

# Teacher Questioning as Assessment

**Q**uestions are deeply engrained in the routines of the school day, where they serve a variety of functions. Questions help us understand students' ongoing and summary understanding of text, their metacognitive development, and the manner in which they use what has been learned from reading. By using questions, teachers seek an account of how well students are reading. The form and content of our questions should be informed by our knowledge of students, the curriculum, and our goals for instruction. These questions help us understand what students know and, most important, what they learn from reading. The types of questions we ask of our students can be as broad as our conceptualization of what students learn from reading and how they think. Questions help us model good assessment practice for our students. In each and every case, we must be sure that we are asking the right questions and that we are making full use of the student responses that our questions elicit.

## A Brief History of Questioning

Throughout the history of schooling, questioning has been associated with teaching and learning. Beginning in the fourth century BC, Socrates is credited with developing a method of rigorous questioning that serves two purposes: (1) using the question as a guide to inquiry and thinking and (2) using questions to determine what the person who answers the question knows. A teacher poses questions that encourage students to think in new ways and questions that provide the opportunity to assess students' learning from text. For example, after a fifth-grade class reads a textbook chapter on immigration, the teacher uses Socratic questioning to help students focus on their family histories of immigration and then how the reasons for immigrating as described in the chapter apply to these histories. The Socratic method also serves as a challenge: As teachers we should pose questions that assess different types of learning, that provoke thought, and that are worthy of response.

How we think about reading, the purposes of reading instruction, and the development of the students we teach should influence the nature of the questions we ask. Decades ago, behaviorism posited that we read with text as stimulus and comprehension as the response (Watson, 1913). Such a view of reading suggests that verbatim

From *Understanding and Using Reading Assessment, K–12* by Peter Afflerbach. © 2007 by the International Reading Association.

recital of text as the response to questions is a desirable benchmark of the accomplished reader. However, the evolution of our understanding of the mind and reading (Huey, 1908; RAND Reading Study Group, 2002; Thorndike, 1917) should be reflected in an evolution in the types of questions we ask of student readers. Cognitive psychology demonstrates that readers use prior knowledge, combined with skills and strategies, to construct meaning (Pressley & Afflerbach, 1995). We also know that most students are capable of complex thinking. We should ask questions that honor this understanding. Moreover, our increasing understanding of the socially situated nature of cognition and the increasing demands on students to develop complex literacy abilities for success in life should influence our theory and practice of asking questions.

Questions have been the focus of considerable attention over the past century (Bloom, 1956; Guszak, 1967; Pearson & Johnson, 1978), and it is important that we consult this knowledge as we plan to use questions in our classrooms. In assessment, questions are generally regarded as a means to access student knowledge. Stevens (1912) found that roughly two thirds of the questions asked in observed classrooms focused on recitation and memory of facts. In this case, students who were expected to memorize text information often proved up to the task and accurately answered low-level comprehension questions. Durkin (1978) examined fourth-grade classrooms and interviewed teachers about their reading comprehension instruction. She found that many teachers equated comprehension instruction with asking questions about text, as if posing the question somehow taught students how to answer it. In fact, this study signified the need for rethinking how reading is taught and making clearer the relationships between reading, teaching, and answering questions. The study also concluded that since questions are not an adequate means for teaching, then there is the need for the explicit instruction of reading strategies.

Questioning is prominent in present-day classrooms, but it occurs most often in the initiate–respond–evaluate (IRE) discourse form. The IRE model describes classroom practice in which teachers Initiate classroom talk by asking questions, students Respond to the questions, and then the teacher Evaluates students’ responses (Cazden, 1986; Mehan, 1979). Following is an example of the IRE form:

Initiate (teacher): What is a compass rose?

Respond (student): It’s the part of a map that shows directions.

Evaluate (teacher): Yes, that’s correct.

IRE discourse often focuses on “known answer” questions, in which the students’ task is, in part, to figure out what the teacher wants to know. In reading lessons, IRE questions often focus on literal and simple inferential comprehension of text. It is not that such comprehension is not important—it is critical. It is that failure to move beyond such understanding of student understanding with our questions is a missed opportunity to both promote and evaluate students’ more complex thinking.

## Categorizing and Classifying Questions

A history of good question asking is informed by theories of learning. These theories help us conceptualize how our questions may tap particular types of knowledge that students gain from reading. As learning theories are generated and our understanding of learning and how to assess it evolve, different approaches to asking questions also evolve. For example, Bloom's taxonomy of learning (1956) proposes that learning can range from relatively simple understanding (assessed with a literal comprehension question) to complex evaluative understanding (assessed with questions that focus on students' critical appraisal of what is learned).

Bloom's taxonomy of learning defines six levels of increasingly sophisticated human learning and performance that relate to our reading. If we believe that our reading instruction should help students learn to generalize from what they read, to critically question the authors of the texts they read, and to apply what is learned from reading, Bloom's taxonomy offers a theoretical means to categorize our reading assessment questions in relation to these instructional goals. From relatively simple to increasingly complex, the taxonomy charts possible outcomes of students' reading and associated learning. The taxonomy can serve as an aid to our efforts to develop a rich and appropriate array of questions to ask students as they read. Table 6 focuses on the different types of learning in Bloom's taxonomy and suggests the focus of our questions that can help us understand the nature of students' learning in relation to each level of the taxonomy.

