answering instruction can help students get more from their reading by showing them how to find and use information from a text to answer teacher questions (Levin & Pressley, 1981).

Learning question-answering strategies can also help students locate information in a text that is related to the question.

Question-Answer Relationships (QAR)

Developed by Raphael (1986) as a way to help students improve their ability to answer comprehension questions, the QAR procedure is based on a three-way relationship among the question, the text, and the reader's prior knowledge. The procedure helps students learn to focus on the way that questions are written, and so helps them identify and make distinctions among the sources of information they can use to answer questions. The procedure follows a gradual-release model of instruction, moving from entirely teacher directed to entirely student directed.

QAR gives students four types of question-answer relationships to use as they organize their thinking. Two of the question types use "In the Text" as the source of information:

Right There: The answer to the question is in one sentence in the text.
The question and answer have the same wording.

Think and Search: The answer requires searching through the text.
The question and answer have different wording.

One question type uses "In the Text" and "In My Head" as sources for information:

Author and Me: The answer comes from existing knowledge and from text clues.

The fourth question type uses "In My Head" as the source of information.

On My Own: The answer comes entirely from existing knowledge and can be answered without using the text.

Adapted from Raphael (1986).

Question Generation

Question-generation instruction focuses on helping students learn to ask themselves questions about what they read. Teaching students to ask their own questions improves their active processing of text and so improves comprehension. By generating questions,

students become aware of whether they can answer the questions and, thus, whether they understand what they are reading (Oakhill, 1993; Rosenshine, Meister, & Chapman, 1996).

Summarization

Summarizing requires students to determine what is important in what they are reading, to condense this information, and to put it into their own words. Instruction in how to summarize contributes to comprehension by making students more aware of the way a text is organized and how its ideas are related. It helps students to identify main ideas in a text and to make connections among main ideas (Armbruster, Anderson, & Ostertag, 1987; Brown & Day, 1983; Taylor & Beach, 1984).

In addition to these strategies, the National Reading Panel found varying degrees of scientific research support for several additional strategies, including cooperative learning, activating and using prior knowledge, and using mental imagery and mnemonics.

Cooperative learning involves students working together, instructing each other in strategy use and application. Studies indicate that the cooperative learning process can increase strategy learning as well as reading comprehension (Guthrie et al., 1996; Stevens, Madden, Slavin, & Farnish, 1987).

The strategy of activating and using prior knowledge (Hansen & Pearson, 1983) produces varied results. The Panel noted, however, that prior knowledge is often elicited as part of other strategies that have proven effectiveness, such as question answering and generating questions.

The strategy of using mental imagery and mnemonics has proven reliable in improving memory for text (Gambrell & Bales, 1986; Pressley, 1976), and the Panel concluded that the strategy can be useful in helping readers recall specific information.

Multiple-Strategy Instruction

Although the National Reading Panel identified specific strategies as helpful to comprehension, it also emphasized that good readers do not rely on any single strategy to comprehend what they read. Rather, they have a repertoire of strategies and apply different strategies at different points in a text, switching strategies as the text or reading activity demands (e.g., Brown et al., 1983; Levin & Pressley, 1981). Effective strategy-based instruction, the Panel

concluded, is instruction that teaches students how to integrate and use multiple strategies flexibly. *Reciprocal teaching, Concept-Oriented Reading Instruction* (CORI), and *transactional strategy instruction*, are three examples of multiple-strategy instructional techniques that have demonstrated classroom success.

Reciprocal teaching Developed by Palincsar and Brown (1984), reciprocal teaching is an instructional activity designed to help students apply multiple strategies flexibly to gain meaning from a text and to self-monitor the success of their reading. Reciprocal teaching involves four instructional procedures:

- Explicit teaching of four strategies: clarifying, question generation, predicting, and summarizing
- Extensive student practice in applying the strategies to real text
- Scaffolding of instruction, with gradual release of the leadership role from teacher to students and
- Cooperative learning and peer support for learning

The procedure begins with the teacher and a group of students discussing a text. The discussion is structured by four strategies—summarizing, questioning, clarifying, and predicting—with the teacher modeling each strategy. After the modeling, students take turns leading the discussion about specific parts of text. One student serves as the discussion leader, asking questions about key ideas in the text, and the other students answer the question and ask questions of their own. The student leader helps the group clarify difficult words or passages that might hinder comprehension. Next, the leader summarizes the text just read and predicts what might come next. The process continues for each part of the text, with students taking turns leading the discussion (Palincsar & Brown, 1984; Rosenshine & Meister, 1994).

Reciprocal Teaching

Here are some examples of student-teacher dialogues in which the teacher provides prompts, models, and feedback on how to use the strategies of questioning and summarizing.

Questioning

Student: How do . . . spinner's mate is smaller than . . . How am I going to say that?

Teacher: Take your time with it. You want to ask a question about spinner's mate and what he does, beginning with the word how.

Student: How does he spend most of his time sitting?

Teacher: You're very close. The question would be, "How does spinner's mate spend most of his time?" Now you ask it.

Student: How does spinner's mate spend most of his time?

Summarizing

Teacher: That was a fine job, Ken, but I think there might be something to add to our summary. There's more information that I think we need to include. This paragraph is mostly about what?

Student: The third method of artificial evaporation.

Teacher: Right, so let's add that to the summary.

Adapted from Rosenshine & Meister (1994).

Transactional strategy instruction Transactional strategy instruction (TSI) combines a number of strategies and instructional techniques identified by the National Reading Panel (2000) as having solid scientific bases for improving comprehension. TSI, which takes place in small groups, is *transactional* in that it concerns the transaction during reading of the reader, the text, and the context. Specifically, TSI (1) helps students link their prior knowledge to a text through discussion, (2) involves constructing meaning as a result of the collaboration of students in a group rather than from individual interpretations, and (3) the dynamics of the group determines the responses of all group members, including the teacher (Brown & Coy-Ogan, 1993; Brown, Pressley, Van

Meter, & Schuder, 1996; Schuder, 1993). To accomplish these tasks, students are taught to use a set of reading strategies, including the following:

- Relating prior knowledge to text content
- Making and confirming predictions based on prior knowledge
- Generating and asking questions
- Using text structure
- Visualizing
- Summarizing

Concept-Oriented Reading Instruction Developed by Guthrie and colleagues (Guthrie et al., 1996; Guthrie et al., 1999; Guthrie, Wigfield, & VonSecker, 2000), CORI integrates comprehension strategies for which the National Reading Panel (2000) found firm scientific bases for effectiveness (e.g., cooperative learning, comprehension monitoring, summarizing) with inquiry science. Inquiry science includes hands-on activities such as observation of real-world phenomena and experimentation, designed to support student understanding of scientific concepts (The Inquiry Synthesis Project, 2004). Students use texts to confirm and extend the knowledge they gain through the hands-on activities. The inquiry science components of CORI provide students with a motivational and conceptual base for developing and applying strategies as they read texts.

CORI has been used successfully with a range of middle and upper elementary grade students, including low achieving students and students from diverse social and cultural backgrounds (Guthrie & Ozgungor, 2002).

