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Foundations

Some comprehension strategies are more effective than others. Teachers who are trained in these strategies can help their students achieve increased levels of comprehension.

—International Reading Association (2003)

KEY TERMINOLOGY

Reading Strategies: Sinatra, Brown, and Reynolds (2002) define strategies as goal-directed, cognitive operations over and above the processes that are a natural consequence of carrying out a task.

Reading Skills: Skills are the smaller operations or actions that are embedded in strategies and, when appropriately applied, they "allow" the strategies to deepen comprehension.

Text: The term text is used to describe any language event, oral, written, or visual, in any format.

RECENT FINDINGS FROM COMPREHENSION RESEARCH

The RAND Reading Study Group (RRSG) (2002) defines reading comprehension as the process of simultaneously *extracting* and *constructing* meaning. Translating print to sounds and words while simultaneously making meaning is a highly complex act that is often overwhelming for a struggling reader. RRSG confirmed what many of us have witnessed, "that some of the good third grade readers will progress on their own to proficiency in reading, but many will not. Many will need explicit, well-designed instruction in reading comprehension to continue to make progress" (p. 2).

As studies of comprehension continue, some strong parallels have surfaced across the findings. One consistent conclusion is that some comprehension strategies are more effective than others (Duke & Pearson, 2002; Harvey & Goudvis, 2000; Keene & Zimmermann, 1997; Pearson, Roehler, Dole, & Duffy, 1992; RRSG, 2002). Researchers have been able to identify strategies that represent the essence of reading comprehension by systematically investigating the reading strategies that proficient readers use to understand what they read (Harvey & Goudvis, 2000). Further, findings show that teachers who are trained in these strategies can help their students achieve increased levels of comprehension. What is important to remember is that over time and with appropriate instruction, most students are capable of learning to use effective reading strategies to increase their comprehension.

So what are the reading strategies that proficient readers use successfully and automatically? Different authors cite similar but distinct comprehension strategies as those most essential to reading. Some are included in this chapter as examples. I would strongly encourage the readers of this book to read several of the examples cited as well as others. Only by studying the literature can one begin to understand the complexities of comprehension. By reading widely and comparing authors' thinking, the differences and overlaps in the use of various terms become apparent. Some writers tend to coin terms that on the surface sound new and distinctive, but in fact describe the same skill under a different label by other sources.

After analyzing numerous resources on comprehension strategies, having extensive conversations with colleagues, and synthesizing the findings of our collective experiences in teaching comprehension strategies to children, the conviction emerged that the Four Powerful Comprehension Strategies advocated in this book are strategies worth teaching well and deeply:

- **summarizing**
- **creating meaningful connections**
- **self-regulating**
- **inferring**

Numerous authors have lists of essential comprehension strategies. One way to broaden your understanding of the comprehension process is to recognize which strategies you use as an effective reader, when you use them, and why they strengthen your comprehension (see Appendix 1 for such activities). Later, as you continue to read what other writers say are essential strategies, you can compare their findings with your experiences as a reader. This awareness will go a long way in helping you make good decisions about comprehension instruction in the classroom.

Since this book is intended to be more pragmatic than academic, only a sampling of the studies and articles that are integral in promoting the ideas in this book are presented:

"Developing Expertise in Reading Comprehension" by P. David Pearson, Laura R. Roehler, Janice A. Dole, and Gerald G. Duffy in *What Research Has to Say*

About Reading Instruction, Second Edition. S. Jay Samuels and Alan E. Farstrup, Editors. International Reading Association Publication, 1992.

Essential Comprehension Strategies:

- searching for connections between what one knows and the new information in text
- monitoring the adequacy of text meaning
- repairing faulty comprehension upon realization that understanding has broken down
- distinguishing important from less important ideas
- synthesizing information within and across texts and reading experiences
- drawing inferences during and after reading
- asking questions of oneself, the author, and the text

Invitations to Literacy by J. David Cooper, John J. Pikulski, Kathryn H. Au, Margarita Calderon, and Jacqueline C. Comas. Houghton Mifflin Publishers, 1997.

Essential Comprehension Strategies:

- inferring
- identifying important information
- monitoring
- summarizing
- generating questions

Strategies That Work by Stephanie Harvey and Anne Goudvis. Stenhouse Publishers, 2000.

