THE
COMPREHENSION
EXPERIENCE
Engaging Readers Through
Effective Inquiry and Discussion

W. Dorsey Hammond
&
Denise D. Nessel

Heinemann
Portsmouth, NH
We dedicate this book to

Samantha, Alex, Madison, and Mason
and to
Joan and Ford
# Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What We Know About Reading Comprehension: A Century of Research and Thinking</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>The Power of Story: Supporting Students' Reading of Narrative Texts</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>The Power of Inquiry: Supporting Students' Reading of Informational Texts</td>
<td>57</td>
</tr>
<tr>
<td>4</td>
<td>How Talking Supports Comprehension</td>
<td>81</td>
</tr>
<tr>
<td>5</td>
<td>How Writing Supports Comprehension</td>
<td>103</td>
</tr>
<tr>
<td>6</td>
<td>The Importance of Comprehension Instruction in the Primary Grades</td>
<td>128</td>
</tr>
<tr>
<td>7</td>
<td>Reading and Thinking Without the Teacher</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Now What Do You Think? A Follow-up Invitation to Our Readers</td>
<td>189</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>197</td>
</tr>
</tbody>
</table>
Once in a great while, a book comes along that radically changes how we perceive and process crucial understandings. *The Comprehension Experience*, seamlessly written and meticulously researched, is that rare book that causes us to rethink much of what we thought we knew about meaningful comprehension instruction and learning. Dorsey Hammond and Denise Nessel—respected scholars who are also highly skilled in the classroom—have written a masterpiece of a book, one that needs to be carefully read by all K–12 teachers of reading and teacher educators.

This is a serious book with an uncommon depth of thinking, yet the text is clear, easy to read, and full of practical suggestions that you will immediately want to put into practice. Most of all, and a cause for celebration, *The Comprehension Experience* is about teaching and empowering all students to think and deliberate at high levels while giving us educators the language and examples of exemplary teaching to make that happen. The authors state:

What we have proposed in this book is a rethinking of how we go about teaching children to read. Whether we can teach reading comprehension directly or explicitly is not a question that particularly interests us because we believe it to be the wrong question. Rather, the central question is: “What can teachers do on a day-to-day basis to enhance students’ existing propensity for comprehension and high-level thinking?”

To that end, the authors give us myriad examples and workable ideas along with the supportive language and specific daily actions that help us to guide students to think deeply about text and to develop the habits of highly skilled readers. In reconsidering common practices and ingrained approaches, the teacher-reader explicitly learns why and how to:

- use guided reading primarily to enhance comprehension and enjoyment of the text
- introduce a story—without the traditional picture walk and the prereading questioning and vocabulary teaching
- do more silent reading, even with young readers
- effectively use prediction and hypothesizing to help students reason their way through stories and informational text
• probe, through asking authentic questions, to stimulate students to ask their own
important questions and carefully examine their own ideas
• orchestrate rich discussions and debate across the curriculum
• have students independently collaborate in small groups to productively converse
about texts
• use writing to support, improve, and deepen comprehension
• understand the important difference between being a strategic reader and merely
applying strategies
• teach all necessary skills and strategies in the course of meaningful reading
and writing
• create a respectful classroom culture where all learners “feel honored as thinkers
and contributors”

This text could not be timelier. We are teaching in a culture of high anxiety and account-
ability where standardized test scores define student achievement. Reading instruction overfo-
cuses on skills without sufficient attention to rich discussion around notable fiction and nonfic-
tion texts. The authors state: “The idea of skills or subskills to be mastered needs to be replaced
with the idea that reading skillfully is a complex process that is heavily context-dependent.” The
authors believe that today, and they believed it thirty years ago.

I first met Dorsey Hammond in Chicago in 1981 at the annual conference of the Interna-
tional Reading Association when I attended a session he presented on beginning reading. As a
reading specialist who was pulling out small groups of students struggling to learn to read, I
knew that my skills-in-isolation approach with its overemphasis on phonics was not serving my
students well. Dorsey Hammond was the first educator I heard speak whose words about teach-
ing reading completely resonated with me. He put phonics in perspective, put meaning first,
and focused on high-level thinking by asking students inferential questions about worthwhile
texts. And he did all of this with even our youngest readers!

After his presentation, I approached him and said, “This was the most in-depth and sensible
presentation I’ve ever heard on teaching reading. I need to learn more. Do you ever come to
Cleveland, Ohio?” He graciously invited me to come as his guest to an upcoming presentation
at Baldwin-Wallace College, in the Cleveland area where I lived at the time. He later told me he
was surprised and delighted when he looked out into the audience and saw me sitting front and
center. I was hanging on to his every word and thought. I've been hanging on to his every word and thought ever since and am thrilled that he has teamed up with Denise Nessel to write the book on reading comprehension that we have all needed for a very long time.

Denise Nessel and Dorsey Hammond each studied at the University of Delaware, where they were both highly influenced by the brilliant work and thinking of their most important mentor, Russell Stauffer. Stauffer was one of the first researchers to fully utilize readers' prior knowledge by asking probing questions that guided readers to think more deeply about what they were going to learn through their reading. Stauffer's work and text, *Teaching Reading as a Thinking Process* (1969), became a jumping-off point for Nessel and Hammond's own ground-breaking work and teaching.

Denise has worked for many years as a mentor to teachers, giving particular attention to helping them work more effectively with their underachieving students. One of her primary interests has been engaging students in rich conversations that lead them to deeper, more thoughtful comprehension, knowing that all learners are capable of high-level thinking and substantive learning. One of the delights of this text is that we get to eavesdrop on the conversations these two educators and like-minded teachers have had with students around texts—from the primary grades through high school. Those rich discussions can serve as models for the kinds of conversations we can have with our own students.

It is noteworthy that *The Comprehension Experience* is one of the most thoroughly researched books I’ve ever read, and this is a good thing. As educators, we often hear “Recent research suggests…” or “Research says…” without fully understanding what the research actually says and means. Some readers may be tempted to skip Chapter 1, “What We Know About Reading Comprehension: A Century of Research and Thinking.” Do not skip it! Knowing and understanding the research is empowering and crucial for being able to wisely problem solve and make the moment-to-moment instructional decisions that are the hallmark of all excellent teaching. Not only that, but it is only through understanding a wide body of relevant research that we can effectively advocate for sane, sensible, exemplary practices for our students and not swing every time the political pendulum moves. Although you can read the chapters in any order that suits you, for example, beginning with Chapter 6, “The Importance of Comprehension Instruction in the Primary Grades,” or Chapter 7, “Reading and Thinking Without the Teacher,” my strong recommendation is you read the book straight through, in its logical order.
One of my favorite chapters is Chapter 2, “The Power of Story: Supporting Students’ Reading of Narrative Texts.” It’s the first time I’ve seen such beautifully detailed examples of how to help a story unfold through rich and probing dialogue with students. Such dialogue is not easy to orchestrate but it can be done, and the authors guide us through this journey. As well, Chapter 3, “The Power of Inquiry: Supporting Students’ Reading of Informational Texts,” also provides rich examples of what it looks like and sounds like to put rich questioning and dialogue at the center of all teaching and learning. Notice how the authors’ recommended postreading questions promote genuine inquiry and learning:

- Which of our questions did we answer?
- What questions have we not answered and what new questions have we raised?
- What else did we learn that we didn’t talk about or didn’t have questions about?
- What was the most surprising or interesting thing you learned from reading?
- What was the most important thing we learned today?
- What do we know now that we didn’t know before?

Perhaps most important of all, the power of talk and arousing the readers’ curiosity and desire to read are at the heart and soul of The Comprehension Experience. The reader comes away with how to use dialogue with students, that is, the specific questions to ask—and the follow-up responses to give—all with the end purpose of leading students to raise their own questions and construct meaning as they read. It is through talking and meaningful conversation, initially guided by the teacher as skillful communicator, that students learn at the highest levels. The authors write:

What the teacher says and does determines how students think about the experience of reading and what they aim to do when they read. Effective instructional language helps students acquire a sense of agency about their reading and thinking.

Hammond and Nessel’s text is a winning combination of practical, research-based approaches and ideas that always put respect for the learner’s intelligence first. I still remember an anecdote Dorsey told many years ago. He and a colleague were visiting a kindergarten classroom and doing research to learn more about segmentation and blending. Dorsey’s colleague made a request to a kindergartner: “Divide these words into as many sounds as you can.” The student replied, “Why would I want to do that?”
Children are natural constructors of meaning, but we educators often take the sense out of reading and make the whole process more difficult for them. *The Comprehension Experience* forces us to confront the way we have been teaching reading—to go beyond the current over-emphasis on skills, strategies, and test prep—and to constantly reflect on our practices and ask ourselves, “Why would I want to do that?” Dorsey Hammond and Denise Nessel provide everything we need to know and do to turn the complex process of reading into a deeply meaningful, successful, and satisfying experience. What a magnificent gift to our students and us teachers!

Regie Routman
May 2011
As graduate students, we each had experiences as learners under the mentorship of Russell Stauffer at the University of Delaware that opened our eyes to the pleasure and depth of learning that’s possible when students are guided by a true master teacher. Those unforgettable comprehension experiences led us to refine our own teaching so that we could arouse the same kind of interest and excitement in other learners. We have been focused on this for many years, teaching and guest teaching in elementary, secondary, and university classrooms and conducting workshops for educators. Our years of practical experience, coupled with study and research, have honed our understanding of what works best to develop learners’ reading comprehension.

With this book, we invite you to look at comprehension through our eyes and to think with us about what makes comprehension experiences most effective. We discuss basic principles and share what we know about the psychology of learning. We also include extensive lesson dialogues to show the kinds of teacher–student interactions that are particularly effective when comprehension is the goal. These dialogues showcase instruction that is not commonplace in today’s classrooms but is highly effective when it forms the core of the reading program. They help tell our story in important ways.

Some of our perspectives diverge from current conventional wisdom. This is because we are not easily swayed by what happens to be popular when it goes against what we know to be effective. We are concerned with some recent trends in instruction and assessment that do not reflect what the most skillful readers do and that at times may even work against students’ attempts to comprehend. We think it’s time to decrease the emphasis on skills and strategies and turn our attention to increasing learners’ capacity to construct meaning. Our priority is developing students who think critically when they read, who are primarily and consistently attentive to meanings, who proceed as well independently as when guided by a teacher, who are genuinely enthused about reading, and who experience joy in learning and discovery.

What we say in this book is relevant to reading instruction for all students at all grade levels, from those who learned to read before they came to school and would read well without much help from us to those who are struggling and suspect that they may not have what it
takes to read well. In our minds, these students all share important characteristics: intelligence, curiosity, useful prior knowledge and life experiences, a natural inclination to make sense of things, and a genuine desire to learn. We think it’s up to us, as teachers, to make good use of these considerable strengths that all learners bring to the classroom and to design comprehension experiences that will help them all flourish as readers and learners.

We have sequenced the chapters in the book in the way that makes the most sense to us, but readers may choose to read them in a different order.

In Chapter 1, we take a look at the people who have shaped our views of reading comprehension, beginning with the scholars of the early twentieth century and ending with those who are today making useful contributions. We are especially interested in one strong, unbroken thread that is evident through the decades: the view that reading is, at heart, a dynamic meaning-making process and that instruction is most effective when the priority at all grade levels is helping students construct meaning as they read.

With meaning making in mind, we focus in Chapters 2 and 3 on guiding the reading of narrative and informational text, respectively. We see these categories of text, and the comprehension experiences associated with them, as different enough to warrant substantially different instructional approaches. Similarities do exist, but the pathways to success are different. The more the differences are appreciated, the better the teaching and learning.

We devote Chapter 4 to an examination of how talking nurtures and enhances comprehension. We elaborate on the guided discussions described in Chapters 2 and 3 to consider a wider range of classroom interactions. We note how the quantity and quality of student talk strongly influences the nature and depth of students’ comprehension, calling attention to general principles and giving examples of effective classroom interactions.

We focus in Chapter 5 on reading–writing connections, especially noting how writing supports and extends comprehension. We make a distinction between writing in conjunction with narrative text and informational text, highlighting important principles and suggesting specific activities. We also suggest how students can explore different forms of discourse in ways that enhance their comprehension abilities and how they can most easily develop the disposition to write in order to communicate their own meanings.

In Chapter 6, we describe the kind of early literacy instruction that is most useful in orienting students to reading as a meaning-construction process. We think the discussions in this
chapter are most meaningful when read with the first five chapters as background, but those who are particularly interested in emergent literacy may want to read this chapter first.

Chapter 7 rounds out our perspective with a discussion of the ultimate goal of reading instruction: students’ effective functioning as readers when they are not under the direct supervision of teachers. This is a critical measure of an instructional program’s success.

We would like to express our gratitude to the many friends and colleagues who contributed one way or another to the final product. We thank George and Gerry Coon for reading selected manuscript chapters and providing good advice and encouragement, and we give special recognition to colleague Ron Cramer for his friendship and inspiration and for being a model of scholarship and diligence. We also thank Joan Buffone for her sage advice on numerous questions we raised and Ford Newbold for his response to key points that helped further our thinking. Their intellectual and emotional support and encouragement were vital to the completion of this project.

In addition, we thank our university students, the educators with whom we have worked in so many schools, the participants in our many workshops, and the valued colleagues with whom we have had so many enriching discussions. Their response to our ideas has helped us understand how to explain our thinking to a wider audience. We also particularly thank Darlene Wade, Shirley Oleinick, Sylvia Nagel, and Linda Dickieson from Ferndale, Michigan, and Sue Case from Waterford, Michigan, whose skill as teachers and rapport with learners are especially admirable. With their permission, we used lessons they conducted as the basis for several of the dialogues in this book. We also warmly acknowledge the many young people in classrooms across the country who respond with such enthusiasm to our pedagogy and to the texts we and their classroom teachers read and discuss with them. Their amazing responses again and again sustain our faith in the thinking capacities of school-aged learners.

In the Heinemann family, we thank Regie Routman for putting us in touch with the editorial team, initiating what has become such a positive relationship, and for giving us such useful feedback. We are grateful to Wendy Murray, who gave us invaluable guidance as we began to prepare our final manuscript, and to Margaret LaRaia, who diligently and enthusiastically saw the project through still more revisions. And we appreciate the fine support of the rest of the in-house team, including Victoria Merecki, Eric Chalek, Monica Crigler, and Steve Bernier. We especially thank our friends at Heinemann for understanding and believing in our ideas. In
short, they get it. We are grateful that they have been so interested in helping us get our mes-
sage out to a wider audience.

We have been thinking about this project for more than a decade, having realized how often
we responded in the same ways to what was going on in the world of reading, but we were too
busy to turn the thoughts into a book. We are glad we finally found the time. The endeavor has
been exceedingly pleasurable and rewarding. We hope you find as much satisfaction in reading
the book as we did in writing it.

Dorsey Hammond
Denise Nessel
2011
What Do You Think?

An Invitation to Our Readers

Here are some statements related to reading comprehension. We did not design them to be tricky or to make you wonder about “right” or “wrong” answers. This is just our way of inviting you to think about some of the issues we explore in this book.

Based on your experiences, decide if you agree or disagree with each statement. Put an A or D on the line to indicate what you think or the direction in which you are leaning.

You may wish to respond to all the statements at once or think about them chapter by chapter, as they are arranged here. If you are reading and discussing the book with colleagues, we encourage you to share your views about the statements related to each chapter before reading the chapter. We are confident that such professional reflection and discussion will enhance your reading.

At the end of the book we will invite you to think again about the statements.

Chapter 1

___ 1. Much of what we know about reading comprehension has been discovered within the past two or three decades.

___ 2. Classroom observation studies indicate that teachers in grades 1–6 spend a significant amount of time teaching students how to comprehend texts.

___ 3. Young children are predisposed to make sense of their world, including understanding the texts they read in school.

Chapter 2

___ 4. The anticipation or prediction of upcoming story events motivates students and enhances their comprehension.

___ 5. It is normal for several students to read the same story and generate different interpretations.
WHAT DO YOU THINK?

6. Extensive preparation before reading enhances students' understanding of a narrative text.
7. It is a good technique to teach a skill or strategy before reading a story so that students can immediately practice it as they read.
8. A strong emphasis on explicit instruction in skills and strategies is a major priority when the goal is developing critical and thoughtful readers.

Chapter 3
9. Prior knowledge is a critical factor in the successful reading of informational texts.
10. A student's misconceptions about a topic should be minimized or corrected before the student reads an informational text about the topic.
11. Allowing students to share their misconceptions with peers may inhibit the comprehension and learning of the other students.
12. The process of reading informational texts tends to be similar across the various subject areas (e.g., science, social studies, math, health).

Chapter 4
13. Talking is a primary vehicle for constructing meaning.
14. One of the most effective ways to improve the quality of student talk is to change the nature of teacher talk.