In spite of our knowledge of how to ask diverse and appropriate questions of students' reading, the increased prevalence of high-stakes tests (Afflerbach, 2005) is a major influence on questioning practice in classrooms. These tests are scored within the constraints of question response format, meaning that the cost of scoring students' responses to questions often dictates the type of questions that are asked. Machine-scored responses are relatively easy and cheap to score, compared with students'

**TABLE 6**  
**Different Types of Questions Related to Different Categories**  
**in Bloom's Taxonomy of Thinking**

Category of Bloom's Taxonomy	Questions can focus on
Knowledge	Recognizing, remembering
Comprehension	Understanding
Application	Using, applying
Analysis	Determining attributes, comparing and contrasting
Synthesis	Making hypotheses, planning, speculating
Evaluation	Rating, judging

constructed responses to questions, and are favored over those items, including short and extended response items, which require human beings to score them. Further, these tests restrict the practice of having students regularly answer divergent thinking items or extensive constructed response items. Such items are useful when we are interested in students' understanding of text and when we acknowledge that there may be more than one correct answer to the question. A result is that to the degree that there is teaching to the test, there is teaching to low-level questions. The tests themselves thus act as a constraint on the types of questions and student assessment that may be conducted in classrooms. There is the tension of scientific research informing us about the depth and breadth of student learning that is possible in high-quality classrooms, the need for assessment questions that help us describe this learning, and the requirement that millions of students be assessed in reading with tests that are not capable of describing this breadth and depth.

To compound the issue of asking a limited range of questions (and knowing better), we are creatures of habit when it comes to current practice. Often, assessment practice is more a reflection of tradition than of principled decision making. Teachers not only ask questions but are also surrounded by questions. We receive a steady diet of questions: questions that follow reading selections and questions on quizzes, unit tests, and year-end examinations. This diet is often restricted, without providing examples of alternative questions. Unfortunately, as tests receive more and more attention, classroom practice that helps prepare students to take and succeed on high-stakes tests focuses on question types that appear on tests. Why would we ask middle school students to develop a theory of why poverty persists in East Africa when the high-stakes test question requires choosing, from alternatives, the capital of Tanzania? Teaching to the test is, in effect, teaching to an impoverished notion of what questions can tell us.

Pearson and Johnson (1978) characterize questions as textually explicit, textually implicit, and scriptally implicit. Each of the characterizations is important for us to understand, because they describe the types of reading, thinking, and answering that students must do to be successful. Consider the following paragraph:

Emma smiled with satisfaction as Radar sailed over the last jump. She knew that the prize would be hers. After crossing the finish line, she did a celebratory gallop past the spectators. The judges awarded her the trophy for First Place, Steeplechase. The trophy was silver with a young rider and horse jumping over a fence. As Emma got into the car with her parents, she thought of the place in her room where she would proudly display her award.

*Textually explicit* questions require students to locate answers that have exact wording in the texts they read. The answers are “right there” in the text. For example, the question, “What trophy did Emma win?” can be answered “First Place, Steeplechase.” *Textually implicit* questions require that students gather information from at least two different parts of text to successfully answer the question. Here, a representative question is, “Why did Emma gallop past the spectators?” and an acceptable answer is, “She

was celebrating winning the trophy.” *Scriptally implicit* questions require that students integrate information from the text with information in their prior knowledge to successfully answer questions. A representative question is, “Do you think Emma’s parents are proud of her? Why?”

The three distinctions of question type help us determine the type of comprehension and thinking that the student is capable of. They mark the growth of the reader from someone who can give back correct information from text to one who is manipulating knowledge contained in different parts of the text with his or her own prior knowledge. The question types may also provide information related to what and how much prior knowledge a student has (or needs) for a particular text. Each of the question types can reflect the ongoing development of how students read, think, and understand. The preceding examples also help illustrate how a student with little or no prior knowledge for the text content will be at a clear disadvantage in answering the same set of questions.

The work of Bloom, Pearson and Johnson, and others offers us frameworks for thinking about our questions. Categorization schemes for questions help us understand the type of thinking and learning that are reflected in students’ answers to our questions. Thus, they help us understand what, exactly, we are asking students to do with our questions. The frameworks challenge us to consider what kinds of questions we ask and the frequency with which we ask them. Reading questions must focus on the content of what is read, but the different frameworks remind us that questions can ask for verbatim response, they can ask us to make generalizations from text, they can ask us to read between the lines as when we try to determine an author’s purpose or intent, and they can ask us to evaluate the content and form of the texts we read. Each type of question plays a valuable role in helping us understand the important ways in which student readers develop.

## **Instructional Perspectives on Questioning**

The past two decades have seen approaches to questioning that may serve the double duty of helping teachers gather assessment information about their students while helping students learn to ask important and appropriate questions themselves. These programs and models include the K-W-L strategy (Ogle, 1986), question–answer relationships (QARs; Raphael & Wonnacott, 1985), and questioning the author (Beck, McKeown, Hamilton, & Kucan, 1997). Ogle (1986), working with theories of cognition and metacognition, developed the K-W-L strategy that requires students to ask the following questions: What do I Know about the text? What do I Want to learn from the text? What did I Learn from the text? The strategy is popular not only as a questioning routine but as a means of helping students develop strategic approaches to reading. In fact, the strategy is a strong example of questioning that guides students’ strategy use and reading, in addition to

promoting text-based comprehension. The K-W-L strategy can help us assess both students' learning from text and their strategic approaches to reading. Our evolving understanding of how students think and learn should privilege particular types of questioning practice, especially as we consider the complex curricular goals and sophisticated student thinking that are hallmarks of high-quality instructional programs.

Question–answer relationship strategies (Raphael & Wonnacott, 1985) help students understand the connections between questions that are asked and the answers that students give in response. In effect, the QAR approach helps students become metacognitive about the relationship of the meaning that is constructed through reading with the comprehension questions we ask them. The approach is built on the assumption that it is important for student readers to know where their answers come from and the suitability of using different sources of information for answering different types of questions. The four categories of question–answer relationships are (1) right there, (2) think and search, (3) author and me, and (4) on my own. *Right there* means that students should be able to find the content for their answers to questions from one source in the text. *Think and search* means that student readers should find information from different sources. *Author and me* requires that students use prior knowledge related to the text in combination with inferences they make about the text. Finally, *on my own* means that while the question is related to the text, the student's answer may or may not be related, and answers emanate from students' prior experience and knowledge.

Questioning the author (Beck et al., 1997) is a means for teachers to help students learn good questions to ask of authors of the texts they read and for teachers to gauge the development of students' ability to read critically. Questioning the author helps the reader approach texts from a purpose-driven perspective. Students may ask, Why did the author write this? What is the author trying to tell me? How well does the author succeed at the task of writing well? What are the strong and weak points of the author's writing and argument? Are there alternative approaches to this? Knowledgeable students ask such questions. One result of questioning the author should be that students better appreciate talented authors' approaches to writing, which in turn may have influence on students' own writing. It may also help students make accurate attributions for their comprehension of text. Poor comprehension may be the result of poorly written text, and students who understand this (and who can identify such texts when they are reading them) are in a good position to make the correct attributions for their performance.

Many questions that are asked of students focus on literal and simple inferential comprehension. Such questions will always play an important role in reading assessment. However, they do not fully represent the types of questions that are important to ask of students, nor do they help us assess reading, learning, and thinking at more complex levels. Consider the critical and evaluative questions we may ask of students. Students and other citizens in democratic societies must be able to ask questions about

the accuracy and trustworthiness of texts and the obvious and hidden agendas of the authors who create texts. Advertisements, editorials, political campaign documents, and other forms of persuasive text must be addressed with critical questions. Such questions help us determine if students understand the different purposes for authors writing particular types of texts, the apparent accuracy of accounts of factual information, the strength of an author's argument and claims, and the form and content of text (Muspratt, Luke, & Freebody, 1997).

## Characteristics of Effective Questions

If we envision success for our students in and out of school, does this success revolve around answering literal comprehension questions? Does it involve a student's ability to read between the lines, to stand in critical judgment of authors and their works, and to use that which is read and understood in tasks and performances? The answers to these questions must influence how we conceptualize and use questions in our classrooms. And this conceptualization and use of questions must be informed by the most recent and compelling theory, research, and practice related to asking questions. We want our questions to help students demonstrate their present understanding of texts read in school, as well as anticipate their future success in life.

Questions are used to determine what a student has learned from reading a text. Questions are also used to help us best understand the thinking and reasoning that students do in relation to their reading. We must examine our curriculum and goals of instruction to help determine the types of questions we ask of our students. If we ask students to read so that they can give us back information from text, then factual questions are suitable. If we want students to demonstrate that they know facts and opinions and they know when an author is being persuasive, then we need to ask questions that reveal student knowledge related to persuasive writing and content learning.

Appropriate questions result from careful and often complex analyses of the important components of teaching and learning. First, good questions are tied to the text. They seek to identify student learning that occurs as a result of, and in relation to, reading. Good questions represent an inquiry into clearly defined areas of learning. We want our questions to focus on important points of learning and attainable goals. Questions should be aligned with our personal and districtwide learning goals and curriculum. They should reflect a clear understanding of how students learn and develop, of how knowledge is constructed in particular content areas, and how reading operates.

Slack (1998) developed a list of factors to consider when developing questions and determining a sequence for the question-asking process. Figure 4 presents a checklist based on these factors that we should consider as we seek to construct effective questions. Examination of the checklist demonstrates that we must focus on both the content and form of our questions so that they are appropriate, accessible, and answerable. As

**FIGURE 4**  
**A Checklist for Asking Appropriate Questions**

- \_\_\_\_\_ I ask questions that are appropriately phrased and understood by students.
- \_\_\_\_\_ I ask questions that are at an appropriate level for the materials being covered.
- \_\_\_\_\_ I ask questions that require students to think at various intellectual levels.
- \_\_\_\_\_ My questions follow a logical sequence.
- \_\_\_\_\_ Student responses are used to guide my next questions.
- \_\_\_\_\_ My questions are consistent with the intended goals or objectives of the lesson.
- \_\_\_\_\_ I ask questions that assess student understanding.
- \_\_\_\_\_ I ask processing questions if a student's answer is incomplete or superficial.
- \_\_\_\_\_ I encourage students to answer difficult questions by providing cues or rephrasing.
- \_\_\_\_\_ I avoid closed-ended questions that restrict students' demonstration of learning.

From Slack, J. (1998). *Questioning strategies to improve student thinking and comprehension*. Austin, TX: Southwest Educational Development Laboratory. Reprinted with permission.

we develop assessment questions, we must remind ourselves that our questions model for students a specific manner of thinking about learning and knowing. Our questions teach students about particular stances they may take toward knowledge.

Consider the following five questions. Each could be asked as students complete a chapter on the American Revolution in their social studies textbook:

1. Where did colonial troops defeat General Cornwallis?
2. What is the theme of this chapter?
3. Why did the author choose these examples to illustrate the main idea?
4. Was the author successful in his strategy?
5. How do you judge your performance on these questions?

The first question is informed by the perspective that students should learn and memorize historical facts. The information exists on the written page and is to be learned and remembered by the reader. The second question asks students to synthesize a theme based on their literal understanding. The perspective that readers should be inquisitive about the things they read and be aware of authors' strategies and intent informs the third question. The fourth question asks students to make critical judgment about the author's ability. Finally, the fifth question asks the student reader to look inward and provide an account of metacognitive processes. Each question is worth asking, and each yields responses that tell us much about a student's reading development. The challenge is to balance our question asking so that no type of question is ignored and no type of question predominates, in relation to our teaching goals.

The questions students encounter related to their reading can shape their stance toward reading and knowledge and their very beliefs about the authority of the text. As important, the questions we ask of students consistently communicate what we value. Low-level questions asked across an entire school year send students a consistent message that memorization and retrieval of information from text are important. More challenging questions invite students to problem solve, problem find, and partake in complex thinking. Across the school career, our questions help shape students' epistemologies, for they send consistent messages about the nature of knowledge, what is important in the texts we read, and what "correct" interpretations of texts should be.

### ***Examining Different Types of Questions***

In this section we will examine the types of questions we may ask related to students' reading. It is common to think of reading assessment questions as focused on comprehension, for this is a primary role of questions. However, the means by which we measure and describe students' comprehension of text should not be limited to series of literal and inferential comprehension questions. We should consider questions that help us understand if students are able to apply what they learn from reading, to generalize from what they read to their lives, and to adopt critical and evaluative stances toward texts and their contents.

Introduced earlier in this chapter, the initiate–respond–evaluate (IRE) approach to questioning and assessment can be a direct path to certain types of student learning. For example, we can ask students questions like, What is the capital of Kansas? and What is a tectonic plate? and effectively evaluate their responses. More complex IRE questions might ask students, How is the French Revolution like the American Revolution? As the question becomes more complex, so must our evaluation and assessment. In fact, IRE questions can be used to assess student learning and performance at diverse levels of thinking and understanding. In contrast to the promise of gearing our questions to increasingly difficult levels of thinking and learning, the IRE structure predominates and classroom questions related to reading are relegated to relatively low levels of thinking.

Several caveats are necessary for teachers considering the IRE structure in questioning routines or identifying it as an already prevalent mode of classroom discourse. First, IRE is teacher dominated: The teacher determines what questions will be asked and then asks them. In the extreme, the teacher can become the sole model of the types of questions asked and the placement of questions within lessons. If we ask an array of questions that revolve around what is understood from reading, using that which is understood, and reacting critically to texts that are read, it may well be that students are getting a healthy sampling of the important types of questions to ask. However, if we continually ask lower level questions (those that require students to only identify literal information and make simple inferences), this does not help students better understand how different question types encourage different types of thinking.

Second, the IRE pattern establishes the teacher as the sole determinant of the appropriateness of students' responses. The teacher is the single person with the "right" answer to the question. Over time, this classroom routine and the approach to knowledge that it represents can suggest to students that our knowledge and understanding of content is all that matters, that divergent thinking is not appropriate, and that there is a single arbiter of students' answers to reading questions. Third, the IRE pattern represents a teacher monopoly on assessment. When we do all the question asking and are in charge of all the answers, there may be missed opportunities for students to learn to do question asking, peer evaluation, and self-evaluation. If the teacher generates the questions and then evaluates student responses, there are missed opportunities for students to learn these important reading-related strategies.

### ***Questions That Are Planned or Spontaneous, Divergent or Convergent***

Classroom assessment questions can be spontaneous or planned, and divergent or convergent. Spontaneous questions follow the flow of reading lessons and are prompted by our careful observation and monitoring of the lesson. Spontaneous questions help teachers assess students' understanding as it is developing. These questions help us make determinations of the degree to which students have read, understood, and learned from text in relation to lesson goals. They provide information that helps the teacher decide to reteach, elaborate and enrich, and move ahead during the reading lesson. Spontaneous questions are well suited to helping us get useful information. We do not plan for students to encounter difficulties with our introduction and explanation of plate tectonics, but we should plan to have contingency questions that guide us to a detailed understanding of individual students' developing knowledge and current needs. The contingent and spontaneous questions fuel our ability to identify and capitalize on teachable moments.

Planned questions, on the other hand, can provide coverage of important school learning in relation to goals of the lesson, as determined a priori. We go into the questioning routine knowing what we want to check with our assessment questions—these must be targeted at important anticipated outcomes. Key vocabulary and the concepts they represent, main ideas, and supporting details are all examples of appropriate foci for planned questions. Students' responses to such questions help us determine their understanding of key concepts. When our students read an article about plate tectonics, we are interested in their understanding of earthquakes, the Richter scale, and the San Andreas Fault, as well as the tectonic plates themselves. As teachers we may develop familiarity with aspects of curriculum that pose challenges within particular lessons for particular students. For example, we may determine over time that the tectonic plate article is engaging but that students' understanding of how tectonic plate movement leads to earthquakes is elusive. Our attention to these challenges means that we

can build a repertoire of planned questions, informed by our observations of student performance, that focuses on the relationship between tectonic plates and earthquakes. Student readers will benefit from a mixture of spontaneous and planned questions. The talented teacher approaches reading assessment with ideas for both.

We may ask students divergent or convergent questions. Convergent questions are made with the expectation that different students' responses, when accurate, will be similar or identical. There is often one "correct" response expected with convergent questions. For example, we can ask, Where is the San Andreas Fault? and be fairly confident that there is a single correct answer to the question. In contrast, divergent questions may encourage a classroom of students to each answer the same question in a different, suitable way. We can ask, Why would people build homes close to the San Andreas Fault? Determining the quality of the response may be more difficult with divergent questions, because the questions invite different paths to solutions, different explanations for phenomena, and different criteria for explanation. Thus, the means to evaluate responses to divergent questions should be developed with the understanding that answers may vary and still be correct.

### ***Question Comprehensibility, Wait Time, and Passage Independence***

When we ask questions we are often interested in how well students have comprehended text. Our questions are texts themselves, and we must query, What is the comprehensibility of the questions we ask? We typically think of difficulty in reading in relation to the match between the reader and the text, the degree to which a text contains new and difficult material, and the motivation that a reader may (or may not) have for reading. Assessment questions are a specific genre of text and we must scrutinize the questions we ask for how well students understand them. A difficult question can confuse students who, through more appropriate questions, might demonstrate comprehension of what they read. When we construct questions, we should consider the vocabulary of the question and the complexity of the prompt. If the vocabulary demands of our question exceed the vocabulary demands of what we want to learn about through questioning, then we need to revise our questions. (For more on making accommodations, see chapter 9, "Accommodation and Reading Assessment.") We should also anticipate the sense that a student might make out of a question that does (or does) not coincide with our intention.

Between a teacher's posing a question and a student's response to that question exists wait time. Every question that we ask may warrant wait time, from a seemingly simple literal comprehension question to a complex critical and evaluative question. We should not expect that comprehensive answers spring fully formed from students' minds. Thoughtful answers require thought and thought requires time. Wait time will vary from question to question and student to student. The amount of time needed to

answer a question is influenced by several important factors, including focus of the question, students' comprehension of text, comprehensibility of the question, the complexity of the thinking required to give an adequate response, and students' individual differences. The wait time that is given to students' responses to questions should vary based on our best estimate of these factors. In effect, it is our responsibility to "get inside" the question and understand the demands that it creates for students, so we can develop legitimate estimates of how much time a student needs to adequately think about and answer a question. This estimate will be one with parameters so that we have a general sense of what a question demands and what our individual students require in terms of time to respond.

Sometimes students can answer our questions without comprehending the related text. Thus, questions should be vetted for text independence. Students may be able to provide correct answers when they have not comprehended the text addressed by the questions. This situation is prominent in multiple-choice question situations in which students with no idea of a correct answer in fact answer correctly, without any understanding of text: The lucky guess helps. Also, students may come to a correct answer by faulty reasoning or by using prior knowledge related to the text but not a product of comprehending the text. Asking students to provide reasons for their answers serves as a check on their answers, and it helps us best understand what a student was thinking when giving a particular answer.

A further consideration for our questioning is the demand that the response creates. Following our questions, students may be required to speak or write a response. This response format is one that must be considered as questions and sets of questions are created. Multiple-choice questions require that the reader choose the correct answer, often from among four or five possible answers. A well-developed multiple-choice question can provide valuable information about things students learn. As well, our questions may prompt students to provide constructed responses, responses that we may have labeled "fill in" in the not-so-distant past. Brief constructed responses require that students provide short answers, typically ranging from one to three sentences. Extended constructed responses can demand that students provide sentences, paragraphs, or sets of paragraphs. In each instance, our estimation of the item format that will best provide useful information is important. Like oral responses, written responses may have considerable wait time demands, not only for the students to find and retrieve information from their long-term memory but also to draft and revise the response to the question.

Good questions evolve over time because teachers who ask the questions pay attention to how students respond. A question and answer that seem excellent from our teaching perspective must be checked against students' performances and perspectives on the same, especially in culturally diverse classrooms. Before any question makes it into the classroom routine, we must ascertain that it works. We cannot be content with determining if a student's response to a question is "right" or "wrong." We must uncover the

student thinking that led to the response to the question. Only the examination of this thinking will allow us to determine if what we imagined as a typical thought process and question response is what students actually do when responding to the question.

## **Assessing Responses to Questions in Retellings and Discussions**

Earlier in this chapter we learned about the IRE discourse structure, which focuses on individual questions. Yet, in many classrooms there may be opportunities to assess students by listening to their retellings and discussions of the texts they read. We can get information related to students' understanding of text by examining the classroom context that surrounds reading. Do students discuss their understanding of stories and informational texts? Are they empowered to do so? Do students give retellings that help us fill in the gaps of our understanding of their comprehension? As a prelude to systematic questioning, what can a reader tell about what is read, unprompted? (Oral retellings of what students read are also examined in chapter 2, "Reading Inventories.") There are considerable benefits to student discussion of the things they read (Wells, 1989). As we become sensitive to the content and structure of students' discussions, we are able to find answers to our questions without asking them. Of course, done successfully, this demands that teachers are able to observe and analyze students' discussions in relation to a set of questions. Task analysis of the important things that students do when they read and practice with listening to students and matching discussion to questions can make this an important part of the classroom assessment routine.

### ***Questions That Accompany Commercially Produced Curricula***

Teachers who are knowledgeable about questioning and who have the time to do so can create series of questions for most of the texts their students read in class. More often, questions are part of commercially produced curricula, and it is important to scrutinize them. We must consider when and where the question we would ask was created. When questions are developed far from the here and now of reading in our classrooms, there may be reduced chance of a particular question being the best question. Questions can guide or follow thought. The questions that accompany textbooks in social studies, science, music, art, and literature are, hopefully, talented question writers' best estimation of what is needed to focus students on material and to elicit their responses. The questions tend to be knowledge-tracking questions, attending to how well students learn pre-determined content. They are based on anticipated student work and outcomes, which may or may not be close to the work of particular students in our classrooms.