CORI

In a third grade science unit on adaptations and habitats of birds and insects, students begin the unit by observing insects brought into the classroom and birds outside the classroom, then incorporate information from their observations into events built around their read-alouds. Throughout this period, the teacher encourages students to ask questions such as, "Why does that bird have such a long beak?"

Students are supported in locating books that deal with their interests, such as descriptions of the migrations of butterflies or the city homes of birds, and they receive direct instruction in strategies to use for locating information in a variety of sources (e.g., libraries, the Internet, family, community members). They also learn how to integrate information across sources including texts, illustrations, references, and human experts.

At the end of a unit, students make presentations to demonstrate their expertise. Presentations include a variety of forms, with some students working in pairs or small groups to make and share a poster or display or write a book.

Based on descriptions in Guthrie et al. (1999).

How Should Strategies Be Taught?

In addition to identifying what comprehension strategies should be included in instruction, the research reviewed by the National Reading Panel (2000) also provides guidelines for how strategy-based instruction should be conducted. This research shows that instruction is most effective when teachers explicitly teach strategies, following an explain/model/scaffold-practice-apply model (Palinscar & Brown, 1984; Rosenshine et al., 1996).

In this model of explicit strategy instruction, the teacher chooses for instruction only those strategies that align closely with the text students are reading. The teacher begins instruction by identifying a strategy and explaining what it is and why it is important to comprehension. As the teacher reads, he or she models and thinks aloud about how and when to use the strategy. After this reading and modeling, the teacher works with students to guide them in determining how and when to use the strategy on their own. As students read, the teacher provides feedback and engages them in discussion. In subsequent lessons, the teacher asks students to apply the strategy on their own to other texts (Palincsar & Brown, 1984).

Scaffolding is one of the most important features of this model of instruction, with the teacher gradually releasing to students the responsibility for strategy use (Pearson & Gallagher, 1983). However, teachers do not ask students to work on their own until the students have demonstrated that they understand a strategy and know how and when to use it (Dole et al., 1991).

A General Framework for Comprehension Strategy Instruction

1. **Select the text:** Choose an appropriate piece of text from the students' reading assignment.
2. **Select the strategy:** Determine a strategy that is relevant to the understanding of that text.
3. **Give a clear explanation:** Tell students what the strategy is and why it is useful.
4. **Model the strategy:** Help students learn how, when, and where to use the strategy by demonstrating or thinking aloud about how to use the strategy to better understand the text.
5. **Support student practice:** Work with students to help them figure out how and when to use the strategy themselves. Engage them in discussion about how they are applying the strategy; as necessary, provide corrective feedback.
6. **Have students apply the strategy:** In subsequent lessons, ask students on their own to apply the strategy to other texts. (Be prepared to do additional modeling and guided practice.)

Based on descriptions in Duke and Pearson (2002, pp. 208–209).

Strategy Instruction for Young Students

Most studies of comprehension strategy instruction reviewed by the National Reading Panel involved students in third grade and beyond—that is, the point at which most students have moved beyond beginning reading (National Reading Panel, 2000). Among the studies reviewed by the Panel, however, are several that indicate that at least some forms of strategy instruction can be beneficial in the primary grades (Duke & Pearson, 2002). Although it is important to incorporate into comprehension instruction strategy procedures that have proven effective with

young students, it is equally important to use caution when incorporating procedures that have little or no research base (Stahl, 2004).

One strategy that does appear to be effective with young students is that of identifying story elements—one of the seven strategies identified as scientifically based by the National Reading Panel (2000). Baumann and Bergeron (1993) found that when first grade students were taught explicitly how to identify story grammar elements (setting, characters, problem, event sequence, and solution), they improved their ability to retell and summarize stories, and to transfer these abilities to other stories. The use of story structure in retelling stories also has proven to be an effective technique for improving the comprehension of young children (Morrow, 1985; Pellegrini & Galda, 1982).

Young students also can be taught to generate their own questions (another strategy identified as scientifically based by the National Reading Panel). As part of a reciprocal teaching program, even first graders were able to generate their own questions (Palincsar & David, 1991). Their success reflected models that provided support and were concrete and easy to use. One such model involved having students combine question signal words (*who, what, where, when, why, how*) with question stems, or frames (How are _____ and _____ alike? What caused _____? Why _____ is important?).

Answering teacher questions—especially when the questions require students to use sources beyond the "right there" information in a text (Raphael, 1986)—has also proven effective in improving young students' comprehension (Morrow & Gambrell, 2001).

A handful of studies also show that, as with older students, young students can benefit from guidance in multiple-strategy use. As well as reciprocal teaching (Palincsar & David, 1991), a form of transactional strategy instruction, called SAIL, has been used effectively with young students (Pressley et al., 1992).

SAIL

SAIL—Students Achieving Independent Learning—is a form of transactional strategy instruction in which teachers use explicit instruction in and modeling of strategy use and focused discussion to teach students when, why, and how to apply the strategies. Students then practice strategy use in various settings and with different kinds of texts, presenting and explaining their personal interpretations of a text to each other. Although most often used with middle and upper grade students, SAIL has been used successfully with primary grade students also (Pressley et al., 1992).

Based on extensive classroom observations, Stahl (2004) found that the practices just described are not often used in primary grade classrooms. On the other hand, she found that practices with little or no research base for effectiveness with young students are used widely. Among these practices are the K-W-L procedure (Ogle, 1986) and picture walks (Fountas & Pinnell, 1996). K-W-L was designed to enable teachers to access students' prior knowledge and to help them develop their own purposes for reading expository text. Although the procedure has been shown to be effective with older students, its effectiveness with primary grade students has not yet been demonstrated. Picture walks, or having students leaf through the pages of a book to look at the pictures and talk about what they see before reading, are widely used by teachers to activate prior knowledge and build students' interest in a book. However, this procedure has limited research support.

Strategy Instruction for English Language Learners

In its review of comprehension instruction research, the National Reading Panel (2000) limited its analysis to instruction intended for native English speakers. Evidence indicates, however, that English language learners also benefit from strategy instruction (Fitzgerald, 1994; Weber, 1991).

Strategy instruction that includes approaches such as reciprocal teaching and question-answering procedures, such as QAR (Raphael, 1986), has shown promise with English language learners (Muñiz-Swicegood, 1994; Padrón, 1992). Studies of adaptations for English language learners and bilingual students of Success for All (SFA) have found positive effects for SFA on comprehension with students from first through fifth grade (Slavin & Cheung, 2003). SFA emphasizes cooperative learning (Slavin &

