

# Fostering Metacognitive Conversation in Professional Learning Communities and Subject-Area Classrooms

by Cynthia Greenleaf

## Tapping Subject-Area Teachers' Expertise in Reading

In an unconventional conference room—a converted wine vat in Sonoma, California—science and English teachers are seated on the floor in a wide circle, leaning forward as they listen to one another read and think aloud with a chapter from *The Perfect Storm*, aptly called “The Graveyard of the Atlantic.” Middle and high school English language arts, physical science, and life science teachers are gathered in this mixed-content-area group to inquire together into the reading processes that characterize the different disciplines. Having just listened to an English teacher read a few paragraphs and think aloud to make his thinking and meaning-making process visible to the group, a high school physics and chemistry teacher takes over.

As the science teacher reads, she deliberates aloud about the science of wave physics and the measures of wind and waves that riddle the paragraph: Beaufort Wind Scales, knots, mile-per-hour winds, significant wave heights. She makes comparisons between the scales mentioned and scales she knows, and imagines her own body stacked head to foot several times to visualize the size of the waves that are peaking at a hundred feet or more and threatening to swamp the fishing vessel at any moment. After a few moments of this, the English teacher interrupts incredulously: “No! Are you going to tell me you actually read like that? You stop and think about all that stuff?! That’s exactly the part I would skip. It’s dull. It doesn’t even advance the plot! Why bother stopping to think about it?”

The science teacher smiles patiently into her book. She has heard this sort of disbelief before, has been questioned about the “different mind” she must have to love

chemistry. Looking up, her brows now knit with puzzlement, she replies: “If you don’t, you have no idea how terrified to be right now!” The look that passes between the science teachers in the room is a mixture of astonishment and pride.

In my work with secondary teachers, I live for this kind of exchange. Too often, science teachers assume that the English language arts teachers are not only responsible for teaching students to read science, but capable of doing this teaching well. Almost always, teachers underestimate the very different approaches they take to reading the literatures of their fields. Even more concerning, content-area teachers underestimate the valuable reading resources they bring to the classroom, thinking that supporting reading development for students requires a specialist credential. When they have a chance, as these teachers do, to make their reading and reasoning visible to one another through a metacognitive inquiry and conversation, they begin to acknowledge the contribution each can make to the literacy growth of their students.

## Fostering Metacognitive Conversation in the Classroom

Metacognitive conversation is the heart of an instructional framework to build adolescent literacy skills—a framework known as *reading apprenticeship* (see Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). The approach we take in professional learning communities—reading and inquiring into our reading processes together—mirrors the kind of classroom instruction that we have seen to profoundly impact student reading engagement and achievement. By making thinking visible through a variety of metacognitive routines, teachers can help students adopt more powerful approaches to discipline-specific texts. More importantly, by fostering a conversation about the various ways class members approach reading tasks, teachers can help students see the resources and strategic skills they each bring to the classroom.

Most adolescents who do not read well hold impoverished views of what reading is, seeing it as a magical process in which comprehension just happens as the eyes move across the page. These students believe that other, more successful readers do not work at comprehending texts. They compare themselves unfavorably to “good” readers, whom they believe read effortlessly. As Matthew, a student in a chemistry classroom, recently said, “Some peo-

ple can just read something and remember what it says. And remember what the paragraph was talking about, or something. To me, I can't do that... I don't got that kind of brain." Making the problem-solving processes of reading visible helps to dispel these unproductive beliefs and to draw on students' capacity to solve comprehension problems collaboratively. Through ongoing metacognitive conversations about the reading materials that are part of content-area instruction, students begin to build better conceptions of reading and a broader repertoire of reading strategies—and in doing so, build new identities as students and as readers.

### **Introducing Think-Aloud as a Metacognitive Routine**

Making thinking visible in order to mentor students in content-area reading and thinking processes begins both with having teachers model and support reading strategies and with inviting students to share their thinking, often in the form of confusion about the reading, which they have learned to hide. Think-aloud is a flexible strategy that you can use routinely to start this metacognitive conversation, to introduce students to new kinds of course texts, or to demonstrate and mentor students in new thinking processes you want to help them acquire.

Initially, you may want to merely demonstrate that reading requires thinking and to help your students become mentally active when they approach reading tasks. Later, having established a routine of thinking aloud in the classroom community, you can use think-aloud to focus on particular thinking skills.

We have found that inviting students to bring in materials they read outside of class is a powerful starting place since they are likely to be more experienced readers of particular kinds of youth-oriented texts than you are. These might include computer or gaming manuals, song lyrics, Internet web pages, directions for styling hair or applying make-up, recipes, auto repair manuals, and the like. You will be forced to demonstrate problem solving as you make your way through unfamiliar territory, which has the added benefit of showing students that it is okay, even productive, to identify things that are confusing or things that you don't know as you work to comprehend the reading.

By taking the risk yourself to expose your thinking processes (often floundering before your more skilled stu-

dents), you help to set a classroom environment where risk taking is valued and where everyone's reading experiences are honored and useful, even or perhaps especially when they expose struggle and confusion. Teachers in our learning communities have come to call this lesson "stump the chump," and will tell you that their students are uniformly enthusiastic participants in it. Of course, if you choose to invite students to bring their own materials, you will need to give them parameters for the reading materials they bring (no profanity, no disrespect to others, etc.).

### **To Prepare and Teach Think-Aloud**

- Select a highly engaging text with which to model the think-aloud routine and metacognitive conversation about reading and thinking processes. Begin with the student-brought material or a text that is provoking or highly interesting to students but also offers a few comprehension challenges. By tackling the comprehension difficulties together in the whole-class metacognitive conversation, you will be able to demonstrate the importance of this collaborative work on comprehension and text meaning. An overhead projector or computer monitor is an invaluable tool in this process.
- Divide this text into chunks for modeling and guided practice.
- Make a transparency of the first couple of chunks of the text, or scan them into the computer for display on the classroom monitor. Model reading and thinking aloud with this reading material displayed on the overhead or computer screen. Make sure students have their own copies of the text, if possible.
- Demonstrate the thinking strategies by thinking aloud and simultaneously making notes, writing comments and responses, adding questions, underlining, etc., on the overhead or computer screen as you go through the text.
- After you have demonstrated with a few sentences or a paragraph of the text, invite students to share their observations of your thinking processes in a whole-class discussion. You might want to make a poster that lists what they observe to guide students' think-aloud later in the lesson.

- Invite students to add their own thinking process to yours. Initially, this may be like pulling teeth since many students have not learned to attend to text meaning and to their thinking as they read. You may want to suggest that students reread the passage silently before sharing their thinking processes. Consider, as well, giving students sentence stems—*I wonder...*, *I am picturing...*, *I am confused by...*—to support their contributions (see Schoenbach et al., 1999, pp. 77-78). As they share any thoughts about the passage, add to the notes on the overhead or computer screen.

Continue thinking aloud with this text, encouraging student observations and additions. After you work with another short passage, you might have pairs of students work together on the following segment of the text, listening to one another as they take turns thinking aloud. Again, the sentence stems may come in handy, or you might even assign your students one or two prompts to make this initial think-aloud experience very concrete. After this more independent work, invite pairs of students to share their reading and thinking processes with the class. What confused them? What did they do when faced with something confusing in the text?

### ***Metacognitive Conversation Is Key***

Probe student responses to deepen the metacognitive conversation. As you do, you might want to add to the list of reading processes students observed you carrying out earlier in the lesson. Did they ask any questions as they read? When? What prompted their questions? What questions did they ask? What influence did these questions have on their understanding of the text? Did they help? Did anyone have a picture in mind when they read? What is or was confusing? What might help clear up the confusion?

Continue exploring students' reading processes with this piece, engaging them in an inquiry into the range of mental activities involved in reading. This sharing and exploring of reading processes is the metