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# Assessing comprehension: A classroom-based process

*Much can be learned about students' comprehension from observation in the classroom. This information can and should be used to supplement standardized test scores.*

Over the years, teachers and administrators have begun to rely more frequently on standardized tests to determine students' growth in reading comprehension. Although such measures have a place in any educational system, they should not dominate an assessment process because they limit the information provided to the teacher and there is a delay in reporting of the results. Without more significant indications of the meanings students construct when reading, teachers cannot refine their instruction effectively. However, the major implications of the No Child Left Behind Act of 2001 (2002) in some U.S. school districts have led to a focus on multiple-choice questions to better prepare children for standardized tests. We believe that, even though such questions can provide some important information, they do not enable the teacher to get at the heart of comprehension. To truly understand students' constructed meanings, teachers should look to a variety of sources, such as ongoing, classroom-based assignments, to distinguish variations in comprehension and adjust instruction accordingly. By examining a variety of student work, teachers will notice divergent responses that reveal that comprehension is not an absolute to be measured once with a single text, but an elusive domain to be monitored regularly (Duke & Pearson, 2002), with a variety of texts, considering the learner's pri-

or knowledge and purposes for reading. By continually assessing comprehension, the teacher can adjust instruction to meet each individual's needs immediately.

We (the authors) have been collaborating with one school district in Wisconsin where reading specialists and teachers have developed a unified approach to classroom-based assessment of comprehension. In this article, we focus on how this process influenced practice. Our roles in the district varied: Judy (first author) was a researcher, investigating how the process influenced one teacher's instruction; Susan (second author) was a consultant, working with the district to develop, evaluate, and modify the assessment process.

## One district's assessment process

One Wisconsin school district has developed a comprehensive, classroom-based assessment process (McMahon, 2003) to encourage teachers to examine students' specific, ongoing comprehension needs and to design instruction accordingly. This district discovered that standardized test results alone were not sufficient indicators of students' reading comprehension and, by themselves, did not help guide teachers in making educational choices centered on students' needs. By using a classroom-based process, teachers hoped to gain a clearer understanding of students' comprehension. Although the district considered standardized tests to be one indicator of students' progress, it also embraced a commitment to let teachers use alternative ways to gather information about their students' specific comprehension needs. As a result, this in-

formation became more effective at guiding reading instruction and empowering teachers.

The assessment project was two-pronged. First, to ensure that teachers incorporated the multiple facets of comprehension with instruction (see Table 1), the district designed a process requiring teachers to apply a four-point rubric at least twice a year—in fall and in spring. For this, teachers collected a sample of classroom work and reported each student’s comprehension (see Figure 1). Second, the reading specialists worked continually with teachers to support ongoing assessment that influenced instruction. In this report, we show how the process had become an integral part of one teacher’s daily practice.

### **Using the assessment process in a fourth-grade teacher’s classroom**

To understand how the district’s assessment process influenced one teacher’s practice over time, Judy spent a year working in a fourth-grade classroom. At the time, Kelly Krueger (all teacher

and student names are pseudonyms) had been teaching in the district for four years, during which staff development focused on incorporating Book Club (McMahon & Raphael, 1997) and assessing students’ learning through the use of classroom-based student work. Kelly was invested in the assessment process and believed it complemented her teaching and her understanding of reading comprehension. While observing Kelly’s instruction, Judy noticed three dominant patterns: Kelly modified instruction based on the comprehension needs of her students, often modeled questioning as one facet of comprehension, and stressed text structures through the use of graphic organizers to highlight another facet of comprehension—organizing information.

To fully appreciate the value of this assessment process, the district encouraged teachers to examine students’ individual differences as readers to provide differentiated instruction. Because Kelly embraced this approach, she was able to identify students’ needs and plan instruction accordingly as described in the following sections.