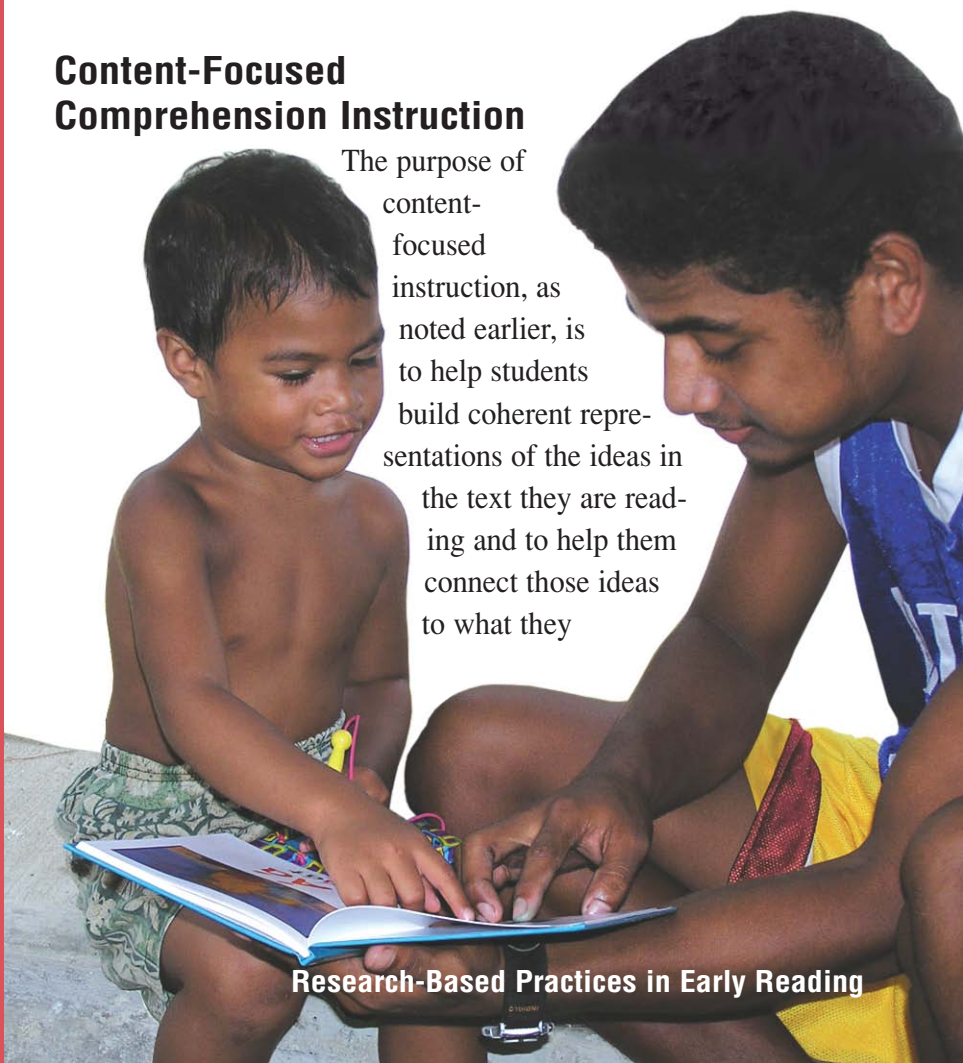
Madden, 1999) as well as other strategies, such as question asking and generating and summarizing, identified by the National Reading Panel as having firm scientific bases for effectiveness.

Significant differences between first and second language learners exist, of course, and strategy instruction must take these differences into account. English language learners, for example, know fewer English words and may have less background knowledge that relates to topics in their English language texts. García (1991) found, however, that when students had background knowledge of the topics, students performed well on reading achievement tests, suggesting that test results may seriously underestimate the comprehension potential of English language learners.

In their studies of the ways in which English language learners make sense of reading in both their first and second languages, Jiménez, García, & Pearson (1996) found that successful English language learners tended to apply strategies and knowledge from their first language as a way to understand their reading in the second language. Successful readers also used information related to both languages, such as cognates and paraphrased translating. Jiménez and colleagues found that less successful English readers were not able to transfer strategies from one language to another.

Content-Focused Comprehension Instruction

The purpose of content-focused instruction, as noted earlier, is to help students build coherent representations of the ideas in the text they are reading and to help them connect those ideas to what they



already know from previous reading and personal knowledge (Beck & McKeown, 2004; Kintsch, 1988). Studies have demonstrated that comprehension can be increased when instruction focuses students' attention on text content through *directed discussion* (Beck et al., 1997).

Although students benefit from talking about what they read and listening to others' reactions and interpretations, time limitations in most classrooms make it difficult for all students to participate in discussions about a text, even in small group situations. For this reason, effective instruction provides students with a variety of other methods to respond to reading. Chief among these response methods is *writing*.

Directed Discussions

Asking students questions about what they have read is common across classrooms. However, for students to appreciate the levels of meaning in a text and to extend their understandings, teachers must ask questions that go beyond recall of literal information or require only a single answer (that the students know the teacher knows). Many techniques exist for conducting student-teacher discussions. To be most effective, however, discussion techniques should involve a dialogue that captures and extends students' text interpretations. One such technique is Questioning the Author (QtA).

Developed by Beck, McKeown, and colleagues (Beck, McKeown, Worthy, Sandora, & Kucan, 1996; Beck et al., 1997), QtA encourages students to grapple with and reflect on what an author is trying to say and, from this reflection, to interpret and understand what they read. This is accomplished by having students consider segments of text in the course of initial reading and respond to teacher-posed queries such as "What is the author trying to tell you?" "Did the author say it clearly?" and "What do you think the author means by that?" The queries are designed to invite "understanding, interpretation, and elaboration" by having students explore the meaning of what is written in the texts they read.

QtA also recognizes that students sometimes struggle with content not because they are failing as readers but because the author has failed as a writer. When students begin to understand the idea of the "fallible author," they can begin to realize that a failure to understand is not always their fault. This allows them to approach text with a "reviser's eye," shifting attention away from trying to understand text to making text more understandable.

Questioning the Author

Students have read a passage about the different amounts of light in Antarctica in winter and summer. In the QtA that follows, the teacher has gotten students to think about *why* the amounts of sunlight are different at different times of the year, an explanation that the author has not included.

After a student has identified the tilt of the earth, the teacher asks how this connects with the different amounts of sunlight. Several students respond, building on one another's explanations.

Finally, one student named Shanelle puts the ideas together: "When the Earth is going around and the sun is coming, it's hitting—the lower part of Antarctica is showing, 'cause it's tilting more. So then it has sunshine 24 hours," (p. 40).

Following Shanelle's description, the teacher acknowledges the students' contributions and summarizes the conclusion.

Adapted from Beck et al. (1997).

Among other questioning techniques that have research support for guiding teachers in promoting effective discussions are several that have formats similar to those of the book clubs in which many adults participate. Such settings involve the use of appropriate "literary language" to talk about books and to exchange interpretations and opinions. This latter point is important, because students become more engaged in reading when they can respond to and challenge one another's interpretations (Almasi, McKeown, & Beck, 1996).

These discussions also feature teacher scaffolding of ways that students can extend their understanding by identifying such things as the author's point of view and how it influences the content and by identifying when reading problems are caused by an unclear or inconsiderate text (Armbruster, 1984). Whatever the specific technique used, getting students to express their understandings by talking about a text or by thinking aloud during and after reading are important jumping-off points for the kinds of dialogues that lead to successful comprehension.

Responding through Writing

Writing about reading can improve students' comprehension in two ways. First, reading and writing are both "composing"

processes—writers compose meaning as they write; readers compose meaning as they read (Raphael & Englert, 1989; Tierney & Pearson, 1983). Expressing opinions and interpretations in writing helps readers organize their thoughts about a text. Second, writing provides students with an insight into the tools of the literary trade—how an author's choice of genre influences his or her writing style, vocabulary use, and text organization—and how the author uses these tools to make text understandable.