Essential Comprehension Strategies:

- making connections between prior knowledge and text
- asking questions
- visualizing
- drawing inferences
- determining important ideas
- synthesizing information
- repairing understanding

What Really Matters for Struggling Readers: Designing Research-Based Programs by Richard L. Allington. Addison-Wesley Longman Publishers, 2001.

Essential Comprehension Strategies:

- activating prior knowledge to make connections
- summarizing
- including story grammar lessons
- applying imagery
- generating questions
- prompting thinking aloud

Reading for Understanding: Toward an R&D Program in Reading Comprehension, prepared for the U. S. Department of Education's Office of Educational Research and Improvement. RAND Publication, 2002.

Essential Comprehension Strategies:

- questioning
- summarizing
- monitoring comprehension
- using graphic organizers

Super 6 Comprehension Strategies by Lori Oczkus. Christopher-Gordon Publishers, 2004

Essential Comprehension Strategies:

- connecting
- predicting/inferring
- questioning
- monitoring
- summarizing/synthesizing

7 Strategies of Highly Effective Readers by Elaine McEwan. Corwin Press, 2004

Essential Comprehension Strategies:

- activating
- inferring
- monitoring/clarifying
- questioning
- searching/selecting
- summarizing
- visualizing/organizing

Why Four Powerful Strategies?

Several years ago, when my colleagues and I started talking about how things were going with our work teaching comprehension to struggling, intermediate grade readers, we focused our discussions on those strategies that represent the essence of what efficient readers use to construct meaning. We decided that a *less is more* philosophy is important since we recognized that struggling readers are often overwhelmed and easily confused with too much information. We wanted to help these students develop a *depth* of understanding of a few powerful, transferable strategies rather than have exposure to a *breadth* of strategies that become mind-boggling and disconnected. Duke and Pearson (2002) tell us it is now known that there are a number of effective comprehension strategies, but also suspect that there is a point of diminishing return . . . the field could continue to focus on identifying more effective strategies, but perhaps attention is better focused on refining and prioritizing the strategies we already know about. Researchers have discovered there are

several strategies, called general reading processes, that readers use every time they read anything.

With these thoughts in mind, we began our journey of studying the strategies most commonly discussed in comprehension literature; we continued our rich conversations and debates; we made presentations to hundreds of teachers and solicited their thoughts and opinions; and slowly we began to come to consensus about how to best represent and discuss the strategies used by proficient readers. Our end result was the four comprehension strategies that we now place at the forefront of our work: *summarizing, creating meaningful connections, self-regulating,* and *inferring.* This chapter outlines the rationale for these strategies. They are also defined in the Glossary at the end of this book and are discussed in depth in chapters devoted to each. Before delving into the rationale for these four strategies, I would like to share a few personal experiences that occurred while working on this book that gave me the confidence that we were on the right track.

It was mid-fall and I was out visiting an elementary school. I stopped by a third grade classroom just as six, obviously eager, readers were called by the teacher to the back table. The classroom was print rich and well organized. It was obvious that the students had learned the teacher's management routines as they arrived at the table promptly, placed their materials down, took their seats, and earnestly turned their faces to the teacher. After a brief lesson introduction, the teacher handed each student a copy of the short book they would be reading. The teacher reminded the children that they would be reading orally at times and sometimes silently, and if they needed any reminders of the strategies good readers use, they could borrow one of the strategy rings placed in the center of the table. Now I was hooked. I had to stay for the remainder of the lesson.

When the teacher asked Amy if she would read the first paragraph aloud for the group, Amy enthusiastically began reading. At the end of the second paragraph she stopped. She studied the word "garage" while all the other students stared at the same word in their books. After a few seconds, Amy reached into the center of the table for the strategy ring. Held together by a large metal ring were nine strips of hole-punched tag paper. Each strip, approximately three inches wide and six inches long, had a different reading strategy written on it. Amy started flipping through the options. The group waited patiently, as did the teacher. When Amy began to fumble with the volume of strips, the teacher prompted, "Which strategy are you looking for, Amy?" Amy was now making her third trip around the strips. Amy was having difficulty deciding, she was becoming anxious, and her focus was getting farther and farther away from the text.

A similar experience occurred in another classroom a few weeks later. Students were scattered around this fifth grade room reading silently. They had a pencil and packets of small post-it notes close by. I sat down on the floor with one student and asked if he could talk with me about how he was using his post-it notes. "I'm writing a code on it that shows what I am thinking about while I read and then I'm sticking it in my book to mark the spot," he confidently answered. I noticed the four notes he had stuck in various spots of his book all had the same code written on them: T-S. This code, he explained,

meant he made a text-to-self connection at that particular spot in his reading. "What other kinds of codes might you use?" I asked. He hesitated and then said he couldn't remember the other codes because there were a lot, but he would be glad to go get his code sheet from his desk and show me. After rummaging through his already jumbled desk for several minutes, he was delighted to retrieve the rumpled code sheet. We sat and looked at it together. There were approximately ten separate codes for various types of reading behaviors, some of which he could explain but some for which his response was, "I forget what that one means." (Contrast this use of post-it notes with how they are used in the first sample lesson in Chapter 4.)

These two scenarios struck me because the teachers in both classrooms are conscientious, hard-working educators trying to do what is best for their struggling readers. However, the menu of strategies they were asking students to use was mind-boggling—especially for the students whose comprehension is so fragile. Additionally, in interviewing the students, I found they frequently had a procedural knowledge of a few of the reading strategies and skills (e.g., they could retell the steps of a strategy), but they had difficulty explaining why the strategy was important or when it should be used during reading.

A limited inventory of strategies not only becomes more manageable for students, it provides instructional focus. This focus allows teachers to spend more time unpacking the complexities of the comprehension strategies and modeling their use across many different types of texts. With fewer strategies, students gain repeated opportunities to practice, discuss, and consequently develop a deeper understanding of each one and how they all support each other. Readers begin to independently transfer their learning of strategies to other reading situations. In other words, *less* truly can be *more.* These beliefs served as guidelines and strengthened the efforts my colleagues and I used to consolidate the growing volume of literature related to comprehension strategies into a meaningful, concise, and powerful few.

The Four Powerful Comprehension Strategies

Summarizing, creating meaningful connections, self-regulating, and *inferring* are not only acknowledged in this book but in many others as strategies essential to reading comprehension (Allington, 2001; Cooper, Pikulski, Au, Calderon, & Comas, 1997; Harvey & Goudvis, 2000; Keene & Zimmermann, 1997; Oczkus, 2004; RRSG, 2002). In this book, the most encompassing name is used to describe each strategy in order to best reflect all the skills that the strategy implies. For instance, this book uses the term *self-regulating* as an essential reading strategy to ensure comprehension is maintained; other writers use the term "monitoring." The cognitive skills involved when a reader is self-regulating include monitoring text meaning, but are broader. The strategy self-regulating also refers to readers solving problems when meaning breaks down, and being aware of how the reading situation will affect his or her understanding.

Some writers use strategy terms that are redundant or only shades apart in their distinction. For example, determining importance in text and finding main ideas are strategies defined in the same manner by different authors.

Writers' lists of essential comprehension strategies also differ in length. The Four Powerful Comprehension Strategies identify and synthesize the common threads running through the literature and identify the *skills* that support each strategy. Finally, the four strategy sets presented here are well supported across reading comprehension research.

One word of caution: There is an inherent problem in a list; it gives the impression that each item is accessed separately and is more or less important depending on its placement. People typically approach a list this way in their efforts to manage the items, but the more items there are, the more likely the illusion will persist that each strategy and skill has a separate identity and that one may be more essential than the other. This is yet another reason to keep things succinct and to the point!

Collapsing the comprehension work and thoughts of many resulted in a short inventory of four strategies with a listing of skills embedded under each strategy heading (see Figure 1.1). It is important to point out, again, the strategy and skill sets are highly interrelated but are not hierarchical in nature.

Strategy: Summarizing

Summarizing requires the reader to identify, paraphrase, and integrate important text information. Summarizing may occur across different lengths of text. For example, a reader may summarize across sentences, paragraphs, an entire passage, or across texts. Summarizing is one of the "Big Four" Strategies, as it requires a reader to sufficiently understand the intended message of the text in order to answer the question, "What is the author really saying?"

Summarizing is a strategy in which a reader is constantly synthesizing the important ideas in text. While summarizing, the reader determines what is important (main ideas), and eliminates redundant information and supporting details. Summaries are significantly shorter than the original text and take a broad overview of the source material. Summaries allow the reader to keep track of the ideas or opinions of the author without necessarily hanging on to all the supporting details.

In creating summaries of content material, a reader may organize the critical information of the text into generalizations or statements that represent a composite of the "big ideas" presented. Explicitly teaching students how the strategy summarizing may help them arrive at generalizations that represent important concepts and facts will facilitate deeper understanding. H. Lynn Erickson (2002) tells us that the process of designing and teaching a concept-based curriculum focuses on teaching toward the generalizations of the discipline that transfer across time and cultures. Can we strengthen this notion further by teaching readers how summarizing can help them independently recognize the important, enduring ideas? Erickson (2002) cites the work of Caine and Caine (1997), who discuss deep and felt meaning. We know that in order to move comprehension beyond the literal level and get to a deeper understanding of text, readers need to be more strategically engaged with their reading. Felt meaning takes a reader even further. Caine and Caine tell us, "It is an almost visceral sense of relationship, an unarticulated sense of connectedness that ultimately culminates in insight. . . . It is the coming together of

Figure 1.1   Four Powerful Comprehension Strategies

Summarizing	Creating Meaningful Connections

• Identifying important information (main idea)
• Distinguishing between a topic and main idea
• Generalizing important information & ideas (concepts)
• Determining and sequencing events and ideas
• Identifying genre
• Identifying type of text structure
• Categorizing and classifying using text information and background knowledge
• Paraphrasing
• Questioning: e.g., *How does this paragraph relate to the text information read so far? Which graphic organizer would I use to present the information in this selection? What essential points is the author making?*
• Synthesizing concepts and events
	• Imaging
	• Being aware of text language
	• Activating prior knowledge/experience:
	  ○ Previewing
	  ○ Making Text Connections:
	    — Text to Self (T-S) *Comparing and evaluating background experiences and images with information and descriptions presented*
	    — Text to Text (T-T) *Comparing and analyzing characters, plots, themes, information, purposes, descriptions, writing styles, and/or versions of texts*
	    — Text to World (T-W) *Comparing and considering text information with knowledge of the world*
	• Questioning: e.g., *How does this character's feelings compare to mine when I was in a similar situation? What images does the language create in my mind? How do my connections help me better understand?*
	• Synthesizing various types of connections and text

Self-Regulating	Inferring
• Knowing: self as a learner, the reading task, and reading strategies • Knowing the purpose for reading • Looking back, rereading and reading ahead • Predicting, confirming, clarifying, revising • Problem-solving words, phrases, or paragraphs • Cross checking multiple sources of information • Adjusting reading rate • Questioning: e.g., *What is going on in the text? Why am I reading this text? Are there ideas that don't fit together? Are there any words I don't understand? Is there information that doesn't agree with what I know? How can I problem solve to support my understanding?* • Synthesizing text with background info.	• Using background knowledge • Determining author's purpose • Being aware of text language • Recognizing author's biases/views • Making predictions • Determining theme • Drawing conclusions • Questioning: e.g., *What conclusion can I draw based on the ideas presented? What opinions are revealed in the selection? Where can I find clues about the character's feelings? What information is missing? Based on what I've read so far and what I know about this topic, what might come next? How can I use my questions to modify the emerging theme?* • Synthesizing text clues and various types of connections
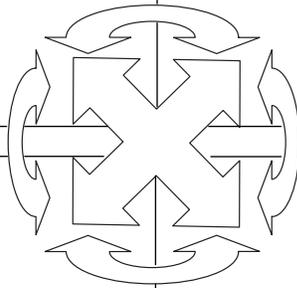
thoughts, and ideas and senses and impressions and emotions . . ." (as cited in Erickson, 2002, pp. 147–148). Summarizing, supported by other strategies, may be the key to reaching felt meaning.

Erickson's (2007) work in structuring curriculum around the essential generalizations of a discipline gives teachers clear ideas about which concepts to teach. A concept-based curriculum coupled with explicit instruction in complex performance process (e.g., summarizing) may help students learn how to independently unpack the important ideas in their content area reading. Summarizing is a cornerstone strategy for reading with understanding, for remembering what was read, and for transferring learning to new situations.

Teaching students to summarize what they read is a way to improve their overall comprehension of text. Dole, Duffy, Roehler, and Pearson (1991) describe summarizing as follows:

> Often confused with determining importance, summarizing is a broader, more synthetic activity for which determining importance is a necessary, but not sufficient, condition. The ability to summarize information requires readers to sift through large units of text, differentiate important from unimportant ideas, and then synthesize those ideas and create a new coherent text that stands for, by substantive criteria, the original. (p. 244)

Some authors (Harvey & Goudvis, 2000; Keene & Zimmermann, 1997) refer to "determining importance" as a major comprehension strategy. This book treats determining importance as a skill subsumed in the strategy summarizing. It is an important skill that a reader uses in creating a summary. There are a number of other important skills that are also embedded in this strategy and they are identified and discussed in Chapter 3, the Glossary, and Appendix 1.

Strategy: Creating Meaningful Connections

Readers make connections with text in a variety of ways. Connections with text are made by bringing one's background knowledge to the information in the text. When *creating meaningful connections,* a reader is relating his or her previous experiences, knowledge, and/or emotions to the ideas presented in the text. This important strategy has recently become overdone and misused in many classrooms. If the connections readers create are only at a surface level or focus on a minor detail from the text, the result is a shallow connection that does little or nothing to enhance the reader's comprehension. There are many skills in operation when a reader is creating meaningful connections.

Strategy: Self-Regulating

When *self-regulating,* a reader is continuously checking his or her reading to make sure it makes sense, and is also using a variety of "fix-up" skills when it does not make sense. Fountas and Pinnell (2001) point out that for developing readers this usually entails monitoring the language of the text. The focus of this book, however, is on struggling intermediate grade readers, and for them

the process is more complex. As texts become longer in length, the content less familiar, the vocabulary load higher, and as authors employ more literary techniques in their writing, using the strategy of self-regulating not only becomes more critical to comprehension, but also demands more skills from the reader.

When meaning "breaks down," proficient readers know it and immediately begin to search for ways to recover meaning. For many struggling readers, this is the major problem. They may not become aware that they have departed from the meaning of the text until they are hopelessly confused or worse yet, until they have completed the text and been asked to respond. Jitendra, Hoppes, and Xin-Ping (2000) report that the effectiveness of self-regulating [instruction] for students with learning disabilities has been adequately demonstrated in numerous studies.

Self-regulating is one of the Four Powerful Comprehension Strategies because it is intricately embedded in the other three strategies: *summarizing, creating meaningful connections,* and *inferring.* Self-regulating is a systematic plan that a reader consciously adapts to improve individual performance.

Strategy: Inferring

Inferring is an essential reading strategy, as it not only facilitates comprehension but it also enhances the reader's enjoyment of text as new perspectives are discovered. It is a complex and sufficiently important strategy to warrant being considered one of the "Big Four."

One characteristic of skillful writing is an author's ability to tease the reader with subtle hints about how different story strands weave together to create intrigue and meaning. Readers search for insights and relationships among elements of text. They combine this information with their background experience and/or with other content to make predictions about where the text is going.

Readers infer differently depending on their purpose for reading. For example, inferences made while reading a nonfiction text for specific information may be based on the information supplied by the author. When readers are not familiar with a topic, they may need to rely on these text-based inferences in order to comprehend.

Inferences made while reading more familiar material or a narrative text for enjoyment may be more in the form of personal connections based on background knowledge and experiences (Durkin, 1993). There is a close relationship between the strategies *creating meaningful connections* and *inferring,* but as mentioned previously, an overreliance on personal connections while inferring may result in distorted comprehension (schema imposing) or may limit understanding to only that which is familiar. Readers need to constantly cross-check their inferences with other text information and utilize other skills that support inferring.

Summary of Recent Findings
From Comprehension Research

What does this all say? Well, one message is that *less is more.* Research and writers have clearly identified a limited number of strategies that expert readers consistently use to ensure comprehension. Although there are shades of

variation according to which author is being cited, the commonalities are strong. These may be considered the *power strategies* of reading. A reader must have many opportunities to consciously apply these strategies across different types of texts, must understand how and why each strategy facilitates comprehension, and must have years of reading practice in order to become a sophisticated, strategic reader.

While the strategies and skills in Figure 1.1 are in list form and addressed separately, the reader is reminded that the Four Powerful Strategies are processes that operate as a working *system* while reading. A reader uses them in an integrated and reciprocal manner before, during, and after reading. The integration of these reading processes results in efficient comprehension. This means that readers need to be proficient enough with each strategy so they can use them flexibly but deliberately, adapting them quickly and appropriately according to the demands of the text, the situation, and the reader's needs. These strategies have been shown to be important for all readers and should therefore be central to all reading curriculum and instruction.

In Chapters 3–6, these strategies are revisited, one at a time, with sample lesson plans designed to maximize the transfer of learning. The design and instructional activities of the lessons show how to effectively teach students the comprehension process by "unpacking" the skills embedded within each strategy.

KEY TERMINOLOGY

Instructional Activities/Techniques: Instructional activities are the means that teachers use to ensure that students become capable and confident comprehenders of text.

READING COMPREHENSION INSTRUCTION

The RAND Reading Study Group (RRSG) (2002) devoted a considerable amount of time and expertise to what we know about reading comprehension instruction and what we need to know. Some of their findings are very disturbing. For example, despite the well-developed knowledge base supporting the value of instruction designed to enhance comprehension, comprehension still receives inadequate instructional time and attention in most classrooms. Durkin (1978–1979) was the first to ring this alarm when, in her late 1970s studies of classroom reading instruction, she observed teachers devoted only 2 percent of their reading instruction to actually teaching children how to comprehend what they read. When comprehension instruction was present, many teachers appeared to be "mentioning" a skill to students and "assigning" it to them rather than employing the effective instruction, modeling, and transactional practices that research supports. RRSG went on to report that there is evidence that a relatively small set of strategies appears to be consistently effective across diverse populations of students, with diverse forms of text, and for

diverse tasks that the reader is to accomplish (p. 46). Numerous studies show that when conscientious, diligent, and knowledgeable teachers apply strategy instruction in the classroom—even when applied imperfectly in the beginning—their students do improve in reading comprehension (NICHD, 2000, p. 48).

So what do the teachers who get these results do?

Comprehension Instructional Activities and Practices

We have precious little time left to help intermediate grade readers who continue to struggle, therefore we cannot afford to get sidetracked using creative activities that yield minimal results. We need to get the most out of our instructional practices and activities. Instructional activities are the vehicles teachers use to leverage students' strategy learning so they can better understand and interpret text. Some common instructional activities that relate specifically to reading comprehension include verbal and visual prompts; K-W-L; marking text (with sticky notes, check marks or comments in the margins, or highlighting); graphic organizers; vocabulary games; word sorts; Question-the-Author; Question-Answer-Relationship; Reciprocal Teaching; and so on. This is certainly not a full account of all the choices there are for instructional activities/techniques and you can already see why teachers become confused about what to do!

We want to select instructional activities and techniques that provide students with direct and relevant experiences in strategy learning and give them insight into what they are doing as readers to make meaning of text. In other words, the instructional activities we use need to clarify the teaching point (focus) of the lesson and the reading process. Some activities illustrate particular comprehension strategies better than others and may be more suited to students' needs and background experiences.

The instructional activity should be viewed as a *means* to facilitate students' deep understanding of strategies that support comprehension rather than as an end in itself. When asking students what they learned in their reading group on a given day, too often their replies refer to the teaching activities (e.g., "I learned how to sort sentence strips" or "I learned how to fill in a Venn diagram") rather than to the comprehension strategy under study (e.g., "I learned it is important to stop and reread when my reading no longer makes sense"). Instructional activities are highly familiar to teachers—"how to" books fill the shelves of teacher stores and are readily available online. But buyers beware; you cannot always judge a book by its cover! Many of these resources are jammed with worksheets and games that do not replicate authentic literacy experiences and may not give you the return on investment you expect.