Approaches to questioning in commercially produced materials vary considerably. These questions anticipate an average level of understanding and insight, and they assume

uniform progress among students. The questions, through their focus, predetermine the important information in the texts that students read. They also predetermine correct or acceptable answers. Teachers should always check the stated goals of the lesson and accompanying questions with their priorities. Will a set of questions tell us much about a student's learning and remembering key details and main ideas but little about how the reader can judge the trustworthiness of the author? Careful examination of the questions that accompany commercial reading materials can help teachers make decisions related to their suitability. A question (or set of questions) may be all that is needed by the teacher to determine that important learning is being assessed in an appropriate manner. In such cases, questions can be used as provided in teachers' manuals. In other cases, questions may focus on part of what the teacher considers to be important learning related to reading. Such questions should be augmented by the teacher's quest for more information. There may be questions that are directed toward eliciting important information, yet they do not present the best question for a particular student in a particular context. At different times in the school year and for different readers, the questions, What is the theme of this essay? Do you think the author makes a convincing argument? and Why? are entirely appropriate.

## Questioning in Joan's Fourth-Grade Classroom

The students in Joan's classroom represent a diversity of reading achievement levels and reading interests. Throughout the school year, Joan is interested in making her questions count, and she sets as a personal professional development goal the ability to ask the right question. What is the right question? For Joan, the right question is determined by a complex set of factors: a student's developmental level as a reader, the content of the text that is read, the type of thinking that is important to model and then require of the student, and the testing landscape in the school and district. While these factors are at first burdensome for Joan as she formulates and chooses questions and determines when to ask them, she is confident that the questions in her classroom are worth students' while and that they reflect important teaching and learning. Joan's fourth-grade students are in their last year in a largely intact classroom. The classroom is self-contained, without any pullouts for particular content areas. One result is that Joan can approach her question-asking strategies across the school day and across content domains. Joan observes students reading and thinking in science, social studies, mathematics, and English, and this provides her with a continual source of information related to students' current state of development and corresponding instructional opportunities. She has the luxury of knowing her students across the school day and the responsibility of attending to the detail of their development so that her teaching and accompanying questioning are appropriate.

Joan is a strategic question asker, as she knows that good question-asking practice is not just a matter of having a range of questions that may evoke different types of student thinking and reveal different types of comprehension and learning. Joan knows that good questioning is also dependent on the interactive dynamics between teacher and student and question and answer. For example, in leading up to a relatively complex question that requires students to propose an explanation (i.e., How can global warming be slowed while students continue to use electricity and automobiles?), Joan knows that the student must demonstrate a literal understanding of the scientific findings related to global warming research. Assuming that this understanding exists without first questioning students to ascertain this could render the subsequent questions worthless.

To reach her goals for questioning, Joan relies on an “arc of questions” (Wolf, 1987) in which “simple factual inquiries give way to increasingly interpretive questions until new insights emerge” (p. 6). The questions help her address student learning and development related to learning about global warming, and the questions build on one another. While the set of questions is intended to help students demonstrate their knowledge and thinking at increasingly complex levels, it also has a diagnostic feature. More simple questions (e.g., What is one cause of global warming?) are asked prior to more complex questions (e.g., How can global warming be slowed or stopped?). This sequencing allows Joan to tailor questions to individual students. Joan finds it useful to think about an arc of questions in relation to students’ current levels of reading ability and content area knowledge, along with Bloom’s (1956) levels of thinking. Table 7 contains examples of questions that Joan includes in her arc of questions and indicates their increasing complexity and relationship to Bloom’s taxonomy. This arc of questions represents Joan’s comprehensive and hierarchical questioning routine, and it demonstrates her attention to using questions to help shape and assess her students’ thinking.

### ***Consequences and Usefulness of Questioning***

Joan believes that it is important for students to apply what they learn from reading to identify and solve problems, to engage in generative thought, and to be critical consumers of the information contained in the texts they read. She surveys questions and determines those that tap literal and simple inferential comprehension. As she categorizes her instructional goals in relation to Bloom’s taxonomy, she can determine the degree to which the questions she asks of students focus on the different types of learning within the taxonomy. A result is robust questioning. Students need to establish accurate literal understandings of text, but they must also complement that understanding with the ability to answer questions about authors’ motives, persuasive features of texts, and the degree to which claims in the text are supported with evidence. A more typical approach of using literal and inferential questions would not provide as rich assessment information.

**TABLE 7**  
**Arc of Questions in Relation to Bloom's Taxonomy and Joan's Classroom**

*Scenario: Students are learning about global warming, reading from different texts.*

1. Bloom's Taxonomy category: Knowledge, or recalling data or information.

Joan's question to her students: What is one cause of global warming?

2. Bloom's Taxonomy category: Comprehension, or understanding the meaning, translation, interpolation, and interpretation of instructions and problems. Stating a problem in one's own words.

Joan's question to her students: How does global warming occur?

3. Bloom's Taxonomy category: Application, or using a concept in a new situation or unprompted use of an abstraction. Applying what was learned in the classroom into novel situations in the work place.

Joan's question to her students: What might happen with global warming as the number of automobiles increases?

4. Bloom's Taxonomy category: Analysis, or separating material or concepts into component parts so that its organizational structure may be understood. Distinguishing between facts and inferences.

Joan's question to her students: What proof of global warming is offered by those people who claim it is a potentially deadly problem?

