CHAPTER TWO

The Reading Apprenticeship Framework

> At the beginning of the year, a lot of students didn't understand. "Why are we doing all this reading stuff in science? I don't get it. It's science. It's not reading." And I tried to explain to them, "Well, reading is the most important thing you can do, no matter what subject area it is. If you can't read and understand, you're going to struggle."
>
> —Heather Howlett, grade 8 science teacher

THE CONCEPTIONS educators hold about the nature of reading naturally shape their approaches to helping students improve their reading abilities. As we noted in Chapter One, some current approaches to supporting students' reading improvement address word-level reading problems as a precondition for working on advanced literacy proficiencies. The Reading Apprenticeship approach takes a different route toward building high-level literacy because our understanding of the nature of reading and the capacity of adolescent and adult learners is different. For example, the students in Heather Howlett's science classes will learn academic reading along with science precisely because that is the most powerful way to learn.

We first present a brief summary of what we have learned about reading from existing research and our own observations and studies.

What Is Reading?

Reading is not just a basic skill. Many people think of reading as a skill that is taught once and for all in the first few years of school. In this view of reading, the credit (or blame) for students' reading ability goes to primary grade teachers, and subsequent teachers or college instructors need teach only new vocabulary and concepts relevant to new content. Seen this way, reading is a simple process: readers decode (figure out how to pronounce) each word in a text and then automatically comprehend the meaning of the words, as they do with their everyday spoken language.

This is not our understanding of reading.

About Reading

The need to continue to teach reading as students move up the grade levels and encounter increasingly complex academic material and tasks is now widely recognized. Box 2.1 lists important understandings *about* reading that are described in the sections that follow.

BOX 2.1

About Reading

Students often confuse reading with saying the words on a page. Reading is actually a complex problem-solving process that readers can learn. The following characteristics of reading are described in this section:

- Reading is a complex process.
- Reading is problem solving.
- Fluent reading is not the same as decoding.
- Reading proficiency varies with situation and experience.
- Proficient readers share some key characteristics.

Reading Is a Complex Process

Think for a moment about the last thing you read. A student essay? A school bulletin? A newspaper analysis of rising conflict in another part of the world? A report on water quality in your community? A novel? If you could recapture your mental processing, you would notice that you read with reference to a particular world of knowledge and experience related to the text. The text evoked voices, memories, knowledge, and experiences from other times and places—some long dormant, some more immediate. If you were reading complex text about complex ideas or an unfamiliar type of text, you were working to understand it. Your reading was most likely characterized by many false starts and much backtracking. You were probably trying to relate it to your existing knowledge and understanding. You might have stumbled over unfamiliar words and found yourself trying to interpret them from the context. And you might have found yourself having an internal conversation with the author, silently agreeing or disagreeing with what you read.

As experienced readers read, they begin to generate a mental representation, or gist, of the text, which serves as an evolving framework for understanding subsequent parts of the text. As they read further, they test this evolving

meaning and monitor their understanding, paying attention to inconsistencies that arise as they interact with the text. If they notice that they are losing the meaning as they read, they draw on a variety of strategies to readjust their understandings. They come to texts with purposes that guide their reading, taking a stance toward the text and responding to the ideas that take shape in the conversation between the text and the self.[1]

While reading a newspaper analysis of global hostilities, for example, you may silently argue with its presentation of "facts," question the assertions of the writer, and find yourself revisiting heated debates with friends over U.S. foreign policy. You may picture events televised during earlier wars. Lost in your recollections, you may find that even though your eyes have scanned several paragraphs, you have taken nothing in, so you reread these passages, this time focusing on analysis.

Reading Is Problem Solving

Reading is not a straightforward process of lifting the words off the page. It is a complex process of problem solving in which the reader works to make sense of a text not just from the words and sentences on the page but also from the ideas, memories, and knowledge evoked by those words and sentences. Although at first glance reading may seem to be passive, solitary, and simple, it is in truth active, populated by a rich mix of voices and views—those of the author, of the reader, and of others the reader has heard, read about, and otherwise encountered throughout life.

Fluent Reading Is Not the Same as Decoding

Skillful reading does require readers to carry out certain tasks in a fairly automatic manner. Decoding skills—quick word recognition and ready knowledge of relevant vocabulary, for example—are important to successful reading. However, they are by no means sufficient, especially when texts are complex or otherwise challenging.

Yet many discussions about struggling readers confuse decoding with fluency. Fluency derives from the reader's ability not just to decode or identify individual words but also to quickly process larger language units.[2] In our inquiries into reading—our own and that of our students—we have seen that fluency, like other dimensions of reading, varies according to the text at hand. When readers are unfamiliar with the particular language structures and features of a text, their language-processing ability breaks down. This means, for example, that teachers cannot assume that students who fluently read narrative or literary texts will be equally fluent with informational texts or primary source documents.

Fluency begins to develop when students have frequent opportunities to read texts that are accessible for them because the vocabulary, the concepts, or both are reasonably familiar. English learners rapidly gain new English vocabulary when reading about familiar situations in the new language. Similarly, readers with dyslexia can tackle complex texts about topics in which they are avidly interested and about which they are knowledgeable. Multiple rereadings of more difficult, less accessible texts help broaden a reader's fluency—as can, perhaps surprisingly, slowing down by chunking a text into smaller units. Of even more importance, fluency grows as readers have opportunities, support, and encouragement to read a wide range of text types about a wide range of topics.

Reading Proficiency Varies with Situation and Experience

Literacy practices—how one engages with text, the type of texts read, the outcomes expected—are shaped by social purposes. As we move from one social situation to another, we learn varied ways of reading and distinct literacy practices linked to specific social activities. Moreover, our experiences vary from one person to another. A person who understands one type of text is not necessarily proficient at reading all types. An experienced reader of mathematical proofs may be perplexed when asked to make sense of a metaphor in a poem. A nursing student may be able to decipher the meanings conveyed by complex anatomical diagrams but feel completely at sea when trying to read a legal brief. A good reader of a motorcycle repair manual can make sense of directions that might stump an English literature professor, but she may be unable to comprehend her son's chemistry text. And a chemistry teacher may feel completely insecure when trying to understand some of the primary sources on a history colleague's course reading list.

In other words, reading is influenced by situational factors, among them the experiences readers have had with particular kinds of texts and reading for particular purposes. And just as so-called good or proficient readers do not necessarily read all texts with equal ease or success, a so-called poor or struggling reader will not necessarily have a hard time with all texts. That said, researchers do know some things about those readers who are more consistently effective across a broad range of texts and text types.

Proficient Readers Share Some Key Characteristics

Different reading researchers emphasize different characteristics of good or proficient readers. However, widespread agreement has emerged in the form of a set of key habits (see Box 2.2).[3]

BOX 2.2

Good Readers Are . . .

The following key habits of good readers are widely recognized by literacy researchers.

Good readers are

- Mentally engaged
- Motivated to read and to learn
- Persistent in the face of challenge
- Socially active around reading tasks
- Strategic in monitoring the interactive processes that assist comprehension:
  - Setting goals that shape their reading processes
  - Monitoring their emerging understanding of texts
  - Reasoning with texts in valued and discipline-specific ways
  - Coordinating a variety of comprehension strategies to control the reading process

Social Support for Learning

Our apprenticeship approach to teaching reading in subject area classes is grounded in our view of learning as a social-cognitive interactive process. In this view, which is based in the work of Russian psychologist L. S. Vygotsky, cognitive development is seen as "socially mediated"—that is to say, people learn by participating in activities with "more competent others" who provide support for the parts of the task that they cannot yet do by themselves. These more competent others—parents, siblings, peers, and teachers, for example—gauge their support of the learner's participation, encouraging the learner to take on more of the task over time. In doing this—often unconsciously or spontaneously—these guides help learners carry out valued activities (talking, cooking, playing ball, reading) with increasing independence over time. ("Scaffolding" is a term often applied to this careful gauging of "enough" support, but not too much, at the "right" time, but for not too long.)

The learning environment created by these more knowledgeable others in collaboration with learners during activities like reading or puzzle solving both supports learners and challenges them to grow. Learners begin to internalize and appropriate (make their own) the varied dimensions of the activity: for instance, its goals and functions, the actions necessary to carry it out, and the kinds of cultural tools necessary or fitting to the task. Through this social

learning process, learners' cognitive and affective structures—the ways in which learners think and value tasks—are shaped.[4]

Cognitive Apprenticeships

This view of socially mediated learning applies not only to activities with observable components, such as changing bicycle tires, knitting, or skating. It applies equally, and significantly, to activities that are largely cognitive, taking place inside the mind and hidden from view. Researchers working in a social-cognitive tradition have described a variety of cognitive apprenticeships, in which the mental activities characteristic of certain kinds of cognitive tasks—such as computation, written composition, interpreting texts, and the like—are internalized and appropriated by learners through social supports of various kinds.[5] Learning to read academically complex material is yet another task that requires a cognitive apprenticeship.

Reading Apprenticeships

One literacy educator describes the idea of the cognitive apprenticeship in reading by comparing the process of learning to read with that of learning to ride a bike. In both cases a more proficient other is present to support the beginner, engaging the beginner in the activity and calling attention to often overlooked or hidden strategies.[6] From the beginning, reading apprentices must be engaged in the whole process of problem solving to make sense of written texts, even if they are initially unable to carry out on their own all the individual strategies and subtasks that go into successful reading. The hidden, cognitive dimensions in particular must be drawn out and made visible to the learner.[7] For students encountering challenging academic materials and tasks, being shown what goes on behind the curtain of expert reading is especially powerful in helping them gain mastery.

Demystifying Reading: Making the Invisible Visible

If students are to employ increasingly sophisticated ways of thinking and of solving a variety of cognitive problems, they need to interact with more knowledgeable others from whom they can learn how to carry out these complex activities. Much of what happens with texts in classrooms gives students the mistaken impression that reading comprehension happens by magic. To begin to build a repertoire of activities for reading comprehension, students need to have the reading process demystified. They need to see what happens inside

the mind of a more proficient reader, someone who is willing to make the invisible visible by externalizing his or her mental activity.