**TABLE 1**  
**Facets of comprehension**

<b>Prior knowledge</b>	Being sure it is present Activating
<b>Literal comprehension</b>	Restating information after reading
<b>Interpretive comprehension</b>	Working with ideas after reading (recognizing cause/effect, compare/contrast)
<b>Critical thinking</b>	Expressing/supporting opinions after reading, evaluating positions, analyzing relevance and credibility
<b>Story parts</b>	Recognizing and analyzing literary elements (setting, character, plot)
<b>Word meaning</b>	Using strategies to determine the meaning of new words found while reading
<b>Organizing information</b>	Recognizing how information is organized (sequence, cause/effect, problem/solution, main idea/supporting detail, compare/contrast, description)
<b>Visualization</b>	Creating mental images while reading
<b>Analyzing questions</b>	Identifying types of questions and answers related to readings
<b>Generating questions</b>	Creating questions of authors, texts, others related to readings
<b>Summarizing</b>	Recognizing, organizing, and expressing the most important ideas in a given selection
<b>Applies reading strategies in all areas</b>	Uses comprehension strategies to understand any written material (e.g., science, social studies, math)
<b>Recognizes and remedies comprehension breakdowns</b>	Recognizes when text no longer makes sense and applies an appropriate, effective strategy to construct meaning

**FIGURE 1**  
**Comprehension assessment summary sheet**

Reading comprehension assessment summary

Student \_\_\_\_\_ Grade \_\_\_\_\_ School year \_\_\_\_\_ School \_\_\_\_\_

**Levels of understanding**

- 4–Sophisticated understanding
- 3–Solid understanding
- 2–Emerging understanding
- 1–Understanding not yet demonstrated

This represents a summary of a student’s reading comprehension from the beginning to the end of 1st quarter and the beginning of 2nd quarter to the end of 3rd quarter.

Areas of comprehension and student’s abilities	Comments/examples	Summary level	
		1st qtr.	2nd qtr.
<p><b>Literal comprehension</b> Restate information after reading</p> <p><b>Interpretive comprehension</b> Work with ideas after reading; for example, recognize cause/effect, compare/contrast, predict, and draw inferences</p> <p><b>Critical thinking</b> Express and support an opinion after reading, evaluate positions, analyze relevance and credibility, and draw inferences</p> <p><b>Story parts</b> Recognize and analyze the setting, main characters, events, problems, and solutions in a story</p> <p><b>Word meaning</b> Use strategies to determine the meaning of new words encountered while reading</p> <p><b>Organizing information</b> Recognize how information is organized—for example, sequence, cause/effect, problem/solution, main idea/supporting detail, compare/contrast, and description</p> <p><b>Visualization</b> Create mental pictures while reading; this is assessed by asking students to create artwork during and after reading—students are not assessed on art ability</p> <p><b>Questioning (analysis and generation)</b> Identify the type of question being asked of them, apply an effective strategy to answer it, and ask appropriate questions as a result of reading</p> <p><b>Summarization</b> Recognize, organize, and express the most important idea of a given selection after reading</p> <p><b>Applies reading strategies in all areas</b> Uses comprehension strategies to understand written material in other curricular areas</p> <p><b>Recognizes and remedies comprehension breakdown</b> Recognizes when what is being read no longer has meaning to make sense and then applies an effective strategy to restore understanding</p>			

Attach one narrative and one expository dated example that best exemplify this student’s work during 1st quarter and 3rd quarter.

Comments and observations:

## Using student work to gain insight on their thinking while reading

Essential to the identification of students' needs is monitoring their comprehension processes while reading. This is an obvious challenge for teachers because they are not aware of what each reader is thinking. Therefore, to provide quality instruction, teachers need to find ways of encouraging students to make their thinking and the strategies they are using visible. Kelly used several instructional approaches to support students' efforts to articulate their thinking.

One such approach was to have students document their initial thoughts on sticky notes. As Kelly reported to Judy, "I have them do the sticky notes first because that's the immediate conversation that we would have.... I love to hear them verbalize [their thinking]" (Classroom notes, February 22, 2003). By including students' notes while reading, Kelly could tailor her instruction to meet immediate needs. For instance, while reading the book *The Rough-Face Girl* (Martin, 1992), Kelly instructed all students to use sticky notes and submit them to her. Melissa's notes (see Figure 2) provided insights on this student's comprehension.