NAEP and the Connection of Writing to Reading

More than half of the items on the current form of the NAEP reading tests require students to use extended writing as a way to respond to and integrate information across reading selections.

Content-Focused Instruction for Young Students

Content-focused instruction for primary grade students is most effective in the context of classrooms filled with books and other print materials and with many and varied opportunities for students to participate in reading (Morrow & Gambrell, 2001). Effective instruction also helps students develop the level of vocabulary knowledge that is essential for understanding the texts they will read throughout their lives.

For young students, reading aloud is an effective way to foster comprehension of written language, concept development, and oral language development (Bus, van Ijzendoorn, & Pellegrini, 1995; Dickinson & Smith, 1994). At the same time, classroom observations reveal that a read-aloud session by itself is not sufficient to increase comprehension. Why? Because to understand a text, students must be able both to relate their existing knowledge to the words and ideas in the text and to understand how different kinds of text "work." This can be a challenging task, especially for students with limited oral language vocabularies (Whitehurst et al., 1994).

For read-aloud sessions to be most productive, they should be accompanied with focused teacher-student talk. The value of talk around book reading lies in the way that it helps students gain experience with abstract and decontextualized language (i.e., the language used in books to represent ideas and concepts) (Beck & McKeown, 2001).

A Focus on Comprehension

Text- and Content-Based Instruction for English Language Learners

For English language learners, reading comprehension is necessarily tied to their comprehension of the language and concepts discussed in a text. Recent research has revealed several programs that are successful in addressing the language- and text-knowledge needs of these students. Two of the programs are the *SIOP Model* and *instructional conversations*.

ELL School Populations

- From the 1992–1993 school year through 2002–2003, the number of limited English proficient (LEP) students in public schools grew 84%, whereas total enrollment increased only 11%. In 18 states, LEP enrollment grew more than 200% between 1992–1993 and 2002–2003 (National Clearinghouse for English Language Acquisition, 2005).
- The U.S. Census Bureau reported that in 2000, one in five school-aged children was a nonnative English speaker (Jamieson, Curry, & Martinez, 2001).
- As of the 2002–2003 school year, there were more than 5 million English language learners in U.S. pre-K–12 schools, approximately 10% of the total enrollment (National Clearinghouse for English Language Acquisition, 2005).

The SIOP Model

Developed by Echevarria and colleagues (Echevarria & Short, 2004; Echevarria, Vogt, & Short, 2004) at the Center for Research on Education, Diversity & Excellence (CREDE), the Sheltered Instruction Observation Protocol (SIOP) is a model for delivering sheltered instruction to English language learners in mainstream classrooms. *Sheltered instruction* is a means for making grade-level academic content (e.g., science, social studies, math) more accessible for English language learners while at the same time promoting their English language development. It extends the time students have for getting language support services as they participate in their content-area classes. Sheltered instruction highlights key language features of texts and incorporates learning strategies that make the content comprehensible to students. These strategies include identifying the language demands of the content-area class; planning language objectives for all lessons and making them explicit to students; emphasizing academic vocabulary develop-

ment; identifying and strengthening background knowledge; and reviewing vocabulary and content concepts (Echevarria, 2004).

The SIOP model has proven effective with English language learners throughout the United States and with students at all grade levels across subject areas (Guarino et al., 2001).

Instructional Conversations

Conversations that both instruct and stimulate thinking can be particularly important for English language learners, many of whom have had few opportunities to develop understandings of the concepts and linguistic features found in their English texts. *Instructional conversations* are a way to provide students with opportunities to engage in interactions that promote analysis, reflection, and critical thinking, and so help to deal with their English language texts (Saunders & Goldenberg, 1999). In addition, they bring together elements of both strategy and content-based instruction.

Instructional conversations are both instructional in intent and conversational in quality—they appear to be natural and spontaneous interactions, free from the teacher-directed discussions that are often associated with formal teaching. In a typical instructional conversation, the talk revolves around an idea or concept that has meaning for students. The teacher and students listen carefully and are responsive to what others say, so that each contribution builds upon, challenges, or extends a previous one. The teacher questions, challenges, coaxes, or keeps quiet, providing clarification and instruction as needed and making sure that each student participates. Students can extend the conversations, both with the teacher and among themselves (Tharp & Gallimore, 1988).

In one study involving fourth- and fifth-grade English language learners, instructional conversations were combined with the keeping of literature logs (journals in which students wrote responses to their reading) to determine their effect on students' story comprehension and thematic understanding. Results showed that for many students, the technique led to improved story comprehension and improved written language proficiency (Saunders & Goldenberg, 1999).

The Importance of Opportunities to Read

The cognitive processes that are necessary for reading develop slowly (Kintsch, 1998). Without frequent opportunities to apply these processes, students are not likely to gain expertise in reading comprehension. Indeed, there is strong research evidence of the relationship between the amount of reading and reading achievement (see, e.g., Leinhardt, Zigmond, & Cooley, 1981). For example, recent data collected by NAEP about the number of pages students read each day as part of school work show that students who reported reading more than 11 pages each day had the highest reading achievement scores. Students who read five or fewer pages a day had the lowest scores (Guthrie, Schafer, & Huang, 2001).

Common sense dictates that people who are good at something—playing a musical instrument, dancing, playing football—typically spend a great deal of time developing their proficiency. Such is the case with reading proficiency. As Pressley (2000, p. 556) puts it, "The frequent admonition for children to 'Read, read, read,' makes sense in that extensive reading promotes fluency, vocabulary, and background knowledge." And, greater fluency, vocabulary, and background knowledge support greater comprehension (Cunningham & Stanovich, 1990, 1991, 1998; Stanovich & Cunningham, 1993; Stanovich & West, 1989; Stanovich, West, & Harrison, 1995).

The data on the relationship between the amount of reading and reading achievement are almost entirely correlational (i.e., the data do not prove that amount of reading causes increased achievement, only that there is a relationship between the two). Simply requiring students to read more on their own is unlikely to be successful in increasing either achievement or reading engagement (Carver & Liebert, 1995; Holt & O'Tuel, 1989; Vollands, Topping, & Evans, 1999). For such gains to occur, studies suggest, students need teacher support and guidance in a number of areas, including choosing books that match students' interests and abilities, setting specific goals and purposes for reading, and responding to what they read (Guthrie et al., 2001).

How Much Do Students Read on Their Own?

Across grade levels, students differ dramatically in how much they read on their own. One widely cited estimate is that fifth grade students' outside-of-school reading ranges from over 2 million words a year to less than 8,000 words a year.

From Anderson, Wilson, and Fielding (1988).

Without opportunities for frequent reading, students may learn to read but have little interest in reading, either for information or for enjoyment. A survey conducted in 2002 by the National Endowment for the Arts (2004) shows that the number of *aliterates*—people who can read but rarely choose to do so—is on the rise.

Reading at Risk

In 2002, the National Endowment for the Arts (NEA) conducted a survey entitled Reading at Risk that gathered information about the reading activities of more than 17,000 respondents. The NEA had conducted a similar survey in 1982. A comparison of the results provides us with an alarming picture of the decline in reading over that 20-year period.

For example, the survey found that adults who described themselves as readers of literature (defined as novels, short stories, plays, or poetry) dropped from approximately 57% to 47% from 1982 to 2002. Among young adults (aged 25–34), the percentage of readers went from approximately 62 to 48 over this same period.

(National Endowment for the Arts, 2004)

Finding Good Children's Books

Each year, some 5,000 new children's trade books are published in the U.S. Many sources are available for keeping up with these new titles (including content-area specific titles), including the following websites:

- American Library Association: *www.ala.org/ala/alsc/awardsscholarships/childrensnotable/notablecbooklist/currentnotable.htm*
- Children's Book Council: *www.cbcbooks.org*
- International Children's Digital Library: *www.icdlbooks.org*
- National Council for the Social Studies: *www.socialstudies.org/resources/notable*
- National Science Teachers Association: *www.nsta.org/ostbc*
- *The Scoop: http://friend.ly.net/users/jorban/main.html*

Assessing Reading Comprehension

As with any good instruction, comprehension instruction should be accompanied by reliable assessment that aligns with the instruction. Studies indicate, however, that most comprehension assessments currently are inadequate on several levels. As summarized by the RAND Reading Study Group (2002), most assessments now in wide use:

- Are not based on current understandings of comprehension and inadequately represent the complexity of comprehension.
- Confuse/combine comprehension with other student capacities (vocabulary, word-reading ability, writing ability).
- Rely too heavily on one response type.
- Rely too heavily on students' background knowledge.

The RAND group concludes that such assessments are not useful for teachers and tend to narrow the curriculum (RAND Reading Study Group, 2002).

Nonetheless, teachers do need to monitor students' comprehension. For primary grade students, informal assessment might be done through listening and retelling activities (Johnston & Rogers, 2001; Morrow & Gambrell, 2001). Following a read-aloud, teachers can ask students to recall events and details about characters and settings.

Monitoring of student progress should also be conducted on a regular basis to determine specific areas in which students are or are not making progress and whether instructional approaches are effective or should be modified or changed (Kame'enui, 2004).

For middle and upper grade students, assessment should, for example, examine students' ability to use comprehension strategies appropriately to understand what they read. When assessment shows that a student or students are misusing (or not using) a particular strategy, the teacher should respond with additional instruction or a modified instructional approach. At the same time, students should self-assess by monitoring their own use of comprehension strategies, to become aware of their strengths as well as their weaknesses as developing comprehenders (Duke & Pearson,

2002). Student work, such as graphic organizers and literature logs can also provide a means of assessment (Calfee & Hiebert, 1991).

Toward Better Comprehension Assessments

To provide more useful and accurate measures of student comprehension, assessments should:

- Reflect authentic outcomes.
- Have clear purposes.
- Reflect instruction.
- Show developmental sensitivity.
- Show instructional sensitivity.
- Recognize social, linguistic, and cultural variations.

(Kame'enui, 2004; Pearson, 2004; RAND Reading Study Group, 2002)

Conclusion

It has been almost three decades since Durkin's studies showed the lack of meaningful comprehension instruction in our elementary school classrooms (Durkin, 1978–79). Over the intervening years, other researchers have looked for ways that comprehension instruction might be made more effective. From that research, we now know a great deal about what does—and does not—work.

From research, we know that well-developed decoding and word recognition skills, vocabulary knowledge, and reading fluency are essential to proficient reading comprehension. We also know that readers who are proficient comprehenders call on a range of comprehension strategies as they read to relate ideas in the text to what they already know; to keep track of how well they are understanding what they read; and, when understanding breaks down, to identify what is causing the problem and how to overcome it.

From research, we also know that to be most effective, comprehension instruction should both help students learn about and practice using reading strategies and learn how to focus on the content of the text they are reading.

Research also points to the importance of reading practice in the form of lots of reading in many different kinds of texts. Good readers spend more time reading than students who do not read well. Students who read widely have bigger vocabularies and more extensive networks of world knowledge. Teachers and schools must provide time and texts for students to read in school and support programs that encourage students to read at home.

Most importantly, research has shown us that by providing students with effective comprehension instruction, we can help set them securely on the path to becoming proficient, lifelong readers who are motivated to read and engaged in their learning.

References

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: The MIT Press.

Alexander, P. A., & Jetton, T. J. (2000). Learning from text: A multidimensional and developmental perspective. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 285–310). Mahwah, NJ: Lawrence Erlbaum Associates.

Almasi, J. F., McKeown, M. G., & Beck, I. L. (1996). The nature of engaged reading in classroom discussions of literature. *Journal of Literacy Research, 28*, 107–146.

Anderson, R. C. (1990). *Teachers and independent reading*. Champaign-Urbana: The Center for the Study of Reading, University of Illinois.

Anderson, R. C., & Freebody, P. (1981). Vocabulary knowledge. In J. T. Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 77–117). Newark, DE: International Reading Association.

Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). *Becoming a nation of readers: The report of the commission on reading*. Champaign-Urbana: The Center for the Study of Reading, University of Illinois; Washington, DC: National Institute of Education, National Academy of Education.

Anderson, R. C., & Pearson, P. D. (1984). A schema-theoretic view of basic processes in reading. In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research*. White Plains, NY: Longman.

Anderson, R. C., Wilson, P. T., & Fielding, L. G. (1988). Growth in reading and how children spend their time outside school. *Reading Research Quarterly, 23*, 285–303.

Armbruster, B. B. (1984). The problem of "inconsiderate" texts. In G. G. Duffy, L. R. Roehler, & J. Mason (Eds.), *Theoretical issues in reading comprehension* (pp. 201–217). New York: Longman.

Armbruster, B. B., Anderson, T. H., & Ostertag, J. (1987). Does text structure/summarization instruction facilitate learning from expository text? *Reading Research Quarterly, 22*, 331–346.

Armbruster, B. B., Lehr, F., & Osborn, J. (2001). *Put reading first: The research building blocks for teaching children to read*. Washington, DC: National Institute for Literacy. (available online at www.nifl.gov)

Baumann, J. F., & Bergeron, B. (1993). Story-map instruction using children's literature: Effects on first graders' comprehension of central narrative elements. *Journal of Reading Behavior, 25*, 407–437.

Beck, I. L., & McKeown, M. G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher, 55*, 10–20.

Beck, I. L., & McKeown, M. G. (2004, September). *The three c's of comprehension instruction*. PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Beck, I. L., McKeown, M. G., Hamilton, R. L., & Kucan, L. (1997). *Questioning the author: An approach for enhancing student engagement with text*. Newark, DE: International Reading Association.

Beck, I. L., McKeown, M. G., Worthy, J., Sandora, C. A., & Kucan, L. (1996). Questing the Author: A year-long classroom implementation to engage students with text. *The Elementary School Journal, 96*(4), 385–414.

Beck, I. L., Perfetti, C. A., & McKeown, M. G. (1982). Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology, 74*, 506–521.

Biancarosa, G., & Snow, C. E. (2004). *Reading next—A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York.* Washington, DC: Alliance for Excellent Education.

Bond, G. L., & Dykstra, R. (1967). The cooperative research program in first-grade reading instruction. *Reading Research Quarterly, 2*, 5–142.