Text-Based Discussion: Collaborative Meaning Making

Making the invisible processes of strategic sense-making visible to the learner must take place during reading itself. For students to approach reading expecting to comprehend what they read, and so to work to comprehend texts as necessary, they must experience reading as an inquiry into meaning and a purposeful engagement with ideas. Very little authentic discussion takes place in typical classrooms, yet for all students and particularly for English learners, talking with others is a powerful way to work out one's ideas and articulate them.[8] Text-based discussion helps readers clarify what seems clouded as well as critically question the ideas in a text. In discussions among readers, different viewpoints arise, and the diverse resources that exist among different students can help them in tackling a problem or engaging a set of ideas. To build a repertoire of text-based problem-solving strategies and stamina for thinking deeply about the meaning of what they read, students need abundant experiences of working to comprehend text in the company of others. They need ongoing opportunities to consider and reconsider—through text-based discussion—what texts may mean and how they know what they mean.[9]

Developing Engaged, Strategic, and Independent Readers

In short, our approach to teaching literacy skills is based on the idea that the complex habits and activities of skillful academic readers can be taught. But we do not believe they can be taught by a transmission approach—in which students are shown strategies, asked to practice them, and then expected to be able to use them on their own. Rather, we see the kind of teaching and learning environment that can develop students' confidence and competence as readers of various kinds of challenging texts as one that requires the interaction of students and teachers in multiple dimensions of classroom life. It is the orchestration of this interactive teaching and learning environment in classrooms that we call the Reading Apprenticeship approach to developing strategic readers.

In the rest of this chapter we briefly present the multiple dimensions of classroom teaching and learning that make up the Reading Apprenticeship instructional framework, giving an overview of students' learning opportunities in Reading Apprenticeship classrooms.

Dimensions of the Reading Apprenticeship Classroom and Framework

The following model describes the four key dimensions of classroom life that are necessary to support reading development:

- *Social Dimension:* Community building in the classroom, including recognizing the resources brought by each member and developing a safe environment for students to be open about their reading difficulties
- *Personal Dimension:* Developing students' identities and self-awareness as readers, as well as their purposes for reading and goals for reading improvement
- *Cognitive Dimension:* Developing readers' mental processes, including their problem-solving strategies
- *Knowledge-Building Dimension:* Identifying and expanding the kinds of knowledge that readers bring to a text and further develop through interaction with that text

These dimensions exist in the context of *extensive reading* and share the reading practice of internal and external *metacognitive conversation* (see Box 2.3).

Extensive Reading as the Context for Reading Apprenticeship

Surrounding the social, personal, cognitive, and knowledge-building dimensions of classroom life is reading itself. Teachers extend students' reading experiences and opportunities, making it a key enterprise of their instruction to talk together about making meaning with academic materials. When reading and collaborative work with texts becomes a key part of academic learning in the classroom, teachers provide support for students to grow as readers. Texts and talk about texts infuse the learning that students engage in and provide the context for their ongoing reading apprenticeship. Providing more focus on reading and talk about reading during classroom lessons gives teachers the opportunity to mentor students in the reasoning and problem-solving skills they need to master. More reading, more text-focused discussion, and more talk about reading and problem-solving processes—these distinguish Reading Apprenticeship classrooms from content area classes in which students are expected, but not taught, to handle complex reading tasks.

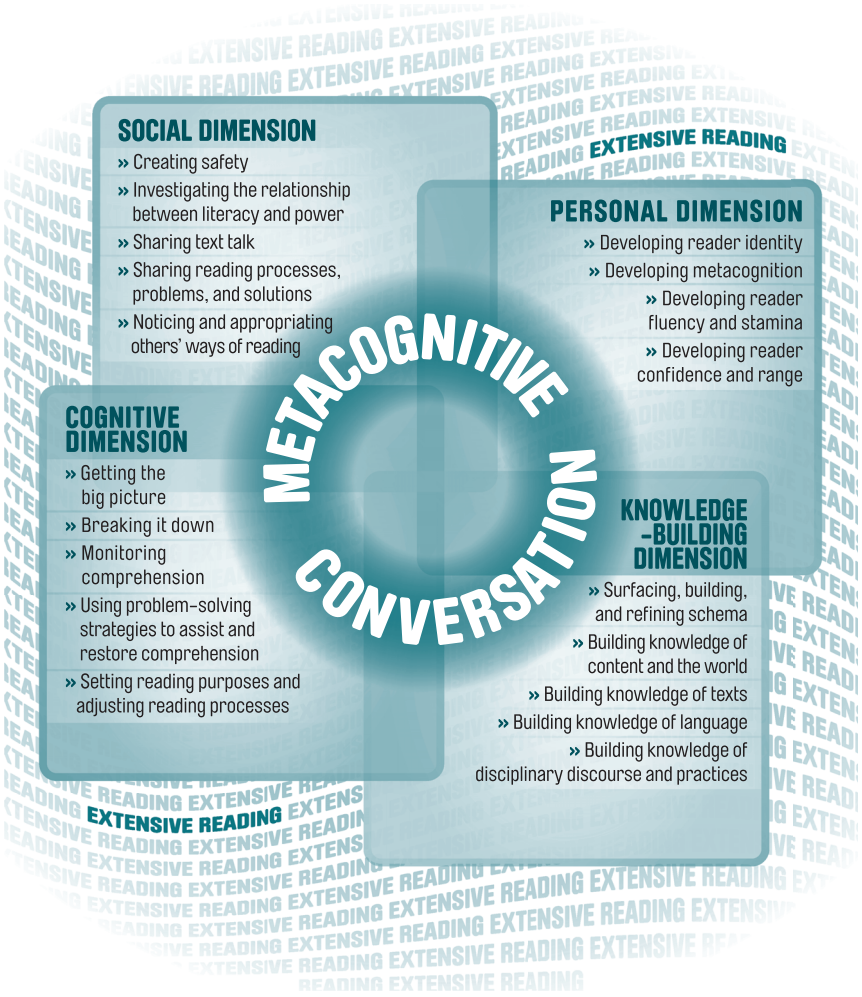
Metacognitive Conversation at the Center

At the center of the Reading Apprenticeship approach, and linking the four dimensions of classroom life, is an ongoing conversation in which teacher

BOX 2.3

The Reading Apprenticeship® Framework

These four overlapping and interacting dimensions of classroom life exist in a context of extensive reading and are linked by metacognitive conversation, both internal and external.



and students think about and discuss their *personal* relationships to reading, the *social* environment and resources of the classroom, their *cognitive* activity, and the kinds of *knowledge* required to make sense of text. This metacognitive conversation is carried on both internally, as teacher and students individually read and consider their own mental processes, and externally, as they talk

about their reading processes, strategies, knowledge resources, and motivations and their interactions with and affective responses to texts.

Metacognition, simply put, is thinking about thinking. As one researcher defines it, "Metacognition refers to one's knowledge concerning one's own cognitive process and products or anything related to them."[10] In metacognitive conversation, then, participants become consciously aware of their mental activity and are able to describe it and discuss it with others. Such conversation enables teachers to make their invisible cognitive activity visible and enables teachers and students to reflectively analyze and assess the impact of their thinking processes. A great deal of research in the past several decades has identified metacognition as key to deep learning and flexible use of knowledge and skills.[11]

Through metacognition, apprentice readers begin to become aware of their reading processes and, indeed, that there *are* reading processes. Through many means—class discussions between teachers and students, small group conversations, written private reflections and logs, personal letters to the teacher or even to authors or characters in books—students can begin to know, use, and further develop their own minds.

Routine metacognitive conversation supports students, including English learners and students with learning differences, to develop greater proficiency in all four of the language domains: *reading, writing, speaking,* and *listening.* Students read complex texts with instructional support accompanied by ample discussion to share their thinking and problem solving and to hear the thinking and problem solving of others. They write to describe their thinking processes, to interact with texts, and to reflect on their learning.

In metacognitive conversation, students build vocabulary by using the academic language of the text as they work collaboratively with their peers to solve comprehension difficulties. They listen to and appropriate the language of their teacher and peers through frequent peer, small group, and class discussion. Students are supported to learn academic discourse, using conventions of civil exchange and academic language to respond to the ideas of their classmates.

Metacognitive conversation naturally spills into collaborative meaning making and text-based discussion as students grapple with complex academic texts. But it is central to Reading Apprenticeship that the discussion is always metacognitive—a conversation about not only *what texts mean* but also *how you know* what they mean.

Such conversations and reflections, if they become routine, offer students ongoing opportunities to consider what they are doing as they read—how they are trying to make sense of texts and how well their strategies are working

for them. Internal and external conversations about reading processes and the relationships they make possible between and among teachers and students are key to the Reading Apprenticeship approach.

Each dimension of classroom life—the social, personal, cognitive, and knowledge-building—has its own metacognitive component, as described in the following sections.

The Social Dimension

Establishing a Reading Apprenticeship classroom begins with the work of nurturing a social environment in which students can begin to reveal their understandings and their struggles as well as to see other students, and their teacher, as potential resources for learning.

Creating Safety

To begin developing the social dimension of the classroom, teachers work with students to create a sense that they are part of a safe community of readers. Developing this sense of safety is fundamental to the activity of investigating reading. To help students become more active and strategic readers, we need to hear from the students themselves about what is going on in their minds while they are reading. Therefore, they must feel comfortable expressing points of confusion, disagreement, and even disengagement with texts. They need to feel safe enough to talk about where they got lost in a text, what was confusing, what they ordinarily do when they have these kinds of comprehension problems, and how well these strategies work for them.

Some students may be embarrassed by reading comprehension difficulties, believing these difficulties mean they are not as skilled at reading as they should be. Making it safe for students to discuss reading difficulties mitigates students' potential embarrassment. The following classroom activities help establish a safe culture for students to take on the role of reading apprentices:

- Discuss what makes it safe or unsafe for students to ask questions or show their confusion in class.
- Agree on classroom rules for discussion so that all students can share their ideas and confusions without being made to feel stupid.
- Discuss what makes it safe or unsafe for students to engage in classroom learning.
- Agree on classroom norms that allow all students to engage in learning without being made to feel uncool.