## Assessing Melissa's comprehension process

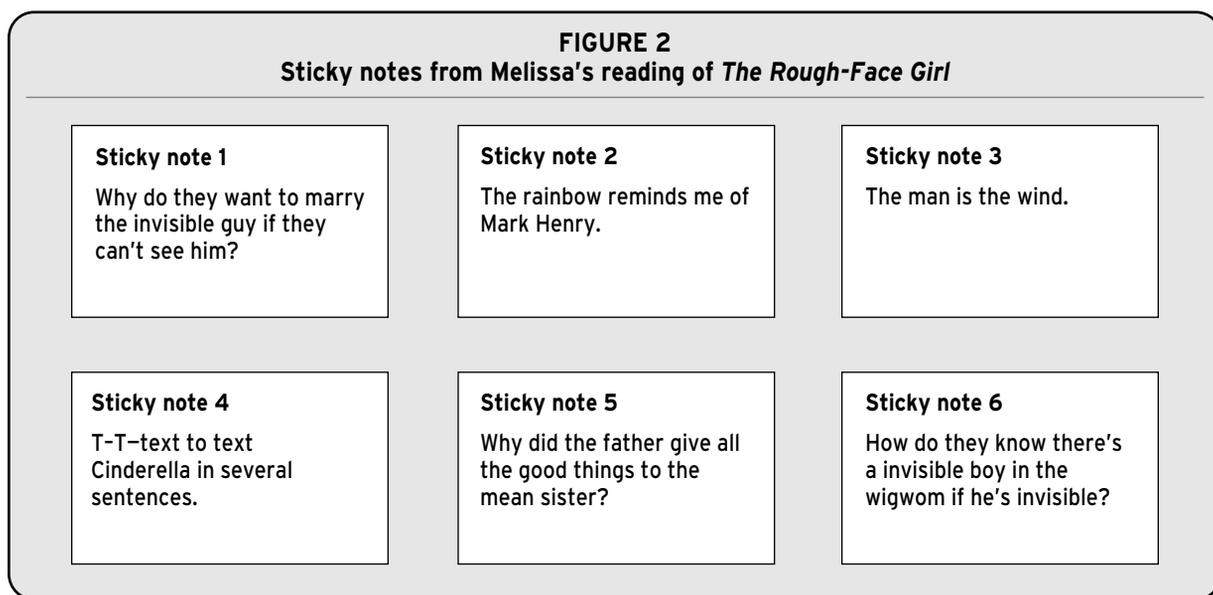
Melissa's notes demonstrated that she was an active reader (see Figure 2). For example, she engaged in multiple facets of comprehension in the following ways:

- questioning the text (notes 1, 5, and 6);
- making connections to another text (note 4) and herself (note 2); and
- disclosing her ability to interpret a picture (note 3).

These notes enabled Kelly to identify Melissa's strengths: "She's taking control of her learning and saying, 'I didn't really get this book, but when I thought about Cinderella and jealousy and cruelty, it helped me understand'" (Classroom notes, February 22, 2003).

The sticky notes also uncovered a potential instructional focus for Melissa because Kelly noticed that her questions were ones not easily answered by the text. This was not a negative aspect of Melissa's reading; however, it could frustrate her if she expected to find answers in the text. Kelly needed to watch for evidence of this in other responses and plan instruction that addressed this form of questioning.

**FIGURE 2**  
Sticky notes from Melissa's reading of *The Rough-Face Girl*



That is, Kelly knew that including instruction on Question–Answer Relationships (QARs; Raphael, 1984) could help Melissa understand that some questions were “On my own” and not found within a book. At the same time, such questions could provide the basis of a Book Club discussion.

Students’ sticky notes provided a rich source of information about their initial thinking while reading. At the same time, these were not sufficient because they were mere glimpses into comprehension. Therefore, Kelly also asked students to use these notes as a basis for extended journal responses to provide further insights on their meaning construction. For example, examination of Melissa’s journals revealed more about this student’s understanding of the text.

For her journal (see Figure 3), Melissa followed Kelly’s directions to the class and selected a few ideas from her sticky notes to elaborate. Kelly noted that this student’s early comments, about connections to other Cinderella tales, were strong; however, the journal weakened toward the end when Melissa tried to expand one of her questions.

Melissa began her journal connecting *The Rough-Face Girl* to other Cinderella stories and confirmed her ability to activate her own relevant prior knowledge. Some students might stop with this statement; however, Melissa continued, explaining how this facilitated her comprehension because she expected the sisters to be cruel to the main character. Kelly acknowledged how this expansion was important for Melissa’s comprehension: “Her connection was big!” (Classroom notes, February 22, 2003) and concluded that Melissa was

using this strategy very well on her own. Kelly realized that she no longer needed to provide instruction on activating prior knowledge for Melissa. While Kelly would continue to monitor this periodically, Melissa had already demonstrated independence in this skill. At the same time, the next section of the journal entry provided additional insights on this student’s instructional needs.