Bormuth, J. R., Carr, J., Manning, J., & Pearson, P. D. (1970). Children's comprehension of between—and within—sentence syntactic structures. *Journal of Educational Psychology, 61*, 349–357.

Bowey, J. A. (1986). Syntactic awareness in relation to reading skill and ongoing reading comprehension monitoring. *Journal of Experimental Child Psychology, 41*, 282–299.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.

Brown, A. L., Bransford, J. D., Ferrara, R. A., & Campione, J. C. (1983). Learning, remembering, and understanding. In J. H. Flavell & E. M. Markman (Eds.), *Handbook of child psychology. Vol. III: Cognitive development* (pp. 77–166). New York: John Wiley.

Brown, A. L., & Day, J. D. (1983). Macrorules for summarizing texts: The development of expertise. *Journal of Verbal Learning and Verbal Behavior, 22*, 1–14.

Brown, R., & Coy-Ogan, L. (1993). The evolution of transactional strategies instruction in one teacher's classroom. *The Elementary School Journal, 94*, 221–233.

Brown, R., Pressley, M., Van Meter, P., & Schuder, T. (1996). A quasi-experimental validation of transactional strategies instruction with low-achieving second-grade readers. *Journal of Educational Psychology, 88*, 18–37.

Bus, A. G., van Ijzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65*, 1–21.

Calfee, R. C., & Hiebert, E. H. (1991). Classroom assessment of literacy. In R. Barr, M. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 281–309). White Plains, NY: Longman.

Campbell, J. R., Kelly, D. L., Mullis, I. V. S., Martin, M. O., & Sainsbury, M. (2001). *Framework and specifications for PIRLS Assessment 2001*. Chestnut Hill, MA: Boston College.

Carver, R. P. (1987). Should reading comprehension skills be taught? In J. E. Readence & R. S. Baldwin (Eds.), *Research in literacy: Merging perspectives: Thirty-sixth yearbook of the National Reading Conference* (Vol. 36). Rochester, NY: National Reading Conference.

Carver, R. P., & Liebert, R. E. (1995). The effect of reading library books in different levels of difficulty on gain in reading ability. *Reading Research Quarterly, 30*, 26–48.

Caswell, L. J., & Duke, N. K. (1998). Non-narrative as a catalyst for literacy development. *Language Arts, 75*, 108–117.

Chall, J. S. (1967). *Learning to read: The great debate*. New York: McGraw-Hill.

Chall, J. S., Jacobs, V. A., & Baldwin, L. E. (1990). *The reading crisis: Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Cunningham, A. E., & Stanovich, K. E. (1990). Assessing print exposure and orthographic processing skill in children: A quick measure of reading experience. *Journal of Educational Psychology, 82*, 733–740.

Cunningham, A. E., & Stanovich, K. E. (1991). Tracking the unique effects of print exposure in children: Associations with vocabulary, general knowledge, and spelling. *Journal of Educational Psychology, 83*, 264–274.

Cunningham, A. E., & Stanovich K. E. (1998). What reading does for the mind. *American Educator, 22*, 8–15.

Dickinson, D. K. (2004, September). *Book time and beyond: Effective practices for supporting comprehension in preschool*. PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Dickinson, D. K., & Smith, M. W. (1994). Long-term effects of preschool teachers' book reading on low-income children's vocabulary and story comprehension. *Reading Research Quarterly, 29*, 104–122.

Dickson, S. V., Simmons, D. C., & Kame'enui, E. J. (1998). Text organization: Research bases. In D. C. Simmons & E. J. Kame'enui (Eds.), *What reading research tells us about children with diverse learning needs* (pp. 239–277). Mahwah, NJ: Lawrence Erlbaum.

Dole, J. A., Duffy, G. G., Roehler, L. R., & Pearson, P. D. (1991). Moving from the old to the new: Research on reading comprehension instruction. *Review of Educational Research, 61*, 239–264.

Donahue, P. L., Finnegan, R. J., Lutkus, A. D., Allen, N. J., & Campbell, J. R. (2001). *The nation's report card: Fourth-grade reading 2000*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Dowhower, S. L. (1991). Speaking of prosody: Fluency's unattended bedfellow. *Theory in Practice, 30*, 158–164.

Duffy, G. G. (1993). Rethinking strategy instruction: Four teachers' development and their low achievers' understandings. *The Elementary School Journal, 93*, 231–247.

Duke, N. K. (2000). 3.6 minutes a day: The scarcity of informational text in first grade. *Reading Research Quarterly, 35*, 202–224.

Duke, N. K. (2004). The case for informational text. *Educational Leadership 61*, 40–44.

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205–242). Newark, DE: International Reading Association.

Duke, N. K., & Purcell-Gates, V. (2003). Genres at home and at school: Bridging the known to the new. *The Reading Teacher, 57*, 30–37.

Durkin, D. (1993). *Teaching them to read* (6th Ed.). Boston: Allyn & Bacon.

Durkin, D. (1978–79). What classroom observations reveal about reading comprehension instruction. *Reading Research Quarterly, 15*, 481–533.

Echevarria, J. (2004, September). *Improving comprehension of expository text for English language learners.* PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Echevarria, J., & Short, D. (2004). Using multiple perspectives in observations of diverse classrooms: The sheltered instruction observation protocol (SIOP), In H. Waxman, R. Tharp, & S. Hilberg (Eds.), *Observational research in U.S. classrooms: New approaches for understanding cultural and linguistic diversity.* Boston: Cambridge University Press.

Echevarria, J., Vogt, M. E., & Short, D. (2004). *Making content comprehensible to English language learners: The SIOP model* (2nd ed.) Boston: Allyn & Bacon.

Englert, C. S., Raphael, T. E., Fear, K. L., & Anderson, L. M. (1988). Students' metacognitive knowledge about writing informational text. *Learning Disabilities Quarterly, 11*, 18–46.

Fitzgerald, J. (1994). English-as-a-second-language learners cognitive reading processes: A review of research in the United States. *Review of Educational Research, 65*, 145–190.

Fountas, I. C., & Pinnell, G. S. (1996). *Guided reading: Good first teaching for all children.* Portsmouth, NH: Heinemann.

Freebody, P., & Anderson, R. C. (1983). Effects of vocabulary difficulty, text cohesion, and schema availability on reading comprehension. *Reading Research Quarterly, 18*, 277–294.

Gambrell, L. B. (1996). What research reveals about discussion. In L. B. Gambrell & J. F. Almasi (Eds.), *Lively discussion! Fostering engaged reading* (pp. 25–38). Newark, DE: International Reading Association.

Gambrell, L. B., & Bales, R. J. (1986). Mental imagery and the comprehension-monitoring performance of fourth- and fifth-grade poor readers. *Reading Research Quarterly, 21*, 454–464.

García, G. E. (1991). Factors influencing the English reading text performance of Spanish-speaking Hispanic children. *Reading Research Quarterly, 26*, 371–392.

Gee, J. (1990). *Social linguistics and literacies: Ideology in discourses.* London: The Falmer Press.

Goldenberg, C. (2001). Making schools work for low-income families in the 21st century. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 211–231). New York: The Guilford Press.

Graesser, A., Golding, J. M., & Long, D. L. (1991). Narrative representation and comprehension. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 171–204). White Plains, NY: Longman.

Guarino, A. J., Echevarria, J., Short, D., Schick, J., Forbes, S., & Rueda, R. (2001). The sheltered instruction observation protocol: Reliability and validity assessment. *Journal of Research in Education, 11*, 138–140.

Guthrie, J. T., Anderson, E., Alao, S., & Rinehart, J. (1999). Influences of concept-oriented reading instruction on strategy use and conceptual learning from text. *Elementary School Journal, 99*, 343–366.

Guthrie, J. T., & Humenick, N. M. (2004). Motivating students to read: Evidence for classroom practices that increase reading motivation and achievement. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 329–328). Baltimore: Paul H. Brookes.

Guthrie, J. T., & McCann, A. D. (1997). Characteristics of classrooms that promote motivations and strategies for learning. In J. T. Guthrie & A. Wigfield (Eds.), *Reading engagement: Motivating readers through integrated instruction* (pp. 128–148). Newark, DE: International Reading Association.

Guthrie, J. T., & Ozgungor, S. (2002). Instructional contexts for reading engagement. In C. C. Block & M. Pressley (Eds.), *Comprehension Instruction: Research-based best practices* (pp. 275–288). New York: The Guilford Press.

Guthrie, J. T., Schafer, W. D., & Huang, C. (2001). Benefits of opportunity to read and balanced instruction. *The Journal of Educational Research, 94*, 145–162.

Guthrie, J. T., Van Meter, P., McCann, A. D., Wigfield, A., Bennett, L., Poundstone, et al. (1996). Growth of literacy engagement: Changes in motivations and strategies during concept-oriented reading instruction. *Reading Research Quarterly, 31*, 306–333.

Guthrie, J. T., Wigfield, A., & VonSecker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. Journal of *Educational Psychology, 22*, 331–341.

Hacker, D. J. (1998). Self-regulated comprehension during normal reading. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 165–191). Mahway, NJ: Lawrence Erlbaum Associates.

Hansen, J., & Pearson, P. D. (1983). An instructional study: Improving the inferential comprehension of good and poor fourth-grade readers. *Journal of Educational Psychology, 75*, 821–829.

Harris, T. L., & Hodges, R. E. (1995). *The literacy dictionary.* Newark, DE: International Reading Association.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experiences of young American children.* Baltimore: Paul H. Brookes.

Heath, S. B. (1992). Sociocultural contexts of language development: Implications for the classroom. In Richard-Amato & C. Snow (Eds.), *The multicultural classroom: Readings for content-area teachers* (pp. 102–125). New York: Longman.

Hiebert, E. H., & Fisher, C. W. (1990). Whole language: Three themes for the future. *Educational Leadership, 47*, 62–64.

Hirsch, E. D., Jr. (2003). Reading comprehension requires knowledge—of words and the world. *American Educator, 27*, 10–29, 44–45.

Holt, S. B., & O'Tuel, F. S. (1989). The effect of sustained silent reading and writing on achievement and attitudes of seventh and eighth grade students reading two years below grade level. *Reading Improvement, 26*, 290–297.

Horowitz, R. (1994). Classroom talk about text. What teenagers and teachers come to know about the world through talk about text. *Journal of Reading, 37*, 532–538.

Idol, L. (1987). Group story mapping: A comprehension strategy for both skilled and unskilled readers. *Journal of Learning Disabilities, 20*, 196–205.

Idol, L., & Croll, V. J. (1987). Story-mapping training as a means of improving reading comprehension. *Learning Disability Quarterly, 10*, 214–229.

The Inquiry Synthesis Project, Center for Science Education, Education Development Center, Inc. (April, 2004). *Technical report 2: Conceptualizing inquiry science instruction* [Electronic version]. Retrieved June 8, 2005, from Education Development Center, Inc., www.cse.org/work/research/technicalreport2.asp

Jamieson, A., Curry, A., & Martinez, G. (2001). *School enrollment in the United States: Social and economic characteristics of students: October, 1999. Current Population Reports, P20-533*. Washington, DC: U.S. Census Bureau.

Jiménez, R. T., García, G. E., & Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly, 31*, 90–112.

Johnston, P. H., & Rogers, R. (2001). Early literacy development: The case for "informed assessment." In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 377–389). New York: The Guilford Press.

Kame'enui, E. J. (2004, September). *An analysis of the architectural integrity of reading comprehension assessment and instructional materials for struggling readers.* PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Kamil, M. L. (2004, September). *Comprehension: What do we know from research?* PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Kintsch, W. (1988). The role of knowledge in discourse comprehension construction-integration model. *Psychological Review, 95*, 163–182.

Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge, England: Cambridge University Press.

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6*, 293–323.

Latchat, M. A. (1998). Shifting to standards-based learning: What does it mean for schools, teachers, and students? *Educating linguistically and culturally diverse students: An ASCD professional inquiry kit*. Alexandria, VA: Association for Supervision and Curriculum Development.

Leinhardt, G., Zigmond, N., & Cooley, W. W. (1981). Reading instruction and its effects. *American Educational Research Journal, 18*, 343–361.

Leu, D. J., Jr. (2000). Literacy and technology: Deictic consequences for literacy education in an information age. In M. L. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 743–770). Mahway, NJ: Lawrence Erlbaum Associates.

Levin, J. R., & Pressley, M. (1981). Improving children's prose comprehension: Selected strategies that seem to succeed. In C. M. Santa & B. L. Hayes (Eds.), *Children's prose comprehension: Research and practice* (pp. 44–71). Newark DE: International Reading Association.

Mandler, J. M. (1987). On the psychological reality of story structure. *Discourse Processes, 10*, 1–29.

McKeown, M. G., & Beck, I. L. (1994). Making sense of accounts of history: Why young students don't and how they might. In G. Leinhardt, I. L. Beck, & K. Stainton (Eds.), *Teaching and learning in history* (pp. 1–26). Hillsdale, NJ: Lawrence Erlbaum Associates.

McKeown, M. G., Beck, I. L., Omanson, R. C., & Pople, M. T. (1985). Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly, 20*, 522–535.

Morrow, L. M. (1985). Retelling stories: A strategy for improving children's comprehension, concept of story structure, and oral language complexity. *The Elementary School Journal, 85*, 647–661.

Morrow, L. M., & Gambrell, L. B. (2001). Literature-based instruction in the early years. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 348–360). New York: The Guilford Press.

Muñiz-Swicegood, M. (1994). The effects of metacognitive reading strategy training on the reading performance and fluent reading analysis strategies of third grade bilingual students. *Bilingual Research Journal, 18*, 83–97.

Murphy, P. K., & Alexander, P. A. (2002). What counts? The predictive power of subject-matter knowledge, strategic processing, and interest in domain-specific performance. *Journal of Experimental Education, 70*, 197–214.

Nagy, W. E., Anderson, R. C., & Herman, P. (1987). Learning word meanings from context during normal reading. *American Educational Research Journal, 24*, 237–270.