Chapter 5
15. Writing is a major means of fostering comprehension and learning.
16. First students learn to write, and then they write to learn.
17. Writing models and frames can develop student dependency.
18. At any grade level, the primary focus of writing should be on the quality of the content.
Chapter 6

___ 19. The long-held view that first children learn to read and then read to learn is still viable in today's schools.

___ 20. Word recognition must be accurate and rapid before sufficient attention can be directed to comprehension.

___ 21. When students read text orally to a teacher or classmates, their comprehension is usually enhanced.

Chapter 7

___ 22. An effective way of enhancing vocabulary growth is to address vocabulary after the reading of the text.

___ 23. Effective comprehension instruction usually begins with teacher modeling.

___ 24. Thinking about one's own thinking is critical to effective independent reading.

___ 25. An important measure of effective literacy instruction is how readers perform when the teacher is not present.

Now that you have completed some or all of the statements, check (✓) the ones you feel confident about. If you feel ambivalent about any, indicate that with a question mark (?).
The Power of Inquiry
Supporting Students’ Reading of Informational Texts

When readers choose to read informational text, they do so because they have questions to answer. They may be interested in specific facts, a solution to a problem, a new perspective, or an understanding of a complex process. They have either generated the questions themselves or have become interested in questions raised by others. Even those who choose informational texts for leisure reading expect to learn something. Such real-world uses of informational texts are excellent models for classroom reading. Ideally, students become genuinely curious about something, are eager to discover the very information that is in the text, and have a satisfying experience of inquiry. Here is an example to illustrate.

Reading Informational Text: An Example
This lesson about bones was conducted in a third-grade class. Students sat in groups of three or four so that all could participate fully by discussing alternately in their groups and as a whole class. This was the first time the children had talked about the topic.

Teacher: We’re going continue our study of the human body and today will start learning about our bones. Let’s think of what we already know or think we might know about the bones in our bodies. Take a few minutes to talk in your groups.
(The teacher circulated, showing interest in what the groups were saying but not indicating if they were correct. He asked occasional questions to encourage students to think more deeply or explore other possibilities, then reconvened the class to share ideas.)

**Teacher:** What do we know about the bones in our bodies?

**Charlie:** We talked about how bones break sometimes.

**Teacher:** And?

**Charlie:** Then you put it in a cast. You have to wear the cast a long time.

**Teacher:** Why do you think we need bones?

**William:** You have to have bones. Or you’d be like a jellyfish.

**Dean:** Yeah. You couldn’t stand up. You would just flop over.

**Teacher:** Are there different kinds of bones?

**Saira:** Some are big. Some are little.

**Charlie:** Some are straight, and I think some are bent or curved.

**Darren:** Is your skull a bone?

**Teacher:** What do you think?

**Darren:** I don’t know. It’s hard, so maybe it is.

**Teacher:** What else did you talk about?

**Zane:** We have lots of bones. Everybody does.

**Teacher:** How many is a lot? *(Students shake their heads, puzzled.)*

**Teacher:** Well, do you think we have more than one hundred bones in our bodies or fewer than one hundred? What’s your best thinking? Talk it over. *(Groups discuss briefly.)*

**Teacher:** What do you think?

**Zane:** Some of us think maybe twenty bones. But some of us think more.

**LouAndra:** We think maybe about one hundred bones.

**Teacher:** Talk about that.

**LouAndra:** Well, we have lots of bones in each hand and lots of little bones in our feet. And our arms and legs.

**Marlo:** We think maybe two hundred.

**Avon:** We think more than one hundred, but not two hundred. That’s too many.

**Teacher:** Do we have all of our bones when we’re born?

**Several:** Ooh. That’s a good question.

**Gaby:** I don’t think you could have all of your bones when you’re a little baby. There isn’t room to put them all. *(Several students laugh.)*
Saira: Maybe they’re all there. They’re just very tiny.
Teacher: What else?
Thomas: We talked about whether your teeth are bones.
Teacher: What do you think?
Thomas: We think they are but we aren’t sure.
Zane: We think they are.
Teacher: What’s inside our bones?
Rhonda: Is it bone all the way through?
Maria: Are they hollow? Some birds have hollow bones, I think.
Eddie: I think there’s something inside. I’m not sure what it’s called, but I think it’s important.
Teacher: How is it important?
Eddie: I don’t know, but I think the bones make you stay healthy. Something inside the bones.
Teacher: What else?
Gaby: You’re supposed to drink lots of milk to make your bones strong.
Kylie: I think you’re supposed drink two glasses.
Gaby: Every day.
Teacher: OK, we have lots of interesting ideas. Let’s read to ourselves and see if we can find answers to our questions. (Students eagerly read the following text.)

The Bones in Your Body

You were born with more than three hundred bones in your body. As you grow, some of the bones grow together, so when you are fully grown, you will have about 206 bones. Your bones make up your skeleton. Your skeleton protects and supports the organs and muscles inside your body. Tendons connect your bones to muscles so you can move.

Your bones were very soft when you were born. Your blood carries special cells into your bones, and they make your bones harder and stronger as you grow. Your bones have calcium and collagen, which is a kind of fiber. The calcium makes your bones strong, and the collagen makes them flexible.
Inside your bones is a soft and spongy material called **marrow**. Some is red, and some is yellow. The yellow marrow stores fat. The red marrow makes new red blood cells to replace old cells that die. It makes more than two million new red blood cells each second!

Your bones are connected by ligaments. Ligaments are made of collagen, so they’re flexible. Because of that, you can bend and move easily.

You have different kinds of bones, for example: long bones, short bones, and flat bones. The big bones of your arms and legs are long bones. The main bones of your wrists and ankles are short bones that are as wide as they are long. Your rib bones are thin and flat, and you have twenty-four of them.

Your backbone is made up of thirty-three bones. You have twenty-eight different kinds of bones in your head. Eight are in the part of your skull that protects your brain. Others are in your cheeks, nose, and mouth. Each of your hands has twenty-seven bones. They are in your wrist, in the main part of your hand, and in your fingers.

Although your bones are strong, they can break. Where a bone breaks, it creates new cells and blood vessels. These cover over the broken parts and keep growing until the pieces grow back together. Then the bone is like new again.

Suppose you fall down hard and break a bone in your arm. First, a doctor will take an X-ray of your arm to see the broken bone inside. Then the doctor will move the broken pieces together and will put a hard cast on your arm to make sure they stay together. It will stay there for one or two months until the pieces grow together.

To keep your bones healthy, you need calcium and vitamin D. If you’re between four and eight years old, you need about two eight-ounce glasses of milk a day, and you also need to eat foods that are high in calcium. If you are between nine and eighteen years old, you need at least three eight-ounce glasses of milk a day along with foods with calcium. Green vegetables like broccoli and kale have calcium. So do cheese, fish, and almonds. Milk usually has vitamin D, and you can get vitamin D from being in the sun for a short time every day.
Exercise is as important as calcium and vitamin D for healthy bones, but some exercise is better than others. The best exercise puts weight on your bones and makes your bones work hard. That’s what makes them strong. Swimming and bicycling are good for you, but they don’t put weight on your bones. Walking, running, dancing, and skateboarding all put weight on your bones, so they help your bones grow strong.

Students read silently and attentively but paused occasionally to express pleasure at finding answers. For closure, the teacher guided a lively postreading discussion:

**Which of our questions did we answer?** Students identified information that related to their questions and hypotheses. Zane and Saira talked about how you have more than three hundred bones when you are born and end up with 206 bones. Kylie remarked that bones have little sponges inside them. When Gaby said she didn’t remember seeing that, Kylie read aloud the sentence referring to “soft and spongy material.” Gaby said spongy material isn’t the same as little sponges. The group discussed this and, with the teacher’s help, better understood the nature of marrow.

**What questions have we not answered and what new questions have we raised?** Thomas and Zane wondered if teeth counted as part of the 206 bones. Saira wondered if milk is good for your bones, what might be bad for them? The group noted that the article said nothing about either point and decided to find the answers elsewhere.

**What else did we learn that we didn’t talk about or didn’t have questions about?** Students noted that they now realized the importance of exercise to bone health. The teacher brought up sports not mentioned in the article, inviting students to apply their understanding of the concept of weight-bearing exercise. Students also talked about bone marrow and discussed what they had learned about ligaments, calcium, and collagen.

**What was the most surprising or interesting thing you learned from reading?** Some students said they were most surprised to learn that people have more bones as infants than as adults, remembering that they had all thought just the opposite. Others said they were most surprised that bone is soft in the middle, that blood is made in the bones, and that the growth of red blood cells is so fast. They were also surprised by the number of bones in different parts of the body but realized they were confused by the numbers and
body parts when they discussed them. To clarify, they reread selected passages aloud and discussed key statements.

*What was the most important thing we learned today about our bones?* Marlo pointed out that if you wanted to be a nurse or a doctor it would be important to know how many bones people have. Others noted information with practical benefits: how much milk to drink, the physical activities that are good for bones, and how broken bones are treated.

*What do we know now about bones that we didn’t know before?* Students summarized the key points they had learned and also talked about bone flexibility. The teacher guided them to consider different degrees of flexibility so that they could understand how bones are hard and yet can bend.

This description can’t fully convey the emotional tone of the lesson. Students leaned forward, listened attentively, eagerly contributed ideas, talked productively, read with enthusiasm, and reread thoughtfully. They became genuinely interested in bones. The teacher clearly enjoyed stimulating their thinking and seeing them find the information they sought. The positive climate strongly influenced the students’ attention and comprehension.

**Reflecting on the Power of Inquiry**

This teacher used the power of inquiry to sustain students’ interest and develop their comprehension. He invited students to share what they knew and accepted their ideas nonjudgmentally. As they talked, he probed further, leading them to think critically about their preconceptions. As questions arose, he invited them to form hypotheses and encouraged discussion of the different ideas that emerged. These four steps are vital to priming students effectively for reading informational text. Let’s look more closely at how they work together.

- **Activate prior knowledge.** It is widely accepted that students benefit from recalling what they know about a topic before they read. However, although they may think they know some things and don’t know others, they may be mistaken on both counts. They may also have knowledge that they don’t realize is relevant and some that they think is relevant but isn’t. In discussing, they will share misconceptions and say things that are incorrect, as the third graders did. Learners’ “preconceptions” are a complex mix, as Bransford, Brown, and Cocking (2000) note.
• **Stimulate critical thinking.** Because students’ prior knowledge is complex and imperfect, just asking them what they know is not enough. They must also be encouraged to think critically about their ideas. Thus, this teacher probed the nuances, depths, and accuracy of what students said. To sustain their uncertainty, he did not reveal any answers. Significantly, he knew that most of his questions were directly related to the information in the text. The students were not thinking of the text because it was not in front of them. They were focused only on the topic, and the more they thought, the more they questioned what they knew.

• **Invite hypotheses.** As uncertainties emerged, the teacher invited students to generate hypotheses, knowing these would make text details more salient during reading. He provided scaffolding as needed. For example, they were puzzled when asked how many bones humans have, so he gave them an anchor for their thinking: more than one hundred or fewer? This was not a clue to the correct answer. It was an encouragement to think further instead of saying they didn’t know.

• **Encourage discussion and debate.** The teacher knew that interest would increase if the group considered different ideas. Discussing various hypotheses also intensified students’ motivation. They didn’t simply want to know the answers to some questions; they wanted to know if their tentative answers were the right ones. With their curiosity at its peak, they were well primed for reading.

This teacher knew exactly what he wanted the students to learn about the curriculum topic, and he was familiar with the text. His guiding of the conversation was thus an artful orchestration of the students’ thinking. Notably, he asked the students to do far more than simply recall what they knew before reading. He asked them to use their prior knowledge to form hypotheses. This form of active thinking is highly beneficial to the learning of informational material, as Stauffer (1969) and Lindfors (1999), among others, point out.

A particularly important aspect of the lesson was how students’ uncertainty aroused their curiosity, a mental state that is vital to learning, as Dewey (1910) noted and others have observed...
since. Some students become curious as soon as they are aware they don’t know something. Others, often those who have been frustrated by school, may become curious only later in a discussion like this. The third graders, used to hypothesizing, were developing the inclination to be curious and thus the ability to sustain interest in what they were learning.

Although such a prereading discussion does not need to be restricted to what is in the text, it can be counterproductive to focus too much on other information. For example, the teacher didn’t encourage further discussion of birds’ bones when Maria made her comment, knowing the text did not address that topic. However, even though the teacher deftly channeled the talk toward information that was in the text, these students felt they could talk about whatever they liked.

Properly nurtured, hypotheses change learners and learning. They are the students’ questions and become the students’ purposes for reading. The learners become intellectually and emotionally involved. No one has to force them to read; they genuinely want to find the relevant information. Scholars through the years have called attention to these aspects of the psychology of learning. For example, Kelley (1947) notes the vital role that learners’ purposes play in motivating learning. Postman and Weingartner (1969) observe that if students are invited to engage in inquiry, they must develop an emotional connection to the subject; without that, the inquiry is superficial and hollow. Glasser (1992) asserts that students simply walk away, figuratively if not literally, if they are forced to learn information in which they have no interest. Markham (2005) points to the importance of making learning a matter of “sustained relevant discovery.”

**Reading Informational Text: A Second Example**

This second example is from a high school class that had recently studied the American War for Independence and was now beginning a unit on the War of 1812. The teacher was especially interested in seeing how students would make use of what they had learned so far as they discussed the new topic.

*Teacher:* Today, we’re going to learn about the writing of “The Star-Spangled Banner.” Does anyone know who wrote the lyrics? *(Several students name Francis Scott Key, saying they remembered it from somewhere.)* OK. Let’s take a minute to think about what we might
already know about this. Talk in your groups about what you know or think you know about Key writing the lyrics.

(Students thought Key was looking at the American flag from a ship in the middle of a battle, recalling a painting of such a scene that they had seen some time ago. Most placed the event during the Revolutionary War; others suggested the War of 1812, noting that was the historical period they were about to study.)

Teacher: So if Key was on a ship, what was he doing there?
Wayne: He must have been fighting.
Ben: Maybe he was the captain.
Pat: Wasn’t he a prisoner? I remember reading that somewhere.
Carrie: I think that’s right.
Simon: So the British were holding him as a prisoner?
Pat: It must have been the British. Who else would it have been?
Larry: What about the French?
Pat: The French were on our side during the Revolution. Remember Lafayette and all that?
Teacher: Why would anyone be holding Key prisoner? What do you think he did?
Evan: Maybe he was a spy. They caught him and took him prisoner.
Jackie: He could have been an officer and they took him so his men would surrender.
Ronnie: But if he was a prisoner, how could he see the flag? Wouldn’t he be below the deck in chains or something?
Pat: We don’t know for sure that he was a prisoner.
Jeff: Where was the flag? On another ship or on the land?
Nathan: Maybe another ship. Maybe there was an American ship fighting the ship he was on.
Ben: Did the Americans have a navy at that time?
Teacher: If Key was on a ship, where do you think the ship was? Where did all this happen?

(Students conferred briefly in their groups. Some thought New York Harbor, saying that was a center for commerce; others thought Philadelphia or Washington D.C., noting that each was the capital at some point.)
Jeff: So where was the flag?
Teacher: Where do you think it might have been?
Kim: Maybe it was with the soldiers on land. They carried it into battle, and he saw it from the water.
Wayne: Maybe it was flying over a fort.
Simon: Yeah, a fort! The song goes, “O’er the ramparts we watched...”
Teacher: What fort would that have been?

Students suggested several forts that they remembered from their earlier studies, debating which was most likely Key’s location. After another few minutes of discussion, students read an account of Key’s experience at Baltimore Harbor in September 1814, when he boarded a British ship to arrange the release of Americans who were being held as prisoners.

After reading, the teacher posed the six questions presented earlier. Students readily noted the details related to their hypotheses and discussed them with interest. They debated whether or not Key was actually a prisoner, pointing out that although he had not been captured, he was not free to leave. They said learning about this event would probably help them remember the War of 1812 and Fort McHenry because both of those details jumped out at them as they read. The lesson served as a springboard for later discussions of all four stanzas of the lyrics as the students continued their study of early American history.

This teacher engaged students regularly in forming hypotheses about upcoming topics. Sometimes they discussed and read in one class period, as in the example. Other times, they debated hypotheses for a longer stretch, then read and discussed multiple texts for several days. Sometimes they understood the material easily; sometimes they reread and discussed at length to clarify. Used to thinking ahead, they were becoming adept at applying what they had learned to new topics. Consequently, they experienced history as an interesting unfolding of related events. Such coherence is an especially useful characteristic of instruction, as noted by Applebee, Burroughs, and Stevens (1994, 2000), and enhances the pleasure of learning as well as depth of understanding.

**Making the Case for Misconceptions**

Many teachers are uncomfortable when students state incorrect information and are tempted to set them right quickly, but doing so is not particularly effective when the purpose is thinking. The value to learners of being wrong at the outset is actually high. Stauffer (1969) designed the
Directed Reading-Thinking Activity to make students aware of what they don’t know about a

Directed Reading-Thinking Activity to make students aware of what they don’t know about a topic as well as what they do know. Smith (1973) points out that for students to confirm what they already know is not as useful as being wrong initially and having to revise their thinking. McNeil (1984) advocates instruction that purposely creates cognitive dissonance. Bingham (2000) lauds the value of the “creative disequilibration” that results from purposely generating doubt in students’ minds.