Melissa’s journal continued with a focus on one question that surfaced when reading: “Why do the cruel sisters want to marry the invisible guy if they won’t be able [be able] to see him?” This question showed that Melissa was engaging in sound comprehension strategies by questioning characters’ motives. At the same time, her answers were vague. That is, she noted that “more people would know them” if they married the invisible man, but she did not clarify her reasoning. Further, her added rationale implied that the invisible man was popular, but this was not stated in the text. Therefore, Melissa’s question, one that required the reader to make inferences, seemed to be hard for her to answer.

This journal entry provided Kelly two possible directions for further instruction. The first could be to help Melissa identify inferences in a text so that she could find answers to her own questions. The second direction could be with regard to Melissa’s writing. As Kelly noted, “fourth graders struggle with writing because [their writing] is still growing...” (Classroom notes, February 22, 2003). To take instruction in this direction, Kelly could focus on how Melissa could communicate her thinking more clearly. Kelly knew she had additional insights on Melissa’s reading comprehension but needed more information to make final instructional decisions.

As this example demonstrates, Kelly effectively examined her students’ written work looking for proof of their comprehension. Melissa was considered to be “on grade level” in her reading, according to standardized test data; however, the classroom assessments enabled Kelly to refine her instruction to meet this student’s needs. We believe this example is a compelling piece of evidence that illustrates the need for more authentic assessment to enable teachers to truly understand their students’ comprehension deficits, a need that standardized tests alone cannot address. In this case, Kelly knew that Melissa no longer needed to be included in sessions focusing on activating prior knowledge, but she did need additional support in

**FIGURE 3**  
Journal entry from Melissa’s reading  
of *The Rough-Face Girl*

One conetion [connection] I made was that this story is like Cinderella. It helped me understand the book because I sort of knew why some things happened. Like the crul sisters might have been mean because they were jealous of the Rough-faced girl.

One question I had was—Why do the cruel sisters want to marry the invisible guy if they won’t beale [be able] to see him? They might want to marry him because more people would know them or they might want to marry him because everyone else wants to marry him, and they want to get in.

drawing inferences—either making them or communicating them to others. This same refinement of students’ needs was applied to students identified as special needs learners.

### **Assessing Erin's comprehension process**

Another example of how this process helped Kelly work with a variety of students emerged when Judy considered those students not performing at grade level. Typically, if viewing data from a standardized test, the teacher only knows that these students are performing “below level”; however, using a classroom-based assessment process enabled Kelly to identify their specific instructional needs through daily written assignments. For example, Erin, identified as “learning disabled” as the result of her performance on a standardized test, revealed much about her comprehension to Kelly on a daily basis. One issue that emerged was that Erin’s thinking, as shown in her journals, was not consistent. To assess what instructional support Erin needed, Kelly read her sticky notes (see Figure 4) and journal (see Figure 5) to confirm the facets of comprehension evident and the levels within which Erin seemed to be working.

Kelly noted that Erin made a connection to the Cinderella story, just as Melissa did, explaining, “By making this connection, Erin demonstrated she understood the text at some level.” Her statement “at some level” showed that Kelly understood comprehension as a complex interaction of many components. That is, all connections are not the same. Further, she also noticed that, even though Erin’s ninth sticky note indicated an inference (“Everyone thinks she ugly”), her fourth journal comment showed an opinion without text reference. Together, the notes and journal revealed to Kelly that Erin was using new comprehension strategies, because “it was not typical of Erin’s work” (Classroom notes, February 22, 2003). Kelly decided to file this sample because it showed what Erin was capable of doing sometimes, but was not yet doing consistently, thus demonstrating both this student’s existing strengths and potential. Kelly knew that her future instruction needed to support Erin’s efforts in regularly making inferences. This identification of such specific needs could only be made through ongoing daily assessments of the student’s comprehension of particular texts.

**FIGURE 4**  
**Sticky notes from Erin's reading of *The Rough-Face Girl***

**Sticky note 6**

T-T-text to text  
This is like Cinderella because they are macking [making] her work.

**Sticky note 7**

They will not get merred [married] to him.

**Sticky note 8**

They must live in the sky.

**Sticky note 9**

I-inference  
Everyone thinks she ulgy [ugly].