National Assessment Governing Board. (2004). *Reading framework for the 2005 national assessment of educational progress*. Washington, DC: U.S. Department of Education. (available online at www.nagb.org/pubs/r_framework_05/toc.html)

National Clearinghouse for English Language Acquisition. (2005). *The growing numbers of limited English proficient students: 1992/93–2002/03*. (available online at www.ncela.gwu.edu/policy/states/reports/statedata/2002LEP/Growing_LEP0203.pdf)

National Endowment for the Arts. (2004). *Reading at risk: A survey of literary reading in America*. Washington, DC. (available online at www.nea.gov/news/news04/ReadingAtRisk.html)

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: National Institute of Child Health and Human Development. (available online at www.nationalreadingpanel.org/)

Oakhill, J. V. (1993). Children's difficulties in reading comprehension. *Educational Psychology Review, 5*, 223–237.

Office of Vocational and Adult Education. (2002.) *High school reading: Key issue brief*. Washington, DC: U.S. Department of Education.

Ogle, D. M. (1986). K-W-L: A teaching model that develops active reading comprehension of expository text. *The Reading Teacher, 39*, 564–570.

Padrón, Y. (1992). The effect of strategy instruction on bilingual students' cognitive strategy use in reading. *Bilingual Research Journal, 16*, 35–52.

Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition & Instruction, 2*, 117–175.

Palincsar, A. S., & David, Y. M. (1991). Promoting literacy through classroom dialogue. In E. H. Hiebert (Ed.), *Literacy for a diverse society: Perspectives, practices, and policies* (pp. 122–140). New York: Teachers College Press.

Paris, S., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology, 8*, 293–316.

Paris, S., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 609–640). White Plains, NY: Longman.

Pearson, P. D. (September 29, 2004). *Comprehension assessment: Establishing performance and facilitating instruction.* Presentation at the PREL Focus on Comprehension Forum, New York.

Pearson, P. D., & Fielding, L. (1991). Comprehension instruction. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 815–860). White Plains, NY: Longman.

Pearson, P. D., & Gallagher, M. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*, 317–344.

Pellegrini, A., & Galda, L. (1982). The effects of thematic-fantasy play training on the development of children's story comprehension. *American Educational Research Journal, 19*, 443–452.

Pressley, M. (1976). Mental imagery helps eight-year-olds remember what they read. *Journal of Educational Psychology, 68*, 355–359.

Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 545–561). Mahwah, NJ: Lawrence Erlbaum.

Pressley, M., El-Dinary, P. B., Gaskins, I., Schuder, T., Bergman, J., Almasi, L., et al. (1992). Beyond direct explanation: Transactional instruction of reading comprehension strategies. *Elementary School Journal, 92*, 511–554.

Pressley, M., Wharton-McDonald, R., Hampson, J. M., & Echevarria, M. (1998). The nature of literacy instruction in ten grade-4/5 classrooms in upstate New York. *Scientific Studies of Reading, 2*, 159–191.

RAND Reading Study Group. (2002). *Reading for understanding: Toward an R & D program in reading comprehension.* Santa Monica, CA: RAND Corporation. (available online at www.rand.org/publications/MR/MR1465/)

Raphael, T. E. (1986). Teaching question-answer relationships, revisited. *The Reading Teacher, 39*, 516–522.

Raphael, T. E., & Englert, C. S. (1989). Integrating writing and reading instruction. In P. N. Winograd, K. K. Wixson, & M. Y. Lipson (Eds.), *Improving basal reading instruction* (pp. 231–255). New York: Teachers College Press.

Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of nineteen experimental studies. *Review of Educational Research, 64*, 479–530.

Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181–221.

Rueda, R. (2004, September). *Reading comprehension and sociocultural factors: Questions and theoretical considerations.* PowerPoint presentation, PREL Focus on Comprehension Forum, New York.

Sanacore, J. (1991). Expository and narrative text: Balancing young children's reading experiences. *Childhood Education, 67*, 211–214.

Saunders & Goldenberg, C. (1999). Effects of instructional conversations and literature logs on limited- and fluent-English-proficient students' story comprehension and thematic understanding. *The Elementary School Journal, 99*, 277–321.

Schuder, T. (1993). The genesis of transactional strategies instruction in a reading program for at-risk students. *The Elementary School Journal, 94*, 183–200.

Simmons, D. C., & Kame'enui, E. J. (1998). *What research tells us about children with diverse learning needs.* Mahway, NJ: Lawrence Erlbaum Associates.

Sinatra, G. M., Brown, K. J., & Reynolds, R. E. (2002). Implications of cognitive resource allocation for comprehension strategies instruction. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 62–76). New York: The Guilford Press.

Slavin, R. E., & Cheung, A. (2003). *Effective reading programs for English language learners: A best-evidence synthesis* (Rep. No. 66). Baltimore: Johns Hopkins University, Center for Research on the Education of Students Placed at Risk.

Slavin, R. E., & Madden, N. A. (1999). Effects of bilingual and English as a second language adaptations of Success for All on the reading achievement of students acquiring English. *Journal of Education for Students Placed at Risk, 4*, 393–416.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* (The Report of the Committee on the Prevention of Reading Difficulties in Young Children). Washington, DC: National Academy Press.

Stahl, K. A. D. (2004). Proof, practice, and promise: Comprehension strategy instruction in primary grades. *The Reading Teacher, 57*, 598–609.

Stanovich, K. E., & Cunningham, A. E. (1993). Where does knowledge come from? Specific associations between print exposure and information acquisition. *Journal of Educational Psychology, 85*, 211–229.

Stanovich, K. E., & West, R. F. (1989). Exposure to print and orthographic processing. *Reading Research Quarterly, 24*, 402–433.

Stanovich, K. E., West, R. F., & Harrison, M. (1995). Knowledge growth and maintenance across the life span: The role of print exposure. *Developmental Psychology, 31*, 811–826.

Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing* (Vol. 2). Norwood NJ: Ablex.

Stevens, R. J., Madden, N. A., Slavin, R. E., & Farnish, A. M. (1987). Cooperative integrated reading and composition: Two field experiments. *Reading Research Quarterly, 22*, 433–454.

Taylor, B. M., & Frye, B. J. (1992). Comprehension strategy instruction in the intermediate grades. *Reading Research and Instruction, 32*, 39–48.

Taylor, B. M., & Beach, R. W. (1984). The effects of text structure instruction on middle-grade students' comprehension and production of expository text. *Reading Research Quarterly, 19*, 134–146.

Tharp, R., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning and schooling in social context*. Cambridge, England: Cambridge University Press.

Tierney, R. J., & Pearson, P. D. (1983). Toward a composing model of reading. *Language Arts, 60*, 568–580.

Vollands, S. R., Topping, K. J., & Evans, R. M. (1999). Computerized self-assessment of reading comprehension with the Accelerated Reader: Action Research. *Reading and Writing Quarterly, 15*, 197–211.

Weber, R. (1991). Linguistic diversity and reading in American society. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 97–119). White Plains, NY: Longman.

Whitehurst, G. J., Arnold, D. S., Epstein, J. N., Angell, A. L., Smith, M., & Fischel, J. E. (1994). A picture book reading intervention in day care and home for children from low-income families. *Developmental Psychology, 30*, 679–689.

Whitehurst, G. R., & Lonigan, C. J. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11–29). New York: The Guilford Press.



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