What do authentic literacy activities look like? An article by Duke, Purcell-Gates, Hall, and Tower in *The Reading Teacher* (December 2006/January 2007) offers a definition so we can recognize authentic literacy when we see it. They suggest classroom literacy activities that represent a relevant purpose and utilize text that can be found in the lives of people outside of school. Here is an example of an authentic literacy activity: After closely observing the characteristics of goldfish as part of a science lab, *students* generate questions (based on the teacher's explicit minilesson of different types of questions). The students

are then given time to search for answers in informational texts and on the Internet. Next, they return to the whole group to discuss and compare their information. Contrast this activity to one that is much less authentic: Students are directed to vocabulary words on the board, asked to write the words in their notebooks, and then look up the definition of each word in the glossary of their science textbook. Next, the students write the definitions in their notebook and turn in their papers at the end of class for grading. This is not a literacy activity we would find in the world beyond school.

It is recognized that some instructional activities are going to be for school purposes only because they are designed to assist in the explicit teaching of reading and writing. If the activities are too contrived, however, and students do not see them in use beyond the reading lesson, it makes the meaning and relevance of the learning less clear. If our goal is to teach for the transfer of the comprehension strategies and skills, we need to think carefully about how closely the instructional activities we use during a lesson and those that we assign for independent practice after the lesson reflect real-life purposes.

KEY TERMINOLOGY

Transfer: Broadly defined, transfer refers to the degree to which prior learning affects new learning or performance. A rich repertoire of teaching practices is necessary to facilitate transfer.

Research on the Transfer of Learning

Arguably, the transfer of learning is the ultimate goal of education. The most important skills, knowledge, attitudes, and understandings that students acquire through schooling are relevant because they have value and application in later times and in different circumstances. One of the most basic expectations of an educational school system is to ensure all students are literate so they are able to fully participate in our highly interactive, information society. One of the foundations of this book was to focus on the children whose transfer of learning, even after having four to six years of reading instruction, was negative (the learning from one context interferes in another) or was simply not achieved.

What Is Transfer?

As different theories of learning emerge, beliefs about the phenomenon of transfer reflect changes in the findings. Bigge and Shermis (1999) review several of the theories of learning that have most significantly influenced American education. For example, until the end of the nineteenth century, formal education was dominated by the doctrine of *mental discipline.* Those who subscribe to a conception of learning as a mental discipline generally believe the mind lies dormant until it is exercised. Schoolroom atmospheres under this theory of

learning are recognized by an emphasis on memorization, lecture as a primary method of instruction, little connection between subjects, and challenging subject matter with long, difficult assignments. This theory adheres to the belief that transfer occurs automatically after content is covered because the mind has been disciplined. Wouldn't it be nice if it were that easy?

Perkins and Salomon (1988) call the expectation that transfer will automatically occur the "Bo Peep" theory of transfer: "Let them alone and they'll come home, wagging their tails behind them." Considerable research and everyday experience testify that it is inordinately optimistic to assume that transfer will take care of itself simply because material was covered or because instruction occurred. When conditions for transfer are met by chance, transfer may occur and " . . . the sheep come home by themselves. Otherwise, the sheep get lost" (Perkins & Salomon, p. 28).

B. F. Skinner's research proposed another theory of learning. He maintained behavior is learned through operant conditioning—response to (positive and negative) reinforcers—and thus, to Skinner's way of thinking, one's *repertoire* of conditioned operants is the basis for the transfer of one's learning. Skinner's theory requires teachers to develop a schedule of repeated reinforcements in order to maintain learning.

Newer theorists (cognitive interactionists) believe people interpret, not merely respond to stimuli . . . and that one's intentions and purposes motivate one's behavior (Bigge & Shermis, 1999, p. 230). In this view, learning is considered an insightful change in knowledge, skills, attitudes, values, and expectations, acquired through self-activated interactions. This theory of learning maintains that in order for learning to occur, what one is doing must be accompanied by either actual or modeled realization of the consequences. When transfer of learning occurs, it is evident in the form of the meanings, expectations, generalizations, concepts, or insights that were developed in one learning situation being employed in another.