**FIGURE 5**  
**Erin's journal entry from *The Rough-Face Girl***

This is like Cendrala [Cinderella] because the two older sisters make her do all the work. Then they ask can we have new bloulse [blouse] and shoes.

The sisters will not get merried [married] to the Invisible Man and the little sister will.

The Invisible Man must live in the sky. That's why his bow is a rainbow and he is a cloud.

Everyone thinks she is ugley [ugly] but what counts is what on the inside.

As these examples show, ongoing assessment of students' written responses provided specific guidance for Kelly's reading instruction on thinking while reading. Even though she had formal test data on students' general needs, the classroom assignments channeled her explicit instruction. Because such student work provided a refined representation of comprehension while reading, Kelly also developed assignments that revealed the students' understanding after reading texts. Standardized tests alone could not have provided Kelly with this level of information to help develop her instructional focus.

## Identifying students' needs after reading

Many measures evaluate students' needs after they have read a text. Like other teachers, Kelly focused on this as well. However, a significant difference was that she did not just assign a grade. Instead, she examined students' written responses to identify their comprehension needs and set goals for further instruction.

One research assignment for Kelly's students was to report on a hero. To complete this, students first identified someone they admired, then read informational books, taking notes. Before they drafted their reports, Kelly read through their notes, looking for evidence of their comprehension. As she examined Justin's notes, she noticed that he had narrowed his focus to only literal information without making connections within and across the texts. The following statement illustrates Kelly's thinking about Justin's reading:

There are aspects of [the] assessment that you're looking for in nonfiction...the literal comprehension is right there...I take a look at the web, the notes that Justin takes from his reading, and that's my big clue...Justin came up to me with three facts. [But] he had five whole pages of famous people. And that's all he got out of it. (Classroom notes, February 8, 2003)

Kelly mentioned that literal comprehension was always one aspect she considered, but she expected her students to move beyond it. In this particular case, Justin took several pages of notes limited to three facts, recording only literal information. From Kelly's perspective, this was not sufficient:

"that's all he got out of it" (Classroom notes, February 8, 2003).

When examining other students' logs, Kelly found that Justin's approach was not unique—they, too, had limited their reactions to literal details. As a result, she decided that an upcoming instructional focus had to emphasize engaging with texts in alternative ways. That is, she wanted students to understand that reading nonfiction should include interpretation by comparing and contrasting ideas or recognizing causal relationships. Further, she expected students to be critical readers who expressed and supported their opinions. At the very least, students should make evident the connections between and across texts. Therefore, she immediately began planning lessons to support these facets of comprehension for her students. Because Kelly gathered and analyzed students' written texts before they began writing their reports, she could address their needs immediately, making it more likely they would read with more focused purposes and write better informational reports. As such, her assessment could redirect instruction and influence students' literacy immediately.

In addition to this insight on her class as a whole, Justin's notes also informed Kelly about his individual needs. During a conference, Kelly focused on helping him use a graphic organizer to compare and contrast three people related to his report:

I sat down with him and I talked about how could he choose three people and put the name of the people in the web. And then he could go off of that [by adding more information that supported other facets of comprehension]. By the end I think he got it. But, he needed that extra help. (Classroom notes, February 8, 2003)

Kelly's brief description of her meeting with Justin showed how the district's comprehension assessment process supported her efforts to identify individuals' needs and support their growth through explicit direction. In this case, Justin limited his focus to literal information. Because they had discussed the facets of comprehension in class, Kelly could clarify for Justin how such a limited focus would not enable him to construct a solid report. With explicit communication to Justin about his needs, she was able to support him individually and advance his interpretive comprehension of the texts

he was reading. If Kelly limited her knowledge of Justin's needs to standardized test data she would not have been able to take him to this deeper level of understanding.

Kelly used her knowledge of comprehension and the assessment process to determine students' needs both during and after reading. This influenced her planning for instruction and individual conferences with students. As a result, Kelly's teaching addressed students' immediate needs. In addition, she could tailor instruction to further their comprehension. To illustrate this, we now focus on two facets that seemed to dominate in Kelly's classroom across the year: questioning and organizing information.

## Questioning: A central facet of comprehension in Kelly's classroom

Strategic questioning is an important aspect of comprehension. It provides a purpose for reading (e.g., Ogle, 1989), keeps students engaged, and enhances understanding (Feldman, 2003). Self-questioning also facilitates comprehension monitoring (King, 1994). Further, question analysis enhances the reader's ability to formulate answers (e.g., Raphael, 1984). Because questioning is an essential aspect of comprehension, we propose that teachers instruct students on more than how to answer questions for a test. Instruction should help learners understand that active readers question the author, the text, and themselves before, during, and after reading. Therefore, sound reading comprehension instruction should help students distinguish between questions "quizzing" their knowledge and ones active readers pose to further comprehension. Understanding questioning only as it relates to standardized test achievement limits students' use of this strategy and prevents them from exploring the full impact this strategy has on comprehension.

Because questioning is so important, explicit instruction on developing and answering multiple types of questions is necessary. Kelly had participated in district staff development that emphasized the importance of questioning in comprehension instruction, stressing QAR (Raphael & Au, 2005) and Harvey and Goudvis's (2000) distinction between "thick" and "thin" questions. "Thick" questions require elaboration of text information,

getting at interpretative and critical comprehension, and "thin" questions elicit literal information. These "thin" questions are similar to Raphael's (1984) "right there" category.

Kelly's instruction exposed the effect such staff development had on her thinking because she not only modeled good questioning techniques but also made self-questioning while reading an explicit focus. Perhaps the best indicator of Kelly's effectiveness emerged late in the school year when students began incorporating good questions into their oral discussions.

## Students' questions during Book Club discussions

Toward the end of the school year, students read *Bud, Not Buddy* (Curtis, 1999). In an early Book Club discussion (McMahon & Raphael, 1997), as students familiarized themselves with the setting and characters, their questions revealed Kelly's influence on their comprehension. That is, she had stressed Harvey and Goudvis's (2000) distinction between "thick" and "thin" questions. In the following brief exchange, Melissa asked a "right there" or "thin" question and answered it herself.

Melissa: When do you guys think this takes place?

Justin: Uh, 1950.

Melissa: It's 1936. [Reads from the book.]

That Melissa asked a "right there" question is not impressive; students learn these quickly in school. What is of note here is that she answered it, reading from the book, exactly as Kelly did when she modeled this for her students. Therefore, Melissa seemed to be practicing what she observed her teacher doing—asking questions that could be answered by rereading the text.

After Melissa's question, the discussion shifted focus to interpretation when Justin asked an "author and me" question (Raphael, 1984), one that requires both information from the text and the reader's inference—another question type Kelly modeled.

Justin: Why do you think that his dad...went away in the first place?

Pete: I have no idea.

Justin: We'll probably find out in the book.

Jason: Maybe he ran away because his career was like—

Pete: Maybe he ran 'cause he needed a job.

Justin: Maybe he had to go away because of his band.

Pete: Yeah, that's what I was—I mean Flint isn't exactly the most populated place. And isn't exactly the coolest place to have a band if you're...with jazz.

Unlike Melissa's, Justin's question could not have been answered by looking at just one part of the text because it required drawing an inference. Because it engaged the imagination of the group, students hunted for an answer, digging further into the book. When they concluded that the father left because Flint did not provide much potential for a jazz band, they were predicting upcoming events based on information the author had provided so far. Therefore, Justin's question, one modeled during instruction, engaged the students in this important aspect of meaning construction, illustrating Kelly's instructional influence.

As the group continued, Pete's final comment prompted another question from Justin; this time, one categorized as "on my own"—a question not based on events in the text (Raphael, 1984). Because of this, the group did not have enough information to construct an answer:

Justin: What is jazz?

Pete: It has a disco/pop. [Starts to sing.]

Melissa: No, slang.

Pete: Yeah.

Apparently, these students did not understand jazz as a musical form. Further, the text did not provide them sufficient information to develop an answer. As Harvey and Goudvis (2000) noted, some questions can be answered and some cannot. Clearly, this is an example of one the group could not answer at this time. However, after reading Melissa's sticky note (described earlier, see Figure 2), Kelly stressed in her instruction that such questions are valuable because they further our thinking during and after reading. This discussion shows how this group had begun to ask such questions. After this, though, the group's focus moved to another topic.

Melissa shifted the book club discussion to interpretive or critical comprehension by asking an

"author and you" question. She began by reminding the students of the section of the book to which her question related.

Melissa: When he met his dad...[he] didn't really have a conversation about anything—

Pete: Yeah.

Melissa: Why do you think they didn't really have a conversation—if they were related?

Jason: Maybe they really didn't know that they were related.