Dykstra (2005), reporting research on physics instruction, presents a strong argument for unearthing learners’ misconceptions and speculations. As he explains, the typical physics teacher gives information, checks to see that students have received it, and assigns reinforcement activities. Students who receive such traditional instruction may be able to answer questions, especially if they are posed in the right way, but they can seldom apply information in actual problem-solving situations because so much of their knowledge is superficial. Even more significantly, Dykstra notes that studies dating from 1904 consistently show that this traditional approach fails to change students’ initial misconceptions about physical phenomena. Furthermore, he expresses concern that the approach has negative impacts on learners’ attitude toward science and toward themselves as students of science. However, he notes that when a teacher skillfully guides students to explore their misconceptions and build new understandings from their faulty knowledge, the students’ understanding of concepts and phenomena improves dramatically.

In any subject, when students are about to learn something new, allowing them to voice incorrect information with impunity helps build a healthy psychological climate for learning. Students relax noticeably when told they are not expected to have all the answers. Thinking becomes enjoyable under these conditions. Students sometimes ask the teacher to hold off a little longer in handing out the text because they have “just one more idea” to share. They cheerfully admit they are probably wrong but want to say what they are thinking anyway.

As Holt (1964) notes in his classic work on the dynamics of failure, many students are painfully aware of not knowing the answers and fearful of looking foolish by saying something wrong. He gives a number of examples of students whose anxiety about what
they don’t know is so strong that it has debilitating effects on their ability to think clearly and use what they do know to figure things out. Tatum (2009) makes the same observation, pointing out that such feelings drive underachievers away from school altogether. Many others argue for the establishment of a climate for learning that encourages substantive student talk, accepts errors and misconceptions, reduces anxiety, and nurtures confidence. For example, Allington and Johnston (2002) note from their research that the most effective teachers engage students frequently in the exploration of ideas rather than merely the production of correct answers.

When competing ideas are explored, everyone benefits. Students listen to each other’s reasoning and respond with their own best thinking. Even those who don’t verbalize their thoughts become involved by following others’ exchanges. A discussion of different ideas enables everyone to see more sides to the issue, reconsider initial ideas, and think more deeply about the topic. Debate sharpens thinking even when some of the ideas turn out to be wrong (Nemeth 1986). Such discussions provide what Hattie (2009) highlights as a sign of excellence: a focus on depth and complexity.

Whether or not a hypothesis turns out to be correct is essentially irrelevant, and students ordinarily are indifferent to the accuracy of their first thoughts, especially if the teacher does not call attention to it. More important is the pleasurable anticipation before reading and the heightened interest as answers are found during reading. As Jensen (2005) points out, excitement is one kind of emotional response that has a positive effect on cognition. Thus it’s not remarkable that the sensation of surprise—strongest when a hypothesis turns out to be wrong—helps to fix information in memory.

Other Effective Approaches to Informational Text

Similar approaches can be used to prompt lively discussion and generate hypotheses before reading. Two that are especially effective are anticipation guides and the use of key words to stimulate thinking.
Anticipation Guides

An anticipation guide contains teacher-composed statements about a topic that students discuss before reading. After reading, they review their initial responses, revising as needed. To illustrate, here is a lesson about potatoes taught in a fourth-grade class.

**Teacher:** Here are some statements to think about. Discuss each one in your groups and decide if you agree or disagree and why.

**Potatoes**

- 1. If you put a potato in the ground, a plant will grow.
- 2. A potato plant has flowers.
- 4. We eat the part of the potato plant that is called the root.
- 5. To grow a potato, you must plant potato seeds.

**Teacher:** What have you discussed in your groups?

**Group 1:** We agreed with #1 at first, but then we read #5 and we weren't sure. So we agreed with both. We think you have to put a potato in the ground and a seed, too.

**Group 2:** We didn't agree with #1. We don't think it would work to put a potato in the ground. It would just get mushy and rot.

**Group 3:** We think you plant seeds because a potato is a vegetable and you plant seeds to get other vegetables, like squash and beans.

**Group 2:** Yes, that's what we think, too.

**Student:** My grandfather cuts potatoes up and puts them in the ground and they grow. So I think I agree with #1. But maybe it only works for the potatoes he grows. . . .

The groups shared their thinking about each statement. Some thought potato plants have flowers and attract bees like other plants; others thought not because potatoes grow underground. All agreed with #4, noting that because potatoes grow underground they must be roots.

Each statement was addressed in the text they read: a short illustrated book about the life cycle of a potato plant. They discussed again after reading and concluded the lesson by revising or elaborating the original statements as needed to make them all true. For example, they revised the fourth statement to read: *We eat the part of the potato plant that is called the tuber. Tubers grow in the roots of the plant.* Finally, they wrote accounts in their own words about what they had learned.
Anticipation guides have considerable potential in grades K–12 when the statements are simple but thought provoking and when students discuss them. Simply writing agree or disagree next to each does not lead learners to think critically about the statements, become curious, form hypotheses, and read purposefully for answers. Thoughtful discussion is essential if students are to become primed to learn more. Anticipation guides are especially useful in information-heavy subjects such as social studies and science. For a more extensive discussion of this approach, devised by Herber (1978), see Nessel and Graham (2007).

**Hypothesizing with Key Words**

Another useful alternative is to present students before reading with the topic and several words from the text. For example, here is an array given to a ninth-grade class:

**Topic: Making Chocolate**

- nibs
- ferment
- winnow
- roast
- molds
- beans
- pods
- rollers
- blend

To start, the teacher said: **Today we are going to learn about how chocolate is processed into chocolate bars and other forms. All these words have something to do with the processing. What do you think the connections are? For example, what might rollers have to do with the process? What might be blended with what? Talk in your groups first. Then we'll discuss as a class.**

The choice of words is critical. If students know too much about how the words relate to the topic, they have little reason to wonder. That's why this teacher included nibs, winnow, and ferment. He thought the words would probably be relatively unfamiliar in this context and thus would arouse curiosity. At the other extreme, if too many of the words are specific and technical, students do not know what to do with them. That's why this teacher included beans, rollers, blend, pods, and roast. He knew they would be familiar to students from other contexts and thus would lead to meaningful, if not accurate, responses. After speculating about possible connections among the words, the students were eager to read. After reading, they discussed the words again, pinpointing the role of each in chocolate manufacture.
This is an effective strategy to use when the students have relatively limited prior knowledge about the content to be learned. The words get the discussion going and prime students for reading. For a further discussion of this approach, created by Hammond (1984), see Nessel and Graham (2007).

The Value of Hypotheses in Reading Informational Texts

Students with clear hypotheses know what they are looking for and readily note relevant information when reading. Because they read with interest and attention, they learn other information, too, so their overall comprehension is high. Postreading discussion is purposeful, and because learners talk about the information in their own words, they are more likely to retain it. Word callers, in particular, benefit. Just as predicting outcomes helps them comprehend narratives, hypothesizing helps them comprehend informational texts.

Before reading, hypothesizing gives students excellent opportunities for critical thinking. They must judge the plausibility of their preconceptions and consider what they may have overlooked. After reading, they must decide if they should retain, revise, or discard their hypotheses in light of the text information. Learners may also consider the background of the author, the degree of bias evident, the publication date, and other features that might affect the validity of the information. This kind of thinking is useful at all grade levels but is increasingly valuable for older students, whose capacities for critical evaluation are usually more fully developed.

The six postreading questions (see Figure 3.1) prompt reflection and reconsideration of initial ideas. Each serves a useful purpose in stimulating discussion so that students’ processing of information isn’t too hasty or superficial.

Figure 3.1

<table>
<thead>
<tr>
<th>Six Postreading Questions: Informational Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Which of our questions did we answer?</td>
</tr>
<tr>
<td>2. What questions have we not answered and what new questions have we raised?</td>
</tr>
<tr>
<td>3. What else did we learn that we didn’t talk about or didn’t have questions about?</td>
</tr>
<tr>
<td>4. What was the most surprising or interesting thing you learned from reading?</td>
</tr>
<tr>
<td>5. What was the most important thing we learned today?</td>
</tr>
<tr>
<td>6. What do we know now that we didn’t know before?</td>
</tr>
</tbody>
</table>
Asking students which questions they answered honors their hypotheses, invites them to state what they learned, and encourages them to bring up confusions or ambiguities. Further discussion may be needed if they have interpreted statements differently.

Noting unanswered questions and raising new questions invites students to consider what the text does not say. In some instances, distinguishing between what is addressed and not addressed is challenging and requires attentive rereading and further discussion.

Asking students what else they learned puts their recall under their control. They are not in the awkward position of being asked about details they may have overlooked. The regular use of this question leads students to expect that they will learn much from reading that goes beyond their initial purposes. Then, too, as students share ideas, some will mention details that others missed. All benefit from this review.

In the spirit of Rosenblatt (1978), asking about the most surprising or interesting details invites an aesthetic response to informational text. Most often, students find different bits interesting or surprising, so a lot of information is brought into the discussion. Hearing the responses, the teacher also gains useful information about the students' perspectives because they are deciding what they as individuals find noteworthy.

The term important in this context refers to what can be objectively considered significant or vital to remember. Students may judge certain nuggets of information both interesting and important, but they will be interested in some information even though it is not particularly important and will deem other information important but not all that interesting. The distinction between the two is thus useful for the shift in thinking that it entails.

Too many students think it's best to know the answers to all the questions at the beginning of the lesson, and teachers reinforce this belief when they place too much emphasis on what students know before reading. For this reason, it's especially useful to ask learners after reading what they know now that they didn't know before. The focus here is on relative gain: what new information they have acquired.

The enhanced comprehension that results from using hypotheses as purposes and having substantive discussions after reading also enables students to write with more confidence about what they have learned. In Chapter 5, we suggest a
The Power of Inquiry

number of ways that writing can be used to refine and further extend comprehension of informational text.

Building Cognitive Capacities and Dispositions
Discussion provides opportunities to clarify or refine learners' comprehension and thinking. For example, fifth graders in Michigan have just read about the making of maple syrup. After discussing what they learned, the teacher stimulates further thinking:

Teacher: What do we know about where Michigan ranks in maple syrup production?
Hope: Michigan ranks third.
Teacher: How do you know?
Hope: In the second paragraph it says, “Only the syrup makers in New York and Vermont produced more.” So that means Michigan must be third because this is an article about maple syrup in Michigan.

(Students look again at the paragraph from which Hope is reading orally.)

Many people think only of Vermont when they think of maple syrup, but Michigan is a major maple syrup state, too. Over 98,000 gallons of maple syrup were produced in our state last year. Only the syrup makers in New York and Vermont produced more . . .

Zoe: So New York is number one and Vermont is number two.
Rex: Wait. That may not be true. It doesn't really say which is number one. It just says that New York and Vermont produced more. Maybe Vermont is number one.
Zoe: That's true.
Teacher: Is there anything else we can conclude from this paragraph and other information in the text?
Kobe: Like what?
Teacher: Think about the sap.
Kobe: Oh yeah. It says it that it takes about fifty gallons of sap for one gallon of syrup. We could figure out how much sap came from Michigan trees.
Rex: You could multiply 50 times 98,000 gallons and get that answer. That would be a lot of sap!
Teacher: How much? Can we find out? (Students compute and discuss.)
The teacher raises the question about Michigan’s ranking knowing that the text does not state the information explicitly. She is interested in seeing how students handle the implied information and is pleased when Rex questions Zoe because she has often talked with the group about reading closely, being alert to ambiguities, and not jumping to conclusions. In addition, the teacher is able to extend the students’ thinking by using data about sap from another part of the text.

Such high-level thinking before and after reading develops useful dispositions over time. Students see learning as a form of discovery that generates a keen sense of intellectual satisfaction. The more they have these kinds of discussions, the more they learn to respond thoughtfully and reason with increasing sophistication. These are important aspects of the inquiry-based learning advocated by McCann et al. (2005). They also relate directly to the “intellectual character” that Ritchhart (2002) argues should be a priority of education. In addition, they reflect the idea that education should nurture the qualitative aspects of intelligence while helping students acquire information (Eisner 2002).

When students become adults, they will need to weigh pros and cons, consider implications, generate courses of action, form judgments, and make decisions under conditions of uncertainty. Consider, for example, how hypothesizing and associated critical thinking enters into the work of a scientist designing an experiment, a sales director creating a marketing campaign, a political advisor organizing an election campaign, a lawyer planning to defend a client, or a coach assembling a team of players. All operate from incomplete information in a context of uncertainty; all test their initial hypotheses against actual results and modify their thinking and actions accordingly. Examples exist across all occupations and professions. Students who have learned to keep their thinking within the bounds of what they know to be correct will not be as effective outside of school as those who realize, comfortably, that they may not always be right but can apply their best thinking. Such attitudes and actions lead to success in the world of work and human relations. See, for example, Covey (1989), Senge (1990), and Wallace (2010).

Students who frequently experience the kind of learning described here become comfortable about admitting ignorance. Given many opportunities to express their thoughts, they learn that no one is right all the time, and the need to be right diminishes. They must no longer feign forgetfulness or boredom to mask their lack of knowledge. Students’ healthy skepticism about their own knowledge, coupled with their interest in learning more, creates a genuine climate of inquiry in the classroom that enhances these tendencies further. It is not surprising that “overall, inquiry-based instruction produce[s] transferable critical thinking skills as well as significant domain
benefits, improved achievement, and improved attitude toward the subject” (Hattie 2009, 209–10).

Perhaps most important, students who experience this kind of teaching consistently learn that they are capable of thinking and take pleasure in it. They begin seeing school as a place that engages their interest and challenges them intellectually. Over time, their capacities for thinking, which have always been there, are brought to light, refined, and extended.

Supporting the Spirit of Inquiry: The Essential Role of the Teacher

For students to feel comfortable revealing uncertainty and generating hypotheses, they must feel that their ideas have value. To discuss productively after reading, they must have developed genuine interest in the information and see it as relevant to their interests and purposes. Teachers who make students feel such comfort and engagement have these characteristics:

- **Their highest priority is thinking.** During prereading discussions, they focus on hypothesizing. After reading, they have students interpret, question, and evaluate the information as well as recall it. They consider accuracy more important after reading than before reading but also value the thinking associated with achieving accuracy.
- **They elicit and pose effective questions.** Before and after reading, they don’t fish for right answers. They ask students to clarify, refine, extend, and articulate their thinking. Their questioning takes the discussion deeper and shows students the questions they might ask of themselves.
- **They guide students to evaluate their own thinking.** Before reading, they invite students to decide on the plausibility of their hypotheses, support their reasoning, and consider how sure they are of what they’ve stated. Teachers may introduce opposing viewpoints to sharpen students’ thinking. After reading, they focus on what students learned, but they consider citing evidence to support an answer as important as the answer.
- **They do not give anything away.** Before reading, they lead the discussion without divulging the information the students will discover as they read. They remain neutral, not revealing by facial expression, body language, or vocal responses who, if anyone,
is on the right track. They avoid giving students the answers and may even give the impression that they do not know the answers. After reading, they have students turn to the text for information rather than merely telling them what is in it.

- **They set a tone of genuine inquiry.** They celebrate curiosity, listen attentively, foster collaborative thinking, and welcome a diversity of perspectives. They do not put students on the defensive nor allow a climate of one-upmanship to take hold.

Facilitating effective discussions before and after reading requires considerable skill; it cannot be scripted. The teacher must listen to what the students say and respond accordingly. Wells and Chang-Wells (1992) describe what is required: “moment-by-moment decisions about how to proceed, based on knowledge of the topic, understanding of the dynamics of classroom interaction, intentions with respect to the task, and a continuous monitoring of the ongoing talk” (46–47). This is challenging because one must think on one’s feet.

For many, these needed teacher responses go against the grain. For example, when the history students suggested that Key penned his lyrics during the Revolutionary War, the teacher did not flinch. She also did not say *Good!* when others suggested the War of 1812. Her priority at this point was how the students used what they knew, or thought they knew, to respond to the challenges she posed. If they thought Key was on a ship, then where might the ship be and what might he be doing on it? If they thought he was a prisoner, why might he be held captive? Such thinking is more interesting and rewarding for students than trying to come up with correct answers before they have read anything about the situation. Such a discussion is also more satisfying to the teacher, who is not doling out praise to those who happen to know already what the class is about to learn. Praise for content accuracy is rightly reserved for the postreading discussion, when everyone has an equal chance to earn it.