Investigating the Relationship Between Literacy and Power

Motivation to read and to work on improving reading is affected by myriad factors, including the ways instruction builds on learners' out-of-school identities and literacies and leverages their interests and desires to learn, do, and communicate. Students' understanding of the likelihood of success and of learning itself mediates how much effort they will expend on learning tasks—that is, it influences their motivation. Motivation is also intimately related to students' cultural and peer group identity as well as their prior experiences in school.[12]

The degree to which students see doing well academically as a means of gaining status with their peers can vary. For some students, there may be a stigma attached to reading better than others in their social group. For others, school uses of literacy seem far away from the literacy practices they value. Students who are underprepared academically for the challenge of academic literacy are often perceived as resistant to learning when they are actually aspiring to achieve. For many students, experiences in academic settings have not offered the kinds of learning opportunities they need to see how purposeful engagement with academic literacy may affect their future ambitions. Engaging students in asking questions about reading (and literacy) and its relationship to academic, economic, political, and cultural power has the potential to reframe reading as a more valued activity. The following classroom activities help position reading as a universal value:

- Investigate and talk about the people who read in our society, what they read, why they read, and how reading affects their lives.
- Investigate and talk about the people who do not read in our society and how not reading affects their lives.
- Read and talk about the role played by lack of literacy in the historical disenfranchisement of particular groups of people in society.
- Talk about the relationships between literacy and power of various kinds, including academic, economic, political, and cultural.

Sharing Text Talk

Particularly when students resist engagement in reading because they have devalued it, have had little experience reading, or are embarrassed by their relative reading competence, sharing books and other texts on topics that appeal to young people is an important way of generating interest in reading. Intrinsic motivation to read can flourish in a classroom where everyone has a chance to talk about and hear about each other's interesting or important reading experiences; for example:

- Share the texts that teachers and classmates have found exciting, fun, interesting, or important.
- Share the ways in which teachers and classmates choose books they will both enjoy and be able to finish as recreational reading.
- Share teachers' and classmates' responses to the ideas, events, and language of texts.

Sharing Reading Processes, Problems, and Solutions

Teachers and students must build a sense of collaborative and respectful inquiry into each other's reading processes. This is key to establishing the conditions for successful reading apprenticeships. Once students are safe to engage in classroom reading activities and share their reading processes and difficulties, the classroom community of readers can offer its members crucial resources in the diversity and breadth of interpretations, experiences, and perspectives that different readers bring to different texts. Activities in which students have access to a variety of social resources for dealing with reading comprehension problems are another way to establish and maintain the social dimension of a Reading Apprenticeship classroom; for example:

- Talk about what is confusing in texts.
- Share how teachers and students deal with comprehension problems as they come up in class texts.
- Participate in whole- or small-group problem-solving discussions to make sense of difficult texts.

Noticing and Appropriating Others' Ways of Reading

Students possess a variety of strengths, including diverse background knowledge and experiences. Each student can have times when he or she becomes the more knowledgeable other, helping peers gain comprehension of particular texts and acquire strategies and knowledge for the comprehension of a range of texts.

Teachers act as expert resources for reading strategies, disciplinary reasoning, relevant background knowledge, and experience with particular kinds of texts and how they work. In a classroom environment where sharing one's reading processes, comprehension difficulties, and attempts to solve comprehension problems is the norm, teachers have many opportunities to share their expertise. They also can draw students' attention to the fact that different readers in the classroom bring different valuable resources that influence their interpretations of texts. The point of such activities is for students to notice and

appropriate successful ways of reading and solving problems of reading comprehension; for example:

- Notice the different kinds of background knowledge and experience different readers (teachers and classmates) bring to texts and how that affects the way they interpret what they read.
- Notice the ways different readers think aloud and respond to texts as they work to make sense of them.
- Notice the different reading strategies different readers use to make sense of texts.
- Try out the different strategies and approaches other readers use to make sense of texts.

The Personal Dimension

The personal dimension of a Reading Apprenticeship classroom focuses on developing individual students' relationships to reading. Classroom activities support students in developing increased awareness of themselves as readers, inviting them to discover and refine their own goals and motivations, likes and dislikes, and hopes and potential growth in relationship to reading. This work develops within and in turn adds to the development of the social context of the classroom. As individual students gain a sense of themselves as readers, they add to the classroom community their descriptions of their varied reading processes, their responses to texts, and their questions and interpretations, all of which provide rich content for classroom discussions.

Developing Reader Identity

The activity of reading—the ability to use a variety of metacognitive and cognitive strategies to make sense of texts—is closely tied to the will to read.[13] When students feel they are not good readers, frustration, embarrassment, or fear of failure can prevent them from engaging in reading. Without confidence in themselves as readers, students often disengage from any serious attempts to improve their reading.

Learning to independently read unfamiliar types of texts and complex texts is hard work. Unless students begin to see reading as related to their personal interests and goals and as something they can improve, they are unlikely to expend the necessary effort. For poor achievers to become more motivated and persistent, the key is seeing that their effort really does lead to success. We have found that when we can convincingly frame the hard work of improving reading as an avenue toward increased individual autonomy and control, as well as

toward an expanded repertoire of future life options, we have won more than half the battle.

In developing the personal dimension of a Reading Apprenticeship classroom, teachers and students work together to develop new identities as readers, awareness of their own reading processes, willing persistence in the hard work of building stronger reading skills, and increased confidence for tackling new and unfamiliar kinds of texts.

Reading researchers have found that having a sense of who one is as a reader and learner is an important aspect of motivation.[14] Especially for students who think of themselves as nonreaders or poor readers, developing a sense of reader identity is crucial. Teachers can create classroom routines or periodic activities that help students see themselves as readers, come to know what texts they like and don't like, identify where their strengths and weaknesses as readers lie, and articulate and monitor their own goals as developing readers. The following activities can help students see themselves as readers:

- Write and talk with others about previous reading experiences.
- Write and talk with others about reading habits, likes, and dislikes.
- Write and talk with others about reasons for reading.
- Set and periodically check in on goals for personal reading development.

Developing Metacognition

Gaining metacognitive awareness is a necessary step to gaining control of one's mental activity. Consciousness of their own thinking processes allows learners to "reflectively turn around on their own thought and action and analyze how and why their thinking achieved certain ends or failed to achieve others."[15] Moreover, knowledge of one's own thinking is like other kinds of knowledge in that it grows through experience (that is, through the metacognitive activity itself) and becomes more automatic with practice.[16]

Students find becoming conscious of their mental processes unfamiliar yet often intriguing. Here are examples of classroom activities that assist students in thinking about their thinking:

- Notice what is happening in your mind in a variety of everyday situations.
- Identify various thinking processes you engage in, in a variety of everyday situations.
- Notice where your attention is when you read.
- Identify all the different processes going on while you read.
- Choose what thinking activities to engage in; direct and control your reading processes accordingly.

Developing Reader Fluency and Stamina

One of the paradoxes that struggling or disengaged readers face is that in order to become more confident readers and to enjoy reading more, they need to become more fluent readers. Yet it is difficult to develop fluency without feeling confident and interested in reading. Our colleagues in secondary and college classrooms have developed a variety of ways of approaching this very difficult area:

- Demonstrate that all readers, including the teacher, are developing readers and that everyone has room to grow during a lifetime of reading.
- Identify the role that effort plays in the growth of reading comprehension over time; notice that effort pays off in becoming a stronger reader.
- Notice and celebrate progress as a developing reader; increase patience with yourself as a reader.
- Persist in reading even when you are somewhat confused or bored with a text.
- Build stamina for reading longer texts and for longer periods of time.

Develop Reader Confidence and Range

Another paradox that teachers face in developing students' personal relationships to reading is that readers who do not feel confident about their abilities are less likely to take the risks involved in approaching new kinds of texts. Extending the range of what they can read, however, is an important way that students can build their confidence as readers. Students (and their teachers) are often unaware of just how much reading students do daily. The skills, strategies, and knowledge students bring to making sense of such daily reading as notes from friends or parents, websites, movie and music reviews, song lyrics, and electronics manuals are valuable resources teachers need to invite into the classroom.[17] Convincing students that they have already mastered many text types helps build the kind of confidence they need to approach less familiar texts.

Our colleagues have used a number of activities to build such confidence and expand the range of texts students read:

- Bring the huge variety of different kinds of texts students read in their daily lives into the classroom.
- Investigate how students approach and make sense of these different kinds of texts.
- Connect the competencies that students demonstrate in approaching these texts to the resources students will need to approach unfamiliar texts.

- Have students read, with class support, short pieces representing a wide range of unfamiliar types of texts.
- Draw attention to what students *do* understand when reading unfamiliar texts.

The Cognitive Dimension

The cognitive dimension of the Reading Apprenticeship framework focuses on increasing students' repertoire of mental tools—cognitive strategies for making sense of texts. Through personal and social activities that engage students and teachers in thinking about and sharing their reading processes, the different ways in which readers approach reading begin to emerge. This sets the stage for learning new and perhaps more powerful ways to read. The goal of classroom work in the cognitive dimension is to expand the repertoire of strategies that students can use independently to control their own reading processes and, thereby, their comprehension.

A great deal of research on the reading process has identified and detailed many different cognitive strategies used by good readers to puzzle through a difficult text and to restore comprehension when they lose it. We discuss a number of them in this section. The research shows that these cognitive strategies can be taught to students who do not use them spontaneously on their own.[18] And once students learn these strategies and use them for their own reading purposes, they gain confidence and a sense of control over their reading processes and comprehension. It is important, however, to integrate this strategy teaching and strategy practice into the reading of subject area texts precisely where these strategies will come in handy for students who find such reading difficult. Teaching students a disembodied set of cognitive strategies—separate from the texts that necessitate their use and without support for independent use of these strategies—will not develop students' strength and independence as readers.

Getting the Big Picture

To begin with, strategies such as skimming, scanning, and reading ahead all give students a view of the whole text, even though particular aspects of it may need later clarification. Part of a strategic approach to texts is helping students live with ambiguity and confusion and helping them understand that they do not have to comprehend everything immediately. They can return to work on problem spots in the text, perhaps with some problem-solving strategies, after they get a glimpse of the whole. These strategies enable students to approach texts they may otherwise feel are too difficult to jump into. Teachers

can model and guide students in practicing these ways of approaching difficult texts:

- Identify text types and sources.
- Skim or scan texts.
- Read through ambiguity and confusion.
- Read ahead to see whether the confusion clears up.
- Review the big picture to check comprehension.

Breaking It Down

Researchers have also found that proficient readers break texts into comprehensible units, using a variety of strategies. Breaking down the text is a particularly useful reading strategy when comprehension fails. By rereading the problematic segment of the text, readers can often identify the chunk in need of closer attention and focus on just that part to restore comprehension. Our colleagues have incorporated into their classrooms some of these strategies for breaking down the text:

- Chunk texts into small segments: for example, a section of a textbook, a caption and illustration, or a complex sentence or even a clause.
- Identify or clarify pronoun references and other textual connections that aid comprehension.
- Employ close reading of texts (linking interpretations to specific textual evidence).

Monitoring Comprehension

Reading research has shown that stronger readers monitor their reading, checking in with themselves to see how comprehension is progressing. Weaker readers are frequently unaware of how well they are understanding a text, but numerous intervention studies demonstrate that this critical awareness, and then control, of comprehension can be taught.[19] Here are some activities that teachers can model and guide students to carry out so they can monitor their comprehension while reading difficult texts, becoming increasingly self-regulated readers and learners:

- Check to see whether comprehension is occurring.
- Test understanding by summarizing or paraphrasing the text or by self-questioning.
- Decide whether to clarify any confusions at this time.

Using Problem-Solving Strategies to Assist and Restore Comprehension

Researchers have found that to help developing readers make sense of what they read, it is important to help them maintain their mental engagement with texts while reading.[20] Students' engagement with and comprehension of texts is increased by activities that help them understand that reading is an active, problem-solving process to make meaning. They must draw on all their knowledge and experiences, because a good reader's whole self is involved in reading.

All of the following strategies are used by proficient readers as ways of consolidating and refining their understanding as they read and when comprehension founders:

- Question texts, authors, and yourself about the text.
- "Talk" to the text through marginal annotations.
- Visualize what is described in the text.
- Make meaningful connections between the text and other knowledge, experiences, or texts.
- Reread sections of the text to clear up confusions.
- Summarize, retell, or paraphrase texts or parts of texts.
- Represent concepts and content of texts in graphic form.
- Represent concepts and content of texts through metaphors and analogies.
- Organize and keep track of ideas in a text through graphic organizers, outlines, response logs, and notes.

Setting Reading Purposes and Adjusting Reading Processes

Proficient readers read texts differently depending on their purposes for reading. Purposes drive reading processes. You may blitz through the television guide to find the time of a particular show; you know what you want to watch. On the other hand, if you are undecided, you may look at the offerings on every channel, even consulting the movie summaries and reviews in order to choose what to watch. Similarly, disciplinary perspectives and purposes shape the work readers do with texts.[21] Reading a political speech to analyze uses of rhetorical devices will require different reading and reasoning processes from those used in reading the same speech to decide whether to vote for a candidate.

In the beginning, students will need to consciously set their own purposes for reading particular texts, even when those texts are assigned. Then students can begin to notice, through classroom inquiry and sharing, how purposes affect the ways readers approach particular texts.

Teachers can help students learn to let reading purposes drive their reading processes by modeling, guiding, and giving students the following kinds of practice:

- Set goals or purposes for your reading whenever you approach a text.
- Read the same text for different purposes.
- Notice how reading purposes affect reading processes.
- Vary reading processes depending on the purposes for reading.

In a Reading Apprenticeship classroom, students are engaged not only in practicing a variety of strategies for controlling reading processes and restoring reading comprehension but also in assessing the effects of these strategies on their own reading and reading development. Students share what they are doing to make meaning of texts. They also share how they are doing so, becoming more aware of their own reading strategies and serving as resources to other students in the classroom.

The Knowledge-Building Dimension

Like many other factors in reading, knowledge—whether about the world of ideas in a text, the ways particular texts work, or discipline-specific ways of thinking and using language—supports reading comprehension and also develops as a result of reading.

For students to become proficient at reading to learn, they need to know something about the topics they will encounter in the text if they are to make connections to the ideas and elaborate their prior understandings. For students to access different types of texts, they need to recognize that texts have various and distinctive structures and genres. When encountering the language of texts, students need to know how to read academic versus everyday language and to use the language signposts that direct the reader through the author's ideas. To make sense of disciplinary texts, students also need to know about the customary ways of thinking, and therefore of reading, that constitute the practice of a particular discipline.[22] These different types of knowledge—knowledge about content, about texts, about language, and about disciplinary ways of thinking and communicating—are vital resources supporting comprehension.

Surfacing, Building, and Refining Schema

Research on proficient readers' mental processes has led to some key modern understandings about how the mind works, about how people think, even about what we think with. Studies have demonstrated how readers interact

with texts, bringing their own stores of knowledge into play as they attempt to shape possible text meanings.[23] Readers do not passively absorb information from the text; rather, they actively mobilize their own knowledge structures to make meaning in interaction with the text.

Readers call up whole worlds of knowledge and associations as they read, triggered by particular ideas, words, or situations. These knowledge structures are known as schema. Schema for particular networks of knowledge and information are activated as individuals read and add to their existing schema as they encounter new information.[24] In addition, their existing schema influence the ways they approach and make sense of texts.

Schema—stores of knowledge about texts and about the world—are organized as networks of associations, which can be triggered by a single word. For example, the word "ball" may call up images of baseball diamonds, backstops, and bases, as well as the pitchers, batters, catchers, umps, fielders, and even sports commentators who take part in the game. Innings, errors, random statistics about particular players, and even the smells and sounds of baseball stadiums may quickly and automatically come to mind as such images and ideas flood into consciousness. For another reader, the same word, "ball," may call up competing schema: images of fancy gowns, corsages, tuxedos, limousine rides, and the blushing self-consciousness felt at a first prom. Proficient readers know they must relinquish schema that prove inappropriate as they encounter further information from the text, but less experienced readers will often hold onto inappropriate images that block meaningful connections with the text.

Knowledge can be stored in other ways as well; for example, as grammars for particular kinds of texts. Proficient readers of children's stories will have a story grammar that enables them to predict what will unfold after "Once upon a time."[25] Knowledge can also be stored as a script for an event with a well-known and predictable structure, such as a birthday party or eating in a restaurant.[26] From experience ordering meals, individuals have a script for the routine of getting the host or hostess's attention, being seated and given menus, and so forth. They are therefore not surprised when a person approaches with a small pad of paper and asks, "Have you decided yet?"

In a Reading Apprenticeship classroom, to help students not only to activate appropriate schema for particular texts but also to recognize that texts trigger whole networks of associated knowledge and experiences, teachers use activities such as the following:

- Recognize the different schema that can be triggered by a single text.
- Share the schema individual readers bring to mind while reading a particular text.

- Identify the schema appropriate for making sense of particular texts.
- Relinquish competing but inappropriate schema for particular texts.

Building Knowledge of Content and the World

Many studies have shown that students with prior knowledge of the topics they will encounter in a text comprehend more of the text and also recall more information from it than students who lack this knowledge.[27] Because prior knowledge is such a powerful resource for comprehension, many kinds of pre-reading activities—such as learning experiences to build conceptual understandings, pre-reading guides, and even brief text summaries before students read the text, have been developed as ways to build schema, thereby increasing student comprehension and retention of information. In addition, educators have developed many ways to activate the knowledge students already have about topics they are going to read about. Finally, many studies have shown that in the face of new and competing information, students relinquish their previous conceptions or ideas with great difficulty.[28] Strategies for articulating and challenging misconceptions are important if teachers are to counter the strong but incorrect theories students hold about many topics.

Teachers can use activities like these to prepare students to learn new information:

- Brainstorm and share knowledge or information about the topic.
- Identify conflicting knowledge or information about the topic.
- Imagine yourself in situations similar to those that will be encountered in the text.
- Explore conceptual vocabulary that will be encountered.
- Take positions on a topic before reading about it.
- Evaluate the fit between your prior knowledge or conception of a topic and the ideas in the text.

Building Knowledge of Texts

Knowledge about the ways different kinds of texts are structured and the ways these structures reveal the organization and interweaving of the author's ideas has also been shown to influence comprehension and memory.[29] Proficient readers use their awareness of text structures to understand the key points of a text, and when they report what they recall, their summaries reflect the text organization. Less-experienced readers, apparently unaware of text structures, have difficulty organizing and prioritizing text information. In our work we

often see students who can follow a typical narrative but are bewildered by the text structures in informational text. Yet ample research shows that when students are taught to identify text structures through the use of such supports as graphic organizers or text previewing, their comprehension increases.[30]

Teachers can assist students with activities that focus on texts' underlying structures:

- Identify the ways particular texts are structured.
- Notice patterns in structure across texts of given genres.
- Preview a text to build a schema for it; notice structural features such as headings, subheadings, and illustrations.
- Use text organization and structure to assist in comprehension of particular texts.
- Notice and use the interconnections between visuals and text to build comprehension.
- Use signal words and phrases to aid comprehension and to predict the direction particular texts will take next.

Building Knowledge of Language

Knowledge about language and how it works to inventively convey meaning in everyday and academic discourse is key to unlocking the meaning of texts. Students need to develop both fascination and facility with words, acquiring word-learning strategies they can apply when faced with the variable and rich vocabulary presented in texts. Similarly, they need to develop facility for disentangling the complex sentences and ideas presented in academic texts. Subject area texts often rely on academic discourse, characterized by complex sentences containing multiple embedded clauses, verbs that have been turned into nouns standing for large disciplinary concepts, and Latin- and Greek-derived vocabularies. By engaging students in inquiry into word and sentence construction and meaning, teachers can help develop the metalinguistic awareness and skill that students need to bring to bear in becoming academic code-breakers.[31] The following activities assist all students but are especially valuable for English learners:

- Identify the particular kinds of language used in particular kinds of texts.
- Use contextual clues from the text to define unfamiliar words.
- Recognize when familiar words are used in unfamiliar ways, and use context to understand the new meaning.
- Identify roots, prefixes, and suffixes of Latin- and Greek-derived words often encountered in expository texts.

- Create word families associated with particular ideas or subject areas.
- Break complex sentences into component clauses to identify the ideas and relationships expressed.

Building Knowledge of Disciplinary Discourse and Practices

Recently literacy research has begun to focus on identifying effective ways to integrate knowledge about customary ways of thinking and using language that characterize discourse in particular academic disciplines into literacy and learning in the subject areas.[32]

Students need to understand the specific "habits of mind" characteristic of particular academic disciplines in order to make sense of academic texts and use them to carry out valued inquiry tasks in particular domains.[33] We have observed how important it is for students to know how particular texts are functioning in the world, what enterprise these texts serve, and what social practices the texts are contributing to.

Knowing about topics, text structures, and language alone does not help students who are bewildered by the larger sense of a text and its uses in a disciplinary enterprise. For example, students are often unaware that scientific activity is motivated by the enterprise of explanation or discovery, or that history is an enterprise devoted to interpretation and explanation of events, or that the study of literature can be understood as an aesthetic exploration of the human condition.

Discipline-specific knowledge is related to the more general idea of communicative competence—competence in producing and comprehending particular forms of language, or discourse—that develops in particular social settings. In the past few decades, research in the varied fields of linguistics, social psychology, cognitive science, anthropology, and education has illustrated how proficient readers and writers of particular texts acquire not just the component skills or processes needed to read and write but also the ways of participating in literacy activities valued by particular communities of readers and writers.[34] They learn specific "ways with words"[35] by actively participating in reading or writing in the company, and with the guidance, of more skilled practitioners.

Authors who write within the practice and language conventions of a particular discipline often assume that readers have an appreciation and understanding of that discipline's ways of thinking. Specialized ways of thinking have associated specialized ways of using language, which we might call disciplinary ways with words. In our work with secondary and college teachers, we have been exploring ways to help students build their knowledge of text structures and of the ways with words and ways of thinking that are characteristic of different disciplines. These types of knowledge are particularly important

when educators hope to apprentice student readers to academic reading, yet they have rarely been included in subject area teaching. We believe that teaching students about the text structures of disciplinary text and the disciplinary enterprise these texts mirror will enable students to "crack the codes"[36] of academic texts in order to become more successful and ultimately more independent learners.

Teachers can help students acquire disciplinary and discourse-specific knowledge by making their own disciplinary habits of mind visible to students through thinking aloud and class discussion, helping to demystify the hidden codes—the ways of using language, the conventions of form, and the larger questions and standards of inquiry and evidence—that count in particular disciplines. Moreover, they can engage students in classroom activities such as these:

- Identify the possible purposes that the authors of particular texts may have had in creating these texts.
- Identify the possible audiences that particular texts seem to be addressing.
- Identify the functions that particular texts serve in particular circumstances.
- Explore the large questions, purposes, and habits of mind that characterize specific academic disciplines.
- Inquire into the ways in which texts function in particular disciplines.
- Identify the particular ways of using language associated with particular academic disciplines.
- Use valued reasoning practices of the disciplines to inquire into text meanings.
- Use texts to carry out valued disciplinary inquiries and tasks.

■■■

In the next several chapters, we bring the Reading Apprenticeship approach to life through portraits of classroom practice illustrating extensive reading, metacognitive conversation, and each of the four dimensions. We also present lessons and specific assignments from classrooms of our colleagues in middle school, high school, and community colleges around the country. Because these are real classrooms, their activities resist neat categorization into one or the other of the interacting dimensions of the Reading Apprenticeship approach—though we try, for the sake of exposition, to do so. Nevertheless, the fact that the dimensions overlap in our approach is an important part of the picture we want to illustrate. Areas of classroom life overlap, activities serve multiple purposes, and good teachers are always doing more, as they construct teaching

and learning in the classroom, than may at first be obvious. We hope that what emerges in these portraits of practice is a vision of classrooms in which learners are engaged, motivated, and clearly gaining power, knowledge, and independence as readers.

Notes

1. Alexander, P. A. (1997). Mapping the multidimensional nature of domain learning: The interplay of cognitive, motivational, and strategic forces. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 213– 250). Greenwich, CT: JAI Press.

   Moje, E. B., Dillon, D. R., & O'Brien, D. G. (2000). Re-examining the roles of the learner, the text, and the context in secondary literacy. *Journal of Educational Research, 93,* 165–180.

   Ruddell, R., & Unrau, N. (1994). Reading as a meaning-construction process: The reader, the text, and the teacher. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and process of reading* (pp. 996–1056). Newark, DE: International Reading Association.

   Scribner, S., & Cole, M. (1981). *The psychology of literacy.* Cambridge, MA: Harvard University Press.

   Street, B. (1995). *Social literacies: Critical approaches to literacy in development, ethnography and education.* London: Longman.

2. Kuhn, M. R., Schwanenflugel, P. J., & Meisinger, E. B. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and definitions of fluency. *Reading Research Quarterly, 45*(2), 230–251.

   Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology, 95*(1), 3–21.

   Valencia, S. W., Smith, A. T., Reece, A. M., Li, M., Wixson, K. K., & Newman, H. (2010). Oral reading fluency assessment: Issues of construct, criterion, and consequential validity. *Reading Research Quarterly, 45*(3), 270–291.

3. Guthrie, J. T., & Alvermann, D. E. (1991). *Engaged reading: Processes, practices, and policy implications.* New York: Teachers College Press.

   Paris, S. G. (2005). Reinterpreting the development of reading skills. *Reading Research Quarterly, 40*(2), 184–202.

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

   RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension.* Santa Monica, CA: RAND.

   Rapp, D. N., & van den Broek, P. (2005). Dynamic text comprehension: An integrative view of reading. *Current Directions in Psychological Science, 14*(5), 276–279.

   Schoenbach, R., & Greenleaf, C. (2009). Fostering adolescents' engaged academic literacy. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 98–112). New York: Guilford Press.

4. Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

   Vygotsky, L. S. (1986). *Thought and language* (Rev. ed). A. Kozulin (Trans. & Ed.). Cambridge, MA: MIT Press.

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

Brown, J. S., Collins, A., & Newman, S. (1989). The new cognitive apprenticeship: Teaching the craft of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning and instruction: Essays in honor of Robert Glaser* (pp. 453–494). Hillsdale, NJ: Erlbaum.

John-Steiner, V. (1985). *Notebooks of the mind: Explorations of thinking.* Albuquerque, NM: University of New Mexico Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, MA: Cambridge University Press.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* New York: Oxford University Press.

6. Rose, D. (1995). *Apprenticeship and exploration: A new approach to literacy instruction* (Literacy Research Paper 10). New York: Scholastic.

7. Baker, L. (2008). Metacognition in comprehension instruction: What we've learned since NRP. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction: Research-based best practices* (2nd ed., pp. 65–79). New York: Guilford Press.

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide* (NCEE #2008–4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Kucan, L., & Beck, I. L. (1997). Thinking aloud and reading comprehension research: Inquiry, instruction, and social interaction. *Review of Educational Research, 67*(3), 271–299.

Vacca, R. T. (2002). Making a difference in adolescents' school lives: Visible and invisible aspects of content area reading. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 184–204). Newark, DE: International Reading Association.

8. Atwood, S., Turnbull, W., & Carpentale, J.I.M. (2010). The construction of knowledge in classroom talk. *Journal of the Learning Sciences, 19,* 358–402.

Goatley, V. J., Brock, D. H., & Raphael, T. E. (1995). Diverse learners participating in regular education "book clubs." *Reading Research Quarterly, 30,* 352–380.

Langer, J. (2001). Beating the odds: Teaching middle and high school students to read and write well. *American Educational Research Journal, 38,* 837–880.

Rex, L., & McEachen, D. (1999). If anything is odd, inappropriate, confusing, or boring, it's probably important: The emergence of inclusive academic literacy through English classroom discussion practices. *Research in the Teaching of English, 34,* 65–129.

Walqui, A., & van Lier, L. (2010). *Scaffolding the academic success of adolescent English language learners: A pedagogy of promise.* San Francisco: WestEd.

Wilkinson, I. A., & Son, E. H. (2011). A dialogic turn in research on learning and teaching to comprehend. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research* (Vol. 4, pp. 359–387). New York: Routledge.

9. Applebee, A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal, 40*(3), 685–730.

McConachie, S., Hall, M., Resnick, L., Ravi, A. K., Bill, V. L., Bintz, J., & Taylor, J. A. (2006). Task, text, and talk: Literacy for all subjects. *Educational Leadership, 64*(2), 8–14.

Soter, A. O., Wilkinson, I. A., Murphy, K., Rudge, L., Reninger, K., & Edwards, M. (2008). What the discourse tells us: Talk and indicators of high-level comprehension. *International Journal of Educational Research, 47*(6), 372–391.

10. Flavell, J. H. (1976). Metacognitive dimensions of problem-solving. In L. B. Resnick (Ed.), *The nature of intelligence.* Hillsdale, NJ: Erlbaum.

11. Baker, Metacognition in comprehension instruction (see note 7).

    Baker, L. (1991). Metacognition, reading, and science education. In C. Santa & D. Alvermann (Eds.), *Science learning: Processes and applications* (pp. 2–13). Newark, DE: International Reading Association.

    Cartwright, K. B. (2008). Cognitive flexibility and reading comprehension: Relevance to the future. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction: Research-based best practices* (2nd ed., pp. 50–64). New York: Guilford Press.

    Donovan, S. M., Bransford, J. D., & Pellegrino, J. W. (Eds.). (1999). *How people learn: Bridging research and practice.* Washington, DC: National Research Council.

    Kamil, Borman, Dole, Kral, Salinger, & Torgesen, *Improving adolescent literacy* (see note 7).

    Parris, S., & Block, C. C. (2008). The impact of flexibility on vocabulary and comprehension development. In K. D. Cartwright (Ed.), *Literacy processes: Cognitive flexibility in learning and teaching* (pp. 257–278). New York: Guilford.

12. Benard, B. (2004). *Resiliency: What we have learned.* San Francisco: WestEd.

    Dweck, C., & Molden, D. (2006). Self-theories: Their impact on competence motivation and acquisition. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 122–140). New York: Guilford Press.

    Duym, V. K. (2006). Academic literacy in the English classroom: Helping underprepared and working class students succeed in college. *Teaching English in the Two Year College, 33*(3), 313–315.

    Hall, L. A., Burns, L. D., & Edwards, E. C. (2011). *Empowering struggling readers: Practices for the middle grades.* New York: Guilford Press.

    Harris, A. L. (2011). *Kids don't want to fail: Oppositional culture and the black-white achievement gap.* Cambridge, MA: Harvard University Press.

    Lewis, C., & del Valle, A. (2009). Literacy and identity: Implications for research and practice. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 307–322). New York: Guilford Press.

    Mahiri, J., & Godley, A. (1998). Rewriting identity: Social meanings of literacy and "revisions" of self. *Reading Research Quarterly, 33*(4), 416–433.

    Maloney, W. H. (2003). Connecting the texts of their lives to academic literacy: Creating success for at-risk first-year college students. *Journal of Adolescent & Adult Literacy, 46*(8), 664–673.

    Orellana, M. F., Reynolds, J., Dorner, L., & Meza, M. (2003). In other words: Translating or "para-phrasing" as a family literacy practice in immigrant households. *Reading Research Quarterly, 38*(1), 12–34.

    Smith, M., & Wilhelm, J. (2006). *Going with the flow: How to engage boys (and girls) in their literacy learning*. Portsmouth, NH: Heinemann.

    Tatum, A. W. (2006). Engaging African American males in reading. *Educational Leadership, 63*(5), 44–49.

13. Committee on Increasing High School Students' Engagement and Motivation to Learn, National Research Council. (2004). The nature and conditions of engagement. In *Engaging schools: Fostering high school students' motivation to learn* (pp. 31–59). Washington, DC: National Academies Press.

    Ferguson, R. F. (2008). *Toward excellence with equity: An emerging vision for closing the achievement gap.* Cambridge, MA: Harvard Education Press.

    Guthrie, J. T., Wigfield, A., & Von Secker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology, 92*(2), 331–341.

    Jiménez, R. (1997). The strategic reading abilities and potential of five low-literacy Latina/o readers in middle school. *Reading Research Quarterly, 32,* 224–243.

    Kamil, Borman, Dole, Kral, Salinger, & Torgesen, *Improving adolescent literacy* (see note 7).

    Lee, C. D. (2007). *Culture, literacy, and learning: Blooming in the midst of the whirlwind.* New York: Teachers College Press.

    Litman, C., & Greenleaf, C. (2007). Traveling together over difficult ground: Negotiating success with a profoundly inexperienced reader in an introduction to chemistry class. In K. A. Hinchman & H. Sheridan-Thomas (Eds.), *Best practices in adolescent literacy instruction* (pp. 275–296). New York: Guilford Press.

    Murie, R., Collins, M. R., & Detzner, D. F. (2004). Building academic literacy from student strength: An interdisciplinary life history project. *Journal of Basic Writing, 23*(2), 70–92.

    Smith, M. W., & Wilhelm, J. D. (2002). *Reading don't fix no Chevys: Literacy in the lives of young men.* Portsmouth, NH: Heinemann.

14. Alvermann, D. E. (2001). Reading adolescents' reading identities: Looking back to see ahead. *Journal of Adolescent & Adult Literacy, 44,* 676–690.

    Buley-Meissner, M. L. (1993). Reclaiming personal knowledge: Investigations of identity, difference, and community in college education. *College English, 55*(2), 211–221.

    Christenbury, L., Bomer, R., & Smagorinsky, P. (Eds.). (2009). *Handbook of adolescent literacy research.* New York: Guilford Press.

    Gambrell, L. B., Marinak, B. A., Brooker, H. B., & McCrea-Andrews, H. J. (2011). The importance of independent reading. In S. J. Samuels and A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 143–158). Newark, DE: International Reading Association.

    Greenleaf, C., Schoenbach, R., Cziko, C., & Mueller, F. (2001). Apprenticing adolescent readers to academic literacy. *Harvard Educational Review, 71*(1), 79–129.

    Gutierrez, K. D. (2008). Developing a sociocritical literacy in the Third Space. *Reading Research Quarterly, 43*(2), 148–164.

    Hull, G., & Rose, M. (1989). Rethinking remediation: Toward a social-cognitive understanding of problematic reading and writing. *Written Communication, 8,* 139–154.

    McCarthey, S. J., & Moje, E. (2002). Identity matters. *Reading Research Quarterly, 37*(2), 228–238.

    Moje, E., & Luke, A. (2009). Literacy and identity: Examining the metaphors in history and contemporary research. *Reading Research Quarterly, 44*(4), 415–437.

    Pacheco, M. (2010). English-language learners' reading achievement: Dialectical relationships between policy and practices in meaning-making opportunities. *Reading Research Quarterly, 45*(3), 292–317.

Penrose, A. M. (2002). Academic literacy perceptions and performance: Comparing first-generation and continuing-generation college students. *Research in the Teaching of English, 36*(4), 437–461.

Rose, M. (1989). *Lives on the boundary.* New York: Penguin Books.

Schunk, D. H. (2003). Self-efficacy for reading and writing: Influence of modeling, goal setting, and self-evaluation. *Reading & Writing Quarterly, 19*(2), 159–172.

15. Shulman, L. S. (1986). Just in case: Reflections on learning from experience. In J. Colbert, P. Dresberg, & K. Trimble (Eds.), *The case for education: Contemporary approaches for using case methods* (p. 210). Needham Heights, MA: Allyn & Bacon.

16. Baker, L., & Beall, L. C. (2009). Metacognitive processes and reading comprehension. In S. E. Israel & G. G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 779–812). New York: Routledge.

    Bransford, Brown, & Cocking, *How people learn* (see note 5).

    Flavell, Metacognitive dimensions of problem-solving (see note 10).

    Greenleaf, Schoenbach, Cziko, & Mueller, Apprenticing adolescent readers to academic literacy (see note 14).

    Kingery, E. (2000). Teaching metacognitive strategies to enhance higher level thinking in adolescents. In P. E. Linder, E. G. Sturtevant, W. M. Linek, & J. R. Dugan (Eds.), *Literacy at a new horizon: The twenty-second yearbook* (pp. 74–85). Commerce, TX: College Reading Association.

    Nist, S. L., & Simpson, M. L. (2000). College studying. In M. L. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of Reading Research* (Vol. 3, pp. 403–422). Mahwah, NJ: Erlbaum.

    Pressley, M. (2002). Metacognition and self-regulated comprehension. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 291–309). Newark, DE: International Reading Association.

17. Alvermann, D. (2011). Popular culture and literacy practices. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research* (Vol. 4, pp. 541–560). New York: Routledge.

    Alvermann, D. (Ed.). (2002). *Adolescents and literacies in a digital world.* New York: Lang.

    Cohen, D. J., & Snowden, J. L. (2008). The relations between document familiarity, frequency, and prevalence and document literacy performance among adult readers. *Reading Research Quarterly, 43*(1), 9–26.

    Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by skilled sixth-grade readers to search and locate information on the Internet. *Reading Research Quarterly, 42,* 214–257.

    Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2008). *Handbook of research on new literacies.* New York: Erlbaum.

    Dalton, B., & Rose, D. (2008). Scaffolding digital comprehension. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 347–362). New York: Guilford.

    Gee, J. P. (2008). Games and comprehension: The importance of specialist language. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 309–320). New York: Guilford.

    Hull, G., & Schultz, K. (2001). *School's out: Bridging out-of-school literacies with classroom practice.* New York: Teachers College Press.

Mellard, D., Patterson, M., & Prewett, S. (2007). Reading practices among adult education participants. *Reading Research Quarterly, 42*(2), 188–213.

Xu, S. H. (2008). Rethinking literacy learning and teaching: Intersections of adolescents' in-school and out-of-school literacy practices. In K. A. Hinchman & H. Sheridan-Thomas (Eds.), *Best practices in adolescent literacy instruction* (pp. 39–56). New York: Guilford.

18. Beck, I. L., & McKeown, M. G. (2006). *Improving comprehension with Questioning the Author: A fresh and expanded view of a powerful approach*. New York: Scholastic.

Block, C. C., & Duffy, G. G. (2008). Comprehension strategies and direct explanation of strategies: Where we've been and where we're going. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 19–37). New York: Guilford.

Brown, A. L., Palincsar, A., & Armbruster, B. (1994). Instructing comprehension-fostering activities in interactive learning situations. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 757–787). Newark, DE: International Reading Association.

Conley, M. W. (2008). Cognitive strategy instruction for adolescents: What we know about the promise, what we don't know about the potential. *Harvard Educational Review*, *78*(1), 84–108.

Duke, N. K., Pearson, P. D., Strachan, S. L., & Bilman, A. K. (2011). Essential elements of fostering and teaching reading comprehension. In S. J. Samuels and A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 51–93). Newark, DE: International Reading Association.

Fisher, D., & Frey, N. (2008). Comprehension instruction in action: The secondary classroom. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 258–270). New York: Guilford.

Gavelek, J. F., Raphael, T. E., Biondo, S. M., & Wang, D. (2000). Integrated literacy instruction. In M. L. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 587–608). Mahwah, NJ: Erlbaum.

Palinscar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, *1*(2), 117–175.

Paris, S., Lipson, M., & Wixson, K. (1994). Becoming a strategic reader. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 788–810). Newark, DE: International Reading Association.

Raphael, T. E., Highfield, K., & Au, K. H. (2006). *QAR now: A powerful and practical framework that develops comprehension and higher-level thinking in all students.* New York: Scholastic.

Rueda, R., Velasco, A., & Lim, H. (2008). Comprehension instruction for English learners. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 294–307). New York: Guilford.

19. Baker, Metacognition in comprehension instruction (see note 7).

Garner, R. (1994). Metacognition and executive control. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 715–732). Newark, DE: International Reading Association.

Greenleaf, Schoenbach, Cziko, & Mueller, Apprenticing adolescent readers to academic literacy (see note 14).

Palincsar, A. S., & Brown, A. L. (1989). Instruction for self-regulated reading. In L. B. Resnick & L. E. Klopfer (Eds.), *Toward the thinking curriculum: Current cognitive research* (pp. 19–39). Alexandria, VA: Association for Supervision and Curriculum Development.

Scardamalia, M., & Bereiter, C. (1985). Fostering the development of self-regulation in children's knowledge processing. In S. F. Chipman, J. W. Segal, & R. Glaser (Eds.), *Thinking and learning skills: Research and open questions.* Hillsdale, NJ: Erlbaum.

Schunk, Self-efficacy for reading and writing (see note 14).

20. Baumann, J. F., & Duffy, A. M. (1997). *Engaged reading for pleasure and learning: A report from the National Reading Research Center.* Athens, GA: National Reading Research Center.

    Bristow, P. S. (1985, December). Are poor readers passive readers? Some evidence, possible explanations, and potential solutions. *The Reading Teacher*, 318–325.

    Lent, R. C. (2006). *Engaging adolescent learners: A guide for content-area teachers.* Portsmouth, NH: Heinemann.

    Mathewson, G. (1994). Model of attitude influence upon reading and learning to read. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 1131–1161). Newark, DE: International Reading Association.

    Mellard, Patterson, & Prewett, Reading practices among adult education participants (see note 17).

    Nist & Simpson, College studying (see note 16).

    Wigfield, A., Guthrie, J. T., Perencevich, K. C., Taboada, A., Klauda, S. L., Mcrae, A., & Barbosa, P. (2008). Role of reading engagement in mediating effects of reading comprehension instruction on reading outcomes. *Psychology in the Schools*, *45*(5), 432–445.

21. Bakerman, C. (1985). Physicists reading physics: Schema-laden purposes and purpose-laden schema. *Written Communication, 2*(1), 3–23.

    Blanton, W., Wood, K., & Moorman, G. (1990). The role of purpose in reading instruction. *The Reading Teacher, 43,* 486–493.

    Cohen & Snowden, The relations between document familiarity, frequency, and prevalence and document literacy performance among adult readers (see note 17).

    Darvin, J. (2006). On reading recipes and racing forms—the literacy practices and perceptions of vocational educators. *Journal of Adolescent & Adult Literacy, 50*(1), 10–18.

    Rapp & van den Broek, Dynamic text comprehension (see note 3).

22. Alexander, P. A. (2003). The development of expertise: The journey from acclimation to proficiency. *Educational Researcher, 32*(8), 10–14.

    Brent, D. (2005). Reinventing WAC (again): The first-year seminar and academic literacy. *College Composition and Communication, 57*(2), 253–276.

    Curry, M. J. (2004). Academic literacy for English language learners. *Community College Review, 32*(2), 51–68.

    Heller, R., & Greenleaf, C. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement.* Washington, DC: Alliance for Excellent Education.

    Langer, J. (2011). *Envisioning knowledge: Building literacy in the academic disciplines.* New York: Teachers College Press.

    Lea, M. K., & Street, B. V. (1998). Student writing in higher education: An academic literacies approach. *Studies in Higher Education, 23*(2), 157–172.

    Lee, C. D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy.* New York: Carnegie Corporation of New York.

    Moje, E. (2008). Foregrounding the disciplines in secondary literacy teaching and learning. *Journal of Adolescent and Adult Literacy, 52,* 96–107.

Norris, S. P., & Phillips, L. M. (2003). How literacy in its fundamental sense is central to scientific literacy. *Science Education, 87,* 224–240.

Pearson, P. D., Moje, E. B., & Greenleaf, C. (2010). Literacy and science: Each in the service of the other. *Science, 328,* 459–463.

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review, 78*(1), 40–59.

Yancey, K. B. (2009). The literacy demands of entering the university. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 256–270). New York: Guilford.

23. Anderson, R. (1994). Role of the reader's schema in comprehension, learning, and memory. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 469–482). Newark, DE: International Reading Association.

    Hull, G., & Rose, M. (1990). This wooden shack place: The logic of an unconventional reading. *College Composition and Communication, 41*(3), 287–298.

    Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review, 98,* 163–182.

    Martinez-Roldan, C. M., & Franquiz, M. E. (2009). Latina/o youth literacies: Hidden funds of knowledge. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 323–342). New York: Guilford.

    Smagorinsky, P. (2001). If meaning is constructed, what's it made from? Toward a cultural theory of reading. *Review of Educational Research, 71*(1), 133–169.

    Williams, J. P. (2007). Literacy in the curriculum: Integrating text structure and content area instruction. In D. S. McNamara (Ed.), *Reading comprehension strategies: Theories, interventions, and technologies* (pp. 199–219). Mahwah, NJ: Erlbaum.

24. Anderson, Role of the reader's schema in comprehension, learning, and memory (see note 23).

    Bransford, J. (1994). Schema activation and schema acquisition. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 483–495). Newark, DE: International Reading Association.

    Cunningham, A., & Stanovich, K. (1998, Spring/Summer). What reading does for the mind. *American Educator*, 815.

    Learned, J. E., Stockdill, D., & Moje, E. B. (2011). Integrating reading strategies and knowledge building in adolescent literacy instruction. In S. J. Samuels and A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 159–185). Newark, DE: International Reading Association.

    Rapp & van den Broek, Dynamic text comprehension (see note 3).

    Simonsen, S., & Singer, H. (1992). Improving reading instruction in the content areas. In J. Samuels & A. Farstrup (Eds.), *What research has to say about reading instruction* (2nd ed., pp. 200–217). Newark, DE: International Reading Association.

    Sinatra, G. M., & Broughton, S. H. (2011). Bridging reading comprehension and conceptual change in science education: The promise of refutational text. *Reading Research Quarterly, 46*(4), 374–393.

    van den Broek, P. (2010). Using texts in science education: Cognitive processes and knowledge representation. *Science, 328,* 453–456.

25. Idol, L. (1987). Group story mapping: A comprehension strategy for both skilled and unskilled readers. *Journal of Learning Disabilities, 20*(4), 196–205.

Goldman, S. R., & Bisanz, G. (2002). Toward a functional analysis of scientific genres: Implications for understanding and learning processes. In J. Otero, J. A. Leon, & A. C. Graesser (Eds.), *The psychology of science text comprehension* (pp. 19–50). Mahwah, NJ: Erlbaum.

Pearson, P. D., & Camperell, K. (1994). Comprehension of text structures. In R. Ruddell, M. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 448–468). Newark, DE: International Reading Association.

Reutzel, D. R. (1985). Story maps improve comprehension. *The Reading Teacher, 38*(4), 400–404.

Reznitskaya, A., Anderson, R. C., Dong, T., Li, Y., Kim, I., & Kim, S. (2008). Learning to think well: Application of argument schema theory to literacy instruction. In C. C. Block & S. R. Parris (Eds.), *Comprehension instruction* (2nd ed., pp. 196–213). New York: Guilford.

26. Anderson, Role of the reader's schema in comprehension, learning, and memory (see note 23).

27. Bower, G. H. (1976). Experiments on story understanding and recall. *Quarterly Journal of Experimental Psychology, 28,* 511–534.

    Bransford, Schema activation and schema acquisition (see note 24).

    Dochy, F., Segers, M., & Buehl, M. M. (1999). The relation between assessment practices and outcomes of studies: The case of research on prior knowledge. *Review of Educational Research, 69*(2), 145–186.

    Kintsch, The role of knowledge in discourse comprehension (see note 23).

28. Dochy, Segers, & Buehl, The relation between assessment practices and outcomes of studies (see note 27).

    Donovan, M. S., & Bransford, J. D. (Eds.). (2005). *How students learn: History, mathematics, and science in the classroom.* Washington, DC: National Academies Press.

    Roth, K. (1991). Reading science texts for conceptual change. In C. Santa & D. Alvermann (Eds.), *Science learning: Processes and applications* (pp. 48–63). Newark, DE: International Reading Association.

    Simonsen & Singer, Improving reading instruction in the content areas (see note 24).

    Sinatra & Broughton, Bridging reading comprehension and conceptual change in science education (see note 24).

    Tippett, C. D. (2010). Refutation text in science education: A review of two decades of research. *International Journal of Science and Mathematics Education, 8*(6), 951–970.

    van den Broek, P., & Kendeou, P. (2008). Cognitive processes in comprehension of science texts: The role of co-activation in confronting misconceptions. *Applied Cognitive Psychology, 22,* 335–351.

29. Akhondi, M., Malayeri, F. A., & Samad, A. A. (2011). How to teach expository text structure to facilitate reading comprehension. *The Reading Teacher, 64*(5), 368–372.

    Berkowitz, S. (1986). Effects of instruction in text organization on sixth-grade students' memory for expository reading. *Reading Research Quarterly, 21,* 161–178.

    Britt, M. A., & Sommer, J. (2004). Facilitating textual integration with macro-structure focusing task. *Reading Psychology, 25,* 313–339.

    Cohen & Snowden, The relations between document familiarity, frequency, and prevalence and document literacy performance among adult readers (see note 17).

    Haas, C., & Flower, L. (1988). Rhetorical reading strategies and the construction of meaning. *College Composition and Communication, 39,* 167–183.

Meyer, B.J.F., & Poon, L. W. (2001). Effects of structure strategy training and signaling on recall of text. *Journal of Educational Psychology, 93*(1), 141–159.

Reznitskaya, Anderson, Dong, Li, Kim & Kim, Learning to think well (see note 25).

Taylor, B. (1992). Text structure, comprehension, and recall. In J. Samuels & A. Farstrup (Eds.), *What research has to say about reading instruction* (2nd ed., pp. 220–235). Newark, DE: International Reading Association.

30. Akhondi, Malayeri, & Samad, How to teach expository text structure to facilitate reading comprehension (see note 29).

Fang, Z., & Schleppegrell, M. J. (2010). Disciplinary literacies across content areas: Supporting secondary reading through functional language analysis. *Journal of Adolescent & Adult Literacy, 53*(7), 587–597.

Goldman, S. R., & Rakestraw, J. A. (2000). Structural aspects of constructing meaning from text. In M. L. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 311–335). Mahwah, NJ: Erlbaum.

Kendeou, P., & van den Broek, P. (2007). The effects of prior knowledge and text structure on comprehension processes during reading of scientific texts. *Memory & Cognition, 35*(7), 1567–1577.

Lemke, J. (1998). Multiplying meaning: Visual and verbal semiotics in scientific text. In J. R. Martin & R. Veel (Eds.), *Reading science* (pp. 87–113). London: Routledge.

Mitchell, J., & Erickson, G. (2004). Constituting conventions of practice: An analysis of academic literacy and computer mediated communication. *The Journal of Educational Thought, 38*(1), 19–42.

Pearson & Camperell, Comprehension of text structures (see note 25).

Waldrip, B., Prian, V., & Carolan, J. (2006). Learning junior secondary science through multi-modal representations. *Electronic Journal of Science Education, 11,* 87–107.

Williams, Literacy in the curriculum (see note 23).

31. Bear, D. R., Invernizzi, M., Templeton, S., & Johnston, F. (1996). *Words their way: Word study for phonics, vocabulary, and spelling.* Upper Saddle River, NJ: Prentice-Hall.

Bos, C. S., & Anders, P. L. (1990). Effects of interactive vocabulary instruction on the vocabulary learning and reading comprehension of junior-high learning disabled students. *Learning Disability Quarterly, 13*(1), 31–42.

Carlisle, J. F. (2010). Effects of instruction in morphological awareness on literacy achievement: An integrative review. *Reading Research Quarterly, 45*(4), 464–487.

Dean, D. (2008). *Bringing grammar to life.* Newark, DE: International Reading Association.

Fang, A., & Schleppegrell, M. J. (2008). *Reading in secondary content areas: A language-based pedagogy.* Ann Arbor: University of Michigan.

Kasper, L., & Weiss, S. T. (2005). Building ESL students' linguistic and academic literacy through content-based interclass collaboration. *Teaching English in the Two Year College, 32*(3), 282–297.

McCutchen, D., & Logan, B. (2011). Inside incidental word learning: Children's strategic use of morphological information to infer word meanings. *Reading Research Quarterly, 46*(4), 334–349.

Nagy, W., Berninger, V. W., & Abbott, R. D. (2006). Contributions of morphology beyond phonology to literacy outcomes of upper elementary and middle-school students. *Journal of Educational Psychology, 98*(1), 134–147.

Schleppegrell, M. J. (2009). Grammar for generation 1.5: A focus on meaning. In M. Roberge, M. Siegal, & L. Harklau (Eds.), *Generation 1.5 in college composition: Teaching academic writing to U. S.-educated learners of ESL* (pp. 221–234). New York: Routledge.

Scott, J. (1993). *Science and language links: Classroom implications.* Portsmouth, NH: Heinemann.

Short, D. J., & Fitzsimmons, S. (2007). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners: A report to Carnegie Corporation of New York.* Washington, DC: Alliance for Excellent Education.

Sternberg, R. J. (1987). Most vocabulary is learned from context. In M. G. McKeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 89–105). Hillsdale, NJ: Erlbaum.

Walqui, A. (2006). Scaffolding instruction for English language learners: A conceptual framework. *International Journal of Bilingual Education and Bilingualism, 9*(2), 159–180.

32. Chin, C., & Osborne, J. (2010). Supporting argumentation through students' questions: Case studies in science classrooms. *Journal of the Learning Sciences, 19,* 230–284.

    Courts, P. L. (1997). *Multicultural literacies: Dialect, discourse, and diversity.* New York: Peter Lang.

    De La Paz, S., & Felton, M. K. (2010). Reading and writing from multiple source documents in history: Effects of strategy instruction with low to average high school writers. *Contemporary Educational Psychology, 35,* 174–192.

    Kuhn, D. (2010). Teaching and learning science as argument. *Science Education, 94,* 810–824.

    Lee, P., & Ashby, R. (2000). Progression in historical understanding among students ages 7–14. In P. N. Stearns, P. Seixas, & S. Wineburg (Eds.), *Knowing, teaching, and learning history: National and international perspectives* (pp. 199–222). New York: New York University Press.

    Moje, E. B., Peek-Brown, D., Sutherland, L. M., Marx, R. W., Blumenfeld, P., & Krajcik, J. (2004). Explaining explanations: Developing scientific literacy in middle school project-based science reform. In S. Strickland & D. E. Alvermann (Eds.), *Bridging the literacy achievement gap, grades 4–12* (pp. 227–251). New York: Teachers College Press.

    Rabinowitz, P. (1987). *Before reading: Narrative conventions and the politics of interpretation.* Ithaca, NY: Cornell University Press.

    Scott, *Science and language links* (see note 31).

    Temple, C., & Hinchman, K. A. (2008). Fostering acquisition of official mathematics language. In K. A. Hinchman & H. Sheridan-Thomas (Eds.), *Best practices in adolescent literacy instruction* (pp. 229–245). New York: Guilford.

    Their, M., with Davis, B. (2002). *The new science literacy: Using language skills to help students learn science.* Portsmouth, NH: Heinemann.

33. Appleman, D. (2000). *Critical encounters in high school English: Teaching literacy theory to adolescents.* New York: Teachers College Press.

    Borasi, R., & Seigel, M. (2000). *Reading counts.* New York: Teachers College Press.

    Curcio, F. R., & Artzt, A. F. (2011). Reading, writing and mathematics: A problem-solving connection. In D. Lapp, J. Flood, & N. Farnan (Eds.), *Content area reading and learning: Instructional strategies* (3rd ed., pp. 257–270). New York: Erlbaum.

    De La Paz, S. (2005). Effects of historical reasoning instruction and writing strategy mastery in culturally and academically diverse middle school classrooms. *Journal of Educational Psychology, 97*(2), 139–156.

    Hillocks, G., Jr., & Ludlow, L. H. (1984). A taxonomy of skills in reading and interpreting fiction. *American Educational Research Journal*, *21*(1), 7–24.

Kuhn, D., Cheney, R., & Weinstock, M. (2000). The development of epistemological understanding. *Cognitive Development*, *15*, 309–328.

Langer, J. (2011). *Envisioning literature: Literary understanding and literature instruction* (2nd ed.). New York: Teachers College Press.

Lee, P. J. (2005). Putting principles into practice: Understanding history. In M. S. Donovan & J. D. Bransford (Eds.), *How students learn: History, mathematics, and science in the classroom.* Washington, DC: National Academies Press.

Newell, G., Beach, R., Smith, J., & VanDerHeide, J. (2011). Teaching and learning argumentative reading and writing: A review of research. *Reading Research Quarterly*, *46*(3), 273–304.

Osborne, J. (2002). Science without literacy: A ship without a sail? *Cambridge Journal of Education, 32*(2), 203–218.

Saul, W. E. (Ed.). (2004). *Crossing borders in literacy and science instruction: Perspectives on theory and practice.* Newark, DE: International Reading Association.

Voss, J. F., & Wiley, J. (2006). Expertise in history. In K. A. Ericsson, N. Charness, P. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 569–584). Cambridge, UK: Cambridge University Press.

Wineburg, S. S. (1991). Historical problem solving: A study of cognitive processes used in the evaluation of documentary and pictorial evidence. *Journal of Educational Psychology 83*, 73–87.

34. Bartholomae, D. (1985). Inventing the university. In M. Rose (Ed.), *When a writer can't write: Studies in writer's block and other composing process problems.* New York: Guilford.

    Courts, *Multicultural literacies* (see note 32).

    Lemke, J. L. (1990). *Talking science: Language, learning, and values.* Norwood, NJ: Ablex.

    Rabinowitz, P., & Smith, M. (1998). *Authorizing readers: Resistance and respect in the teaching of literature.* New York: Teachers College Press.

    Rex, L. A. (2001). The remaking of a high school reader. *Reading Research Quarterly, 36*(3), 288–314.

    Scribner & Cole, *The psychology of literacy* (see note 1).

    Street, *Social literacies* (see note 1).

    Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past.* Philadelphia: Temple University Press.

35. Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms.* New York: Cambridge University Press.

36. Cope, B., & Kalantzis, M. (1993). *The powers of literacy.* Pittsburgh, PA: University of Pittsburgh Press.

    Courts, *Multicultural literacies* (see note 32).

    Delpit, L. D. (1995). *Other people's children: Cultural conflict in the classroom.* New York: New Press.

    Gee, J. (1996). *Social linguistics and literacies: Ideology in discourses* (2nd ed.). London: Falmer Press.

    Godley, A. J., Carpenter, B. D., & Werner, C. A. (2007). "I'll speak in proper slang": Language ideologies in a daily editing activity. *Reading Research Quarterly, 42*(1), 100–131.

    Gutierrez, Developing a sociocritical literacy in the Third Space (see note 14).

    Kynard, C. (2008). "The blues playingest dog you ever heard of": (Re)positioning literacy through African American blues rhetoric. *Reading Research Quarterly, 43*(4), 356–373.

    Lemke, Multiplying meaning (see note 30).