Melissa: One of they guys said the dad won't admit that he's your dad 'cause you didn't show him any love.

Jason: But, does that mean like, doesn't show him any love?

Just as she did in her sticky notes, Melissa posed a question not easily answered by text events. The group discussed some answers and Justin asked another related question, but they did not reach consensus about an answer, perhaps because they had just begun reading the book. Although they did not immediately develop an answer, Melissa's question might have guided the group's ongoing reading as they considered the relationship between the two characters. That she asked an "unanswerable" question is not as important as the fact that Kelly's students had learned to question the texts they read. Further, this provided additional information to the teacher about Melissa's ongoing pursuit of such questions.

Questioning can play an important role in building comprehension. While many standardized tests include similar questions, they cannot engage readers in the same way because students are not pursuing their own questions. In Kelly's classroom, students seek answers to *their* questions, enhancing their comprehension and purposes for reading. To guide her instruction, Kelly monitored classroom discussions, making note of the questions students asked and their answers. By distinguishing this facet of comprehension, she was better prepared to

- listen to her students' questions;
- assess what those questions revealed about existing comprehension and potential for future understanding; and
- determine further instruction, whether for the total class, for small groups, or for individuals.

Questioning was a primary focus of Kelly's instruction that she observed her students use more often as the year progressed. As a result, students learned to develop good questions and find appropriate answers. Standardized test information could not allow teachers to move in this direction without coupling it with a process such as the one used in this district.

## Comprehending how text information is organized

Mentally organizing information while reading is a key feature of active comprehension. That is, to comprehend, individuals need to recognize the organizational structure of texts (Mosenthal, 1994) and develop mental frames for remembering information (Englert, 1990). To meet students' needs in this facet, graphic organizers can help make metacognitive processes explicit. Kelly used a variety of these when introducing new reading strategies and building conceptual understanding of texts. Students can use graphic organizers effectively to classify information as they prepare for tests. However, these tools can also support a reader's comprehension of texts. Because she understood the power graphic organizers have when reading, Kelly closely examined students' visual representations of information recorded during and after reading.

Kelly introduced the text *Fireboat: The Heroic Adventures of the John J. Harvey* (Kalman, 2002) with the Content/Process/Craft (CPC) graphic organizer (Harvey & Goudvis, 2000). This visual representation can be very effective with this particular text because it is structured in three distinct sections. The first third of the book lists numerous facts about significant events that took place in New York City in 1931 without making any connections to the boat. Active readers question why the author is listing all these facts. The next third of the text provides information about the active life of the boat. Reading this section, some readers proceed without question, remembering the specific information given. However, readers with a strong sense of story wonder when the "problem" will emerge so that the boat can be "heroic." Just as active readers begin to wonder where the text is going, they find a black page with white letters: "But then on September 11, 2001 something so huge

and horrible happened that the whole world *shook*." Active readers with the relevant prior knowledge now realize that the heroism mentioned in the title will be related to the destruction of the World Trade Center. Even those who might not be reminded of that specific event realize something terrible is about to happen. As the final third of the book unfolds, readers learn how the old fireboat becomes essential to fighting the fires that day. Because this text has three distinct sections and the first two are likely to prompt questions from the reader, the CPC graphic organizer is helpful in making readers' thinking more evident while reading.

Kelly's first lesson focused on the three components. That is, she explained that the *content* column is for listing factual information, representing literal comprehension. The *process* column is where students record their interpretive or critical comprehension by listing their connections, comparisons, or opinions. The third column, Kelly explained, can be completed either during or after reading. In this section, readers evaluate the quality of the author's or illustrator's *craft*, also related to critical comprehension.

After explaining how to use the graphic organizer, Kelly asked students to record the information from the book while she read the first third of it aloud. Just before the fireboat was introduced, Kelly stopped and asked students to share what they had listed in the *content* column and the questions or thoughts related to the text in their *process* section. As students shared, Kelly recorded their responses on chart paper in the appropriate column. She continued this process, reading aloud, stopping to ask them to share their written responses and recording them on the chart paper, until they had completed the text. Their completed organizer (see Figure 6) served as a means of remembering the information and of documenting their reading process throughout the book. As such, it helped Kelly model how to monitor comprehension, to ask questions of the author, and to evaluate the quality of a book. Further, she reminded students that they engaged in multiple facets of comprehension at the same time:

- literal,
- interpretive,
- critical, and
- organizational.