### How Reading Informational Text Differs from Reading Narrative Text

The illustrative lessons in this chapter differ from those in the previous chapter because reading informational text is different from reading narrative text. Unfortunately, the profession has given scant attention to the differences. For example, the National Reading Panel (2000) did not investi-
igate the differences or how instruction might need to vary accordingly, and the influential Put Reading First (National Institute for Literacy 2006) makes insufficient distinctions between the two. In the early grades, many teachers routinely refer to both texts as “stories.” One day, students are told they will read a story about a boy who loses his mitten in the snow (with reference to a folktale); another day they are told they will read a story about snow (with reference to an informational text). At any grade level, instruction is most effective when it capitalizes on the differences.

Narrative texts contain artfully arranged sequences of events. Readers enter into the world the author has created or re-created and gain insight into the human condition. In contrast, readers don’t expect things to “happen” in informational texts; they expect to acquire facts, learn opinions, obtain explanations, or find solutions to problems. Of course, information can be presented in narrative form (e.g., biography), and a story may include useful information, but readers ordinarily do not read narratives to obtain information, and they do not dip into informational texts to lose themselves in created worlds. Both kinds of texts can be equally fascinating and enjoyable, so the important distinction is not between “reading for pleasure” and “reading for information.” The key is that readers approach the different texts with different purposes and expectations.

The different purposes lead to different kinds of reading experiences. When following a narrative, the priority is the unfolding story; with exposition, it is the information. Thus, the experience of reading a novel about a pioneer family is not the same as the experience of reading an article on the westward movement even though both are about the same topic. Conversely, the experience of reading exposition is much the same across subject areas although the content varies, and the experience of reading narration is similar across texts although settings, characters, and plots vary.

Another difference lies in the prior knowledge needed to engage successfully with the text. Most relevant to reading a story is an understanding of how humans think and act. Because all readers have acquired some of this knowledge from firsthand experience and from other stories or dramas, they can begin a new story without extensive preparation. In contrast, successful reading of informational text usually depends on readers connecting the new information to something they already know, including general or analogous knowledge if their topic-specific knowledge is sparse. Thus, more time and care are needed to activate prior knowledge in a way that primes readers to comprehend informational text.

Readers also approach these texts differently. They usually proceed straight through narratives, although they may look back occasionally to check a detail. Even when very curious,
though, they seldom skip to the end, knowing that will spoil the suspense. In contrast, readers may check the summary of an informational text first to find the key points, or they may skim the text to get an overview. They may reread some parts several times and skip others entirely. Adept readers modify their pace and direction according to the nature of the text and their purposes for reading.

Yet another distinction lies in what is most important to remember after reading. The concepts and details in an informational text are the priority. Most, if not all, are worth discussing, understanding, and possibly remembering after reading. In contrast, details bring stories to life, but if they are not critical to the main story line, they are not usually important to remember. For example, it’s more important to remember what happened to Cinderella at midnight than what her ball gown looked like. Thus, although students can be expected to note the details in informational texts, the point of reading a story is not to remember all the details.

An especially important difference lies in the kind of thinking ahead that is most useful when reading the two kinds of text. Predicting is appropriate for narrative texts because it involves forecasting events. Hypothesizing is suitable for informational texts because it involves generating tentative statements that can be confirmed or refuted by reading. The distinction is important, yet blurring occurs in classrooms. In particular, it is a common practice to ask students to make predictions when reading informational text, for example: *What do you think our text will tell us about bones?* or *What do you predict we will learn about Francis Scott Key when we read?* Questions like these put students in an awkward position. They don’t know what information is in the text and so can only guess what details the author chose to include of all that were available. They may consider what they have seen in comparable texts to figure out what might be in this one, but they will still essentially be guessing and at some level may consider the question unfair. Asking students to think this way is like asking them to use a saw to hammer a nail. They can do it, but it’s not the best cognitive tool for that mode of discourse.

Asking students to predict what they will find in an informational text, or what topics might be addressed in the text, deprives them of the kind of thinking that most enhances their comprehension. First, they have no need to use prior knowledge that is relevant to the topic. Also, the teacher cannot probe their thinking to generate uncertainty because their degree of uncertainty is as high as it can get. They don’t know what’s in the text, and they know they don’t know. Moreover, they have no meaningful reason to think more deeply about their guesses or to discuss why they made them. Finally, because such predictions do not prime them well for
reading, they may or may not notice the important information. Their reading is as superficial as their initial thinking.

Hypothesizing is a far better cognitive tool for informational texts because students think about specific questions related to the topic: Do we have all of our bones when we are born? Where do we think Key’s ship was located? Finding answers to their questions is much different from finding out if they correctly guessed the kind of information contained in the text. The difference is significant.

Making Better Choices for Teaching Informational Text

When planning lessons with informational text, teachers have choices. Some choices are effective, others less so. One choice is to assign the text for independent reading. Another is to provide an overview of the information and have students read to acquire the details. Still another is to have students read the text and write summaries. Yet another is to have students take turns reading the text aloud and responding to questions. These approaches are all common across curricula and through the grades, but they seldom lead to high levels of motivation, comprehension, or retention because they fail to engage students actively in thinking and constructing meaning. Other choices involve instructional strategies such as KWL (what we know, what we want to know, and what we learned; Ogle 1986) and Reciprocal Teaching (Palincsar and Brown 1984). These strategies can be effective, but teachers must guard against them becoming too routine. If teachers and students just go through the motions, the lack of intellectual and emotional engagement makes it less likely that learners will internalize and retain the new information.

If students are to gain the most from reading informational text, teachers must make thoughtful and astute decisions about how their students can most effectively interact with each new text to maximize understanding. Practices that encourage flexibility of thinking and responding are thus more effective than those that rely on fixed prompts or routines.
When we, as mature readers, peruse informational texts, we are driven by curiosity. We hear something that conflicts with what we thought we knew and want to clear up the discrepancy. We become aware of an intriguing issue or concept and want to know more. Our active pursuit of answers to our own questions makes reading pleasurable. Even if we don’t find answers right away, we persevere until our curiosity is satisfied. Sometimes we find unexpected information that leads to more exploration and discovery. Our reading is both informative and enjoyable.

We aim to give students similar experiences. We arouse their curiosity, make them feel comfortable about not knowing everything, and increase their confidence about generating hypotheses. We probe their thinking and engage them in discussion to develop their naturally inquiring minds while helping them construct meaning. With each reading experience, we capitalize on the opportunities provided by the particular group of learners responding to a particular text. Thus, the dialogues we include earlier in the chapter are meant to be perspectives, not prescriptions; examples, not protocols.

This artful way of guiding students through informational texts is not only pleasurable to learners but also deeply satisfying to us as teachers. We are always fascinated to see how students think about a topic before they read and delighted to witness their pleasure when they find the answers they seek. We also like seeing how well they understand and retain the information from these reading experiences. In short, we find it the best way to nurture students’ capacity to comprehend and respond to informational text.
Now What Do You Think?

A Follow-up Invitation to Our Readers

Here are the statements you thought about before reading this book. We invite you now to consider them again and decide again if you agree or disagree. You may want to compare your earlier responses with your responses now. Under each statement, we have expressed our own views.

1. Much of what we know about reading comprehension has been discovered within the past two or three decades.
The history of thinking about comprehension includes the work of Huey and Thorndike in the early part of the twentieth century, Bartlett’s seminal work in the 1930s, and the important work done at the Center for the Study of Reading in the 1970s and early 1980s. Our current knowledge is based on extensive historical foundations.

2. Classroom observation studies indicate that teachers in grades 1–6 spend a significant amount of time teaching students how to comprehend texts.
Durkin’s classic study is sobering. However, she did her research in the late 1970s. Since then, to a large extent in response to her work, teachers have given more attention to teaching comprehension. However, Durkin’s real message is that assessing comprehension is not the same as teaching comprehension. That caveat is as pertinent today as ever, especially given the current heavy emphasis on assessment. A related issue is whether teaching comprehension strategies is synonymous with comprehension instruction.

3. Young children are predisposed to make sense of their world, including understanding the texts they read in school.
Young children have a natural disposition to construct understanding. When literacy curricula are focused primarily on comprehension from the very start, children learn to read and write
as easily and smoothly as possible. However, although making sense of the world is a natural process, learners still need effective instruction to become effective readers and thinkers.

4. The anticipation or prediction of upcoming story events motivates students and enhances their comprehension.
Prediction arouses curiosity, which motivates students to read. Predicting also engages students’ prior knowledge, enhances their comprehension, builds their capacity for critical thinking, and has a positive impact on their overall attitude toward reading. A rich discussion of predictions, and the thinking behind them, is one of the surest ways to engage students in comprehending and enjoying narratives.

5. It is normal for several students to read the same story and generate different interpretations.
Not only is this normal, but such differences should be expected and encouraged. Because readers are different, they will legitimately construct various interpretations. Discussing these variations encourages students to consider their own ideas in light of others’ ideas, a key element of critical thinking.

6. Extensive preparation before reading enhances students’ understanding of a narrative text.
We find it unnecessary to teach vocabulary, provide an overview of the story, or invite students to share their personal experiences before reading. Too many of these activities build dependencies in students. We prefer inviting predictions and then moving into the story quickly. We have each done this successfully for many years.

7. It is a good technique to teach a skill or strategy before reading a story so that students can immediately practice it as they read.
Beginning a reading experience with skill or strategy instruction has serious disadvantages. First, the likely message is that learning to read is about learning a technique and the purpose
of the reading is to practice that technique. Second, focusing on a skill or strategy while reading may distract students from constructing meaning. Finally, strategy or skill instruction before reading is usually done out of context for learners and thus is not as effective as it could be. It is better to use the experience of reading and the context of the story as a basis for discussing selected skills or strategies.

8. A strong emphasis on explicit instruction in skills and strategies is a major priority when the goal is developing critical and thoughtful readers.

We have reservations about what has become a mantra for the literacy profession. We see many examples of so-called explicit instruction that are not helpful or productive for students. The term itself is difficult to define and means different things to different people. Explicitness should not be a criterion for gauging what constitutes instructional effectiveness. Perhaps as a profession we are confusing strategy instruction with comprehension instruction. They are not the same.

9. Prior knowledge is a critical factor in the successful reading of informational texts.

We view prior knowledge as the most critical factor in the reading of informational texts. Of course, some ways of accessing and using prior knowledge are more effective than others. It’s important for teachers to become skilled at having students use their preconceptions to generate hypotheses about what they are going to be learning.

10. A student’s misconceptions about a topic should be minimized or corrected before the student reads an informational text about the topic.

Students bring to their learning a host of preconceptions. The key is to get them out in the open, whatever they are. The act of reading for students then becomes a dynamic process of confirming what they already know and, more importantly, discovering new ideas and information. We cannot emphasize too strongly that teachers and students should not be afraid of misconceptions. In order to teach well, we have to understand what students know and how they think. That is really the essence of teaching.
11. Allowing students to share their misconceptions with peers may inhibit the comprehension and learning of the other students.

If students are going to share their preconceptions in class, their peers will inevitably hear misconceptions. There is absolutely no evidence, empirical or otherwise, that this is detrimental to learning. When students see their teacher actually encouraging them to be tentative, to risk being wrong, they can relax and explore their thinking fully. Of course, initial misconceptions can be addressed in substantive postreading discussions.

12. The process of reading informational texts tends to be similar across the various subject areas (e.g., science, social studies, math, health).

The process of acquiring information in different subject areas is very similar. We begin with what we already know and move from there to explore what we don't know. We read with hypotheses in mind and ask ourselves questions as we read. We often reread for clarification and deeper understanding. These are common cognitive practices that facilitate comprehension in any subject.

13. Talking is a primary vehicle for constructing meaning.

Talking is indeed a medium for constructing meaning. Often we say that we need to “talk it through” when we have an issue to understand or a knotty problem to solve. We can talk with others or with ourselves. It is through talking that we clarify and negotiate meaning. For the talk among learners to be effective, it must be focused and thoughtful.

14. One of the most effective ways to improve the quality of student talk is to change the nature of teacher talk.

We cannot emphasize too strongly that the nature of teacher talk in classrooms determines the quality of student talk, as the dialogues in this book illustrate. When teachers give up the floor, so to speak, and ask the right kinds of questions, they invite students to converse with each other in more productive and beneficial ways. Teachers who use talk merely to tell, explain, or elicit correct answers will restrict student thinking and learning.
___ 15. Writing is a major means of fostering comprehension and learning.
Writing leads writers to examine and clarify their own thinking and thus is a major aid to comprehension and learning. Writing involves constructing meanings and reflects the writer's thinking. Writing about a text enhances comprehension because the writers must reflect on the ideas and state them in their own words. Doing so puts the writer's attention firmly on the information in the text, and that enhances comprehension.

___ 16. First students learn to write, and then they write to learn.
Students should be writing to learn from the very beginning. Even preschool children who engage in scribbling are stating their ideas and their understanding of the world. Their inclination to communicate understandings needs to be encouraged and nurtured. Delaying an early focus on content (usually to concentrate on spelling or other mechanics) deprives children of the opportunity to engage in meaningful written expression. Imagine discouraging very young children from talking until they can articulate well and speak in complete sentences. No one would argue for that, and it's the same with writing. It's important for parents and teachers to celebrate first attempts at both speech and writing to focus children's attention on meaning.

___ 17. Writing models and frames can develop student dependency.
These aids to writing provide useful illustrations of how to organize and convey ideas, and reluctant writers may write more easily when using them, but students can become dependent on them if they are used too frequently or for too long a period of time. Students need many opportunities to organize and state their ideas as they wish, without feeling they need to stay within boundaries specified by others.

___ 18. At any grade level, the primary focus of writing should be on the quality of the content.
The content is indeed the most important aspect of student writing at all grade levels. In the earliest grades, it is paramount because it is at this time that young writers are developing their confidence as writers and their attitudes toward writing. Too much emphasis on mechanics can reduce students' confidence and lessen their interest in writing. As they develop confidence, they can pay more attention to language usage, sentence structure, spelling, and so on.
____ 19. The long-held view that first children learn to read and then read to learn is still viable in today’s schools. This is contrary to what we know about reading comprehension. Young children are reading to learn from the very beginning. Even preschool children are curious about what is happening in a story. They ask questions, they interpret pictures, and they want to turn the page to find out what happens next. They are also eager to learn from informational texts. Reversing the mantra yields a statement that is a much better guide: Read to learn and you will learn to read.

____ 20. Word recognition must be accurate and rapid before sufficient attention can be directed to comprehension.
We reject this argument as applied to reading. The relationship between decoding and comprehension is not either/or; nor is it sequential in nature. When students are making sense of what they are reading, their word processing (decoding) is actually enhanced. At the same time, skillful word recognition helps to increase the potential for understanding. Readers fare best when comprehension is their priority from their earliest reading experiences and when their teachers understand the complementary relationship between comprehension and decoding.

____ 21. When students read text orally to a teacher or classmates, their comprehension is usually enhanced. For more than a hundred years, the best scholars in our profession have asserted that students need to read silently when the goal is comprehension, so it is a mystery why round-robin oral reading continues to flourish in many classrooms and schools. When we want children to think about what they are reading, they should not be worrying about performing flawlessly in front of their teacher or classmates. Oral reading can be used for sharing ideas or reflecting on the craft of an author, but in those situations learners have read the text silently first and are rereading it orally to support what they are saying about the text. “Silent reading precedes oral reading” used to be a standard guideline and should again be embraced. Students at the earliest stages of literacy development are the exception. Their reading aloud serves as a kind of feedback mechanism. This behavior disappears as they mature.
22. An effective way of enhancing vocabulary growth is to address vocabulary after the reading of the text.
Attending to vocabulary after reading allows students to use the context of the text to talk about words in the text. Vocabulary instruction before reading is almost always out of context for the learner and makes word learning more difficult and less interesting. We have embraced this principle for many years and are pleased to see a trend beginning to develop in this direction.

23. Effective comprehension instruction usually begins with teacher modeling.
We think effective comprehension instruction begins with what the learners already know and can do. Modeling is most effective after students have engaged in some learning experiences and want to observe someone else demonstrate a relevant behavior. So we view with skepticism the advice: “Begin by modeling...”

24. Thinking about one’s own thinking is critical to effective independent reading.
Students’ understanding of what good readers and writers do, their awareness of their own reading and writing behaviors, and their reflections on their own thinking all lead to self-sufficiency. Metacognitive awareness empowers learners, helping them think for themselves and gain control over their own learning. Engaging students in metacognition is important at all ages and grade levels.

25. An important measure of effective literacy instruction is how readers perform when the teacher is not present.
Some students perform quite well in the presence of a teacher but seem lost when the teacher is not there to provide directions and make decisions for them. Students cannot be considered fully skillful readers and writers until they have developed the capacity to sustain their reading and writing independently. Excellent teachers cultivate independence, taking pride in students who can think for themselves and perform responsibly and productively on their own. It is not simply a case of turning students loose to proceed on their own, however. Instruction must have features that encourage and support independence. This is an important, though often overlooked, goal of teaching.
Thank you for sampling this resource.

For more information or to purchase, please visit Heinemann by clicking the link below:


Use of this material is solely for individual, noncommercial use and is for informational purposes only.