5. Bloom's Taxonomy category: Synthesis, building a structure or pattern from diverse elements. Putting parts together to form a whole, with emphasis on creating a new meaning or structure.

Joan's question to her students: What would you include in a comprehensive plan to reduce global warming?

6. Bloom's Taxonomy category: Evaluation, or making judgments about the value of ideas or materials.

Joan's question to her students: Are the alternative explanations for global warming that are given by those who are opposed to taking action against global warming credible? Why?

There are several critical consequences and uses of the questions that Joan develops for her students. First, the questions help her understand how well students learn course content. The questions tap students' literal, inferential, and critical understandings of the texts they read. Second, the questions, having tapped students' literal and inferential comprehension, then require students to demonstrate diverse approaches to thinking and increased sophistication in their thinking. Questions help Joan understand how students use that which they comprehend. Importantly, questions serve to both

provoke thinking and to assess it. For example, Joan asks how students might adopt different perspectives to comment on the portrayal of global warming in their science text. Without the question, it is not clear how many students would be moved to this type of thinking. And with the question, Joan also has a means for judging students' approaches to the thinking. Joan's questions provide process and product information about student reading development, information that can be used in both formative and summative assessment.

The consequences for Joan's students are substantial. They are continually asked to demonstrate their understanding of text through an array of questions that target literal and inferential understandings. These questions describe the extent to which students "get" the text. They also serve as practice for the high-stakes tests at year-end, which are heavily weighted to measure students' literal and inferential comprehension. Students in Joan's class get consistent models of how to think, provided by diverse types of questions, and they are learning to ask questions of themselves as they read. These questions fall into two broad categories—comprehension and metacomprehension—and help students independently determine the degree to which they understand texts that they read.

Over time, the varieties of questions that are asked in Joan's classroom (and in grades prior to and after fourth grade) have another serious consequence for students: They learn that what they read is often worthy of investigation and challenge. Questions model for students different ways of thinking and stances toward reading and knowledge. As fourth graders, these students are literally bombarded with advertisements and other types of propaganda that they encounter in newspapers, magazines, and on the Internet. Questions that uncover a hidden intent of text, an author's strategy for being persuasive, and the trustworthiness of text help students navigate their daily, personal lives and help us prepare students for critical reading throughout their lives.

### ***Roles and Responsibilities Related to Questioning***

Across a school career, the type and frequency of questions used in classrooms can have profound influence on students' thinking, their stances toward knowledge, and their epistemologies. Consider the student who receives an exclusive mix of literal and inferential comprehension questions across elementary school. The student may become adept at giving back text to answer literal comprehension questions and at combining literal information from text with prior knowledge to achieve inferential comprehension. The steady stream of questions focuses on knowledge checking, an important outcome of our reading. Unfortunately, this student may not have the opportunity to begin to question the authority of the text, to challenge an author's claims, or to determine the subtext that underlies an author's explicit and implicit arguments. In U.S. society where there is consistent initiative to convince people that they need to buy things

and where truth is hard to find in political campaigns, our students must be able to ask questions of texts that put them in powerful (and not powerless) positions.

Joan is convinced that good teaching in fourth grade results not only in students learning in the content areas but also in further development of students' ability to think and reason. Future grades' curriculum in middle school and high school will demand that students master literal and inferential comprehension of texts so that they may critically evaluate them. Joan knows that application of knowledge learned from reading is not only demanded in the upper grades but also that such application of knowledge is central to much of the reading that students will do outside of school. She is responsible for certifying that students learn from text in each of the content areas and can apply the knowledge learned. She is responsible for helping her students prepare for high-stakes tests that will determine their futures. And she is responsible to the ideal that good questions beget more good questions: Students who are asked diverse and necessary questions learn new ways of thinking and can internalize and use these same types of questions in their future.

Joan's questions are informed by her ideas of good practice. She makes sure that she provides adequate wait time for all students to construct appropriate responses, and she makes sure her questions are comprehensible for her students. She conducts task analyses in relation to her questions, always double-checking to see that what she anticipates being involved in the process and product of student answers is actually there. Joan resists the idea of questioning becoming a comfortable habit in the classroom. She knows that questions can lead to the establishment and reinforcement of power relationships in classrooms. They can be used to acknowledge particular students' contributions or lack of contribution to the class. For Joan, asking, What's the right question? sets the parameters of her roles and responsibilities. She is focused on determining how and to what degree students are learning content from their reading. She regularly asks questions that focus on what students understand from the textbook chapter on earthquakes, the primary source texts in social studies, and the short story in English. She checks for her students' ability to understand math word problems.

Joan continually monitors her questions: She believes that most good questions need a tryout period. To refine and polish her questions, Joan pilots them, and this allows her to apply her knowledge from the task analysis to help troubleshoot those questions that Joan believes are important but that seem to be causing difficulty. She structures her question-asking routines so that they include opportunities for students to learn how to ask important questions of themselves. She models, explains, and discusses with her students why we ask questions, where questions come from, how they then connect to our learning goals and tasks, and how student responses to questions are evaluated. In addition, she amends the questioning routine that accompanies the commercially produced materials to include questions that direct students to the nature of questions, knowledge, and power.

## ***Reliability of Questioning***

As a teacher who creates many different types of questions for her students, Joan follows a detailed routine for ascertaining the reliability of the questions. At the heart of this routine is a task analysis of what, exactly, students must do to understand and respond to the questions. (For more information on task analysis, see Reading Assessment Snapshot: Task Analysis, p. 26.) The task analysis is conducted with the goal of creating questions that provide reliable information. It allows Joan to “go through the motions” that her questions will demand of her students and to experience, firsthand, what answering the question entails. She considers first the comprehensibility of the question. Will her students understand it? Is this literal question more challenging than the text students must read to answer the question? Next, she examines the fairness of the question. Does it privilege certain students who already know something of the content of assigned reading? Is the question straightforward and not confusing? Can the question be answered without reading the text? Next, Joan checks for confounds. (For more information on confounds, see Reading Assessment Snapshot: Confounds in Reading Assessment, p. 187.) Will a student’s speaking or writing ability influence her interpretation of that student’s reading achievement? She examines each question to determine the things a student must know and do to answer well. She considers the complexity of the question in relation to her students and estimates the wait time that is necessary for each to answer.

The reliability of her assessment also depends on her interactions with the students during questioning. When asking questions during a lesson, Joan can discuss, model, and suggest things that lead students to insights and correct answers. This is a regular part of Joan’s question asking during class. In contrast, Joan is consistent in her treatment of students when asking summative assessment questions. She does not provide hints or clues when questions are related to unit tests, as she knows that students must be prepared to take consequential, high-stakes tests.

## ***Validity of Questioning***

Joan’s questions must pass two stringent tests related to construct validity. The first test focuses on her conceptualization of reading comprehension as including literal, inferential, and critical or evaluative comprehension. Joan makes sure that her array of questions honors the construct of comprehension by asking questions that provide students with opportunities to demonstrate these different levels of thinking. The typical arc of questions in Joan’s classroom reflects her knowledge of what it means to understand text. Students must construct literal and inferential meaning of the things they read, while understanding why texts are written, authors’ acknowledged and unspoken agendas, and how the contexts in which we read can influence what we take from a text.

A second test relates to the thinking that is done by students as they answer questions. Bloom’s taxonomy suggests increasingly complex and sophisticated thinking, and

the array of questions in Joan's classroom reflects this construct. Thus, questions serve the dual role of providing detail on what students learn and providing a model of diverse and sophisticated thinking. They also reflect ecological validity, in that Joan strives to instill further inquisitiveness in her students by posing and modeling good question asking.

## Summary

There are many types of questions we may ask when we assess our student readers. These questions should be informed by our knowledge of theories of thinking, our students, strategies, cognitive development, the role of the reader, and the curriculum. Across history, questions have been central to reading assessment. We ask questions because we want to know about student learning and progress. Questions are central to assessing and evaluating student reading, yet many questions do not reflect our detailed understanding of the suitability of particular types of questions for particular learning goals and reading curriculum.

Our questions should reflect the nature of learning and thinking we expect of our developing readers. Questions are influenced by diverse factors that include their structure, syntax, and vocabulary. As well, effective questioning practice reflects our attention to factors that include wait time, the questions' relation to retelling and discussion, and the development of series of questions that represent a range of comprehension levels and the range of content that we are interested in assessing.

---

### ENHANCING YOUR UNDERSTANDING

---

1. Videotape a reading lesson. Examine your questions: the type of question, the comprehensibility of the question, the wait time, the clarification, teacher dominance, and relation to different learning goals. Who asks questions and who answers them? How much class time is involved? In relation to the information in this chapter, would you characterize the mix of types of questions you ask as optimal? Why?
2. Create an arc of questions in a particular content area that helps you understand student achievement from the level of literal understanding through critical analysis and application of what is understood from reading.
3. Think of a recent learning experience you had. How did you know how you were doing? How did you know how well you did upon completion of the task? What can this teach you about good questions to ask of students' reading, assessment, and self-assessment?

## Process and Product Assessment

---

Useful reading assessment revolves around the quality of the inferences we can make about students from assessment information. The accuracy and suitability of these inferences are influenced by the relationship of the assessment to instruction and student learning. With this in mind, it is important to consider how assessments focus on the processes or products of student learning and achievement.

Process measures help us examine the means by which students learn and achieve. These processes might involve determining the match of the letter *B* with the spoken sound /b/, reading fluently, or constructing meaning from text. For example, a teacher observation conducted during reading instruction can provide detailed and immediate assessment information related to the processes fourth graders use as they work with the K-W-L procedure (Ogle, 1986). The teacher observes students making note of the things they Know and the things they would like to Learn from the text to be read. She observes them monitoring their work so they can effectively answer the L (What did I Learn?) section of the K-W-L exercise. The teacher's observation is process centered, so the inferences made about students derive from a more direct view to those processes.

In contrast, product measures are removed in several ways from the acts of instruction and learning. First, product assessments focus on learning that is assumed to be, in some sense, complete. This means that our inferences about students and their learning may be limited to the nature of products that are the end result of processes. We may consider completed performance assessments, students' final drafts of writing, or correct or incorrect responses to test questions. In these cases, our inferences are necessarily backward-looking—that is, we can determine that learning occurred or didn't occur, based on the student response, but from that point we have little or no information to understand how the product was created. We may lack the understanding of how, what, and when particular processes were (or were not) used. Product measures reveal little or no information about the processes that students used (or tried to use) in creating them. Thus, we are not often in a position to use product assessment in a diagnostic manner. Nor are we in a position to use product assessment for formative assessment because it has little explanatory power to guide our inferences and our instruction.

It is important to become familiar with both product and process assessment and the types of inferences we are required (and permitted) to make, based on the assessment information. Whatever the nature of the assessment, the quality of the inferences we make from product or process reading assessment must be high—a suitable result of our understanding of the nature of the assessments we use and the inferences that are justified from the data they provide.