A Closer Look at Transfer Theory

When discussing transfer, Perkins and Salomon (1988) talk about an individual's learning traveling to a new context in terms of "near and far" transfer. When problems and tasks are so much alike that the transfer of learning occurs fairly readily, it is considered *near transfer.* For example, the skills of driving a car quickly transfer to driving an unfamiliar truck. *Far transfer* refers to the attempt to transfer learning from one context to another when the sense of connection between the two learning situations requires deeper thinking, knowledge, and careful analysis. An example here may be using one's knowledge of how electrical systems work to facilitate an understanding of the network of arteries and veins in the circulatory system.

Perkins and Salomon (1988) expanded the "near and far" theory of transfer giving it more relevance to teaching. They apply near and far transfer to what they call a "low-road/high-road" model. "*Low-road transfer* reflects the automatic triggering of well-practiced routines in circumstances where there are considerable perceptual similarities to the original learning" (p. 25). In the example mentioned

above, there is a great deal of resemblance between car and truck cabs so it would be considered an example of low-road transfer. To accomplish low-road transfer, a great deal of practice is necessary. Shoe tying, keyboarding, reciting sight words, or basic arithmetic facts are examples of low-road transfer tasks. A high level of automaticity (fluent processing) can be achieved with each of these tasks that is very useful. Thus, the closer literacy activities in school resemble the literacy expectations students will encounter outside of school, the probability that the school learning will transfer is increased.

High-road transfer is very different. High-road transfer depends on deliberate, mindful abstraction of skill or knowledge from one context for application to another. Such transfer is not generally spontaneous. It demands time and mental effort. High-road transfer always involves reflective thought in abstracting from one context and seeking connections with others (Perkins & Salomon, 1998, pp. 25–26).

Transfer is typically not as problematic in schooling when low-road transfer is involved. An illustration of low-road transfer in learning to read is to learn to decode words with automaticity. We see a lot of low-road transfer expectations in multiple choice tests and workbook tasks. A student may easily complete a worksheet matching vocabulary words in one column to definitions in another, but this same student may have difficulty comprehending the vocabulary in the context of his or her textbook where high-road transfer is needed.

Carefully planning our reading lessons to support the transfer of learning is especially important if we are going to reach our struggling readers. "Where transfer is typically more problematic is in the higher skills of *reading comprehension* [italics added], composition, math problem solving. . . . Furthermore, transfer is usually poorest with students who need it the most—with learning disabled students in the case of reading strategies" (Bereiter, 1995, pp. 26–28). This book supports teachers' ability to help struggling readers achieve the high-road transfer necessary in comprehension through (1) a gradual release lesson design (Chapter 2), (2) deep instruction in a few powerful reading strategies essential to comprehension, and (3) instructional activities that help illuminate how those strategies work to support comprehension.

Summary of Reading Comprehension Instruction

"Despite the significant body of research in the 1980s suggesting the effectiveness of strategy instruction, especially for low-achieving readers, strategy instruction has not been implemented in many American classrooms" (Dole, 2000, p. 62). Many reading programs still advocate teaching discrete skills apart from the coherent strategies that students need to become strategic readers. In planning a lesson, it is important to select instructional activities that clearly show students how reading strategies help them better understand text rather than activities that may overshadow the lesson point. It is too easy for struggling readers to miss the purpose with activities that do not closely represent the expected learning or do not represent authentic literacy.

Significant research maintains that the transfer of learning occurs when there is an understanding of the principles or generalizations of the learning

task—in other words, the statements of relationships that represent many problems or experiences (Bigge & Shermis, 1999; Bransford, Brown, & Cocking, 2000; McKeough, Lupart, & Marini, 1995). When comprehension skills are bundled into broad strategies and deliberately mediated through instruction, across a variety of texts, we can do more to facilitate the high-road transfer of reading comprehension for those students who are struggling to make meaning of what they read. Four major comprehension strategies—*summarizing, creating meaningful connections, self-regulating,* and *inferring*—give purpose and relevance to the skills that support them and allow teachers and students to focus deeply on them in instruction over time. When students understand these broad strategies, the transfer of learning is more apt to occur.

The significance of teaching to the ideas in this book is just beginning to be demonstrated in the success of the readers whose teachers are using the ideas and instructional practices as presented. Chapter 2 now outlines a Gradual Release Lesson Design that is an important component of moving theory to practice.