**FIGURE 6**  
Content/process/craft graphic organizer

Content (fact)	Process (thinking)	Craft (writing)
<ul style="list-style-type: none"> <li>• 1931–NYC</li> <li>• The Empire State 1931–</li> <li>• Snickers came out.</li> <li>• Babe Ruth hit 611th homerun.</li> <li>• The George Washington Bridge was built over the Hudson River.</li> <li>• The Mark J. Harvey was the largest fireboat–it was launched.</li> <li>• Shoots 16 thousand gallons = 25 fire trucks.</li> <li>• They are closing all the docks.</li> <li>• 1995–no longer needed the fireboats anymore.</li> <li>• A group of friends bought the boat–1995.</li> <li>• September 11th</li> <li>• Everyone wanted to help.</li> <li>• Harvey was used to help on September 11.</li> <li>• Helped put out the fire.</li> </ul>	<ul style="list-style-type: none"> <li>• What is up, up, up?</li> <li>• Sounds like a candy bar.</li> <li>• Why is it named the G. W. bridge?</li> <li>• It's hard to believe all this can happen in one year.</li> <li>• What's a fireboat?</li> <li>• It doesn't look very big. (Prediction)–There is going to be a New York fire.</li> <li>• Where do they get the water?</li> <li>• There's a ship in the dock.</li> <li>• Why do they bring it all on the boats?</li> <li>• Maybe they won't need the fireboats anymore.</li> <li>• Airplanes and Twin Towers</li> <li>• They are going to use it for fun. (Prediction)–I think they'll find a fire.</li> <li>• Sadness</li> <li>• They must have spent a lot of money.</li> <li>• Sept. 11–terrorist attack realist fiction?</li> <li>• Must be a new book. (Inference)–text-to-world</li> <li>• Be happy for what you have.</li> </ul>	<ul style="list-style-type: none"> <li>• Some words are big some up up up The words look like a bridge</li> <li>• Picture with words</li> <li>• "Up"–words go</li> <li>• AND THEY DID!!</li> <li>• Dialogue " _____ "</li> <li>• Why does it have a green face?</li> <li>• black page = bad</li> <li>• remember the people</li> <li>• "many lives were lost" (not died)</li> <li>• on its own page–important</li> <li>• colors on page change for mood</li> </ul>

Kelly's use of graphic organizers in her classroom was integral to her reading instruction and her assessment of the students' comprehension. By selecting this particular visual, Kelly was showing the close relationships between a visual representation, the structure of a text, and the reader's ideas prompted by reading. Further, she modeled how the reader organizes information both during and after reading. Kelly also identified which facets of comprehension were related to this activity. Because she communicated all this to students, she made clear what she would be looking for in upcoming logs, sticky notes, and extended responses. By assessing their knowledge of texts using genuine reading experiences that involve them in the reading process, this lesson took Kelly's stu-

dents to a level of understanding that a standardized test could not.

## Connecting assessment and instruction

Standardized tests do provide one indication of students' comprehension developed while reading. However, we have shown that assessing students' comprehension should consist of more than comprehension-check questions. Instead, the teacher should engage in ongoing, classroom-based assessments that inform instruction and support students' individual needs. The examples in this article demonstrate that comprehension is

complex, and samples of students' work suggest that it changes daily, depending on texts, motivation, and students' needs.

A series of comprehension-check questions will not provide the teacher with the full continuum of students' comprehension. Further, such questions, often requiring students to select from a list of constructed answers, provide no insights on learners' thinking. For example, Justin's research on his hero might support his efforts to answer comprehension-check questions; however, his notes will not help him articulate his interpretations of the contributions his hero has made to society. Although Melissa might do well answering the questions on a test, her scores will not help the teacher tailor instruction that meets her ever-changing literacy needs. Erin's work with inferences may never have surfaced if she could not pursue questions of interest to her.

If teachers resist efforts to make standardized measures the only way of gathering evidence of students' comprehension, they can reconfigure their instruction to include tools and processes that empower learners to monitor their comprehension, question the author, and evaluate texts read. Standardized tests are a snapshot depicting students' comprehension on one day. Classroom-based measures provide a series of assessments that shows their growth, regression, and stability over time. Although we accept the first measure as a given, we argue for the second to empower teachers and provide more valuable feedback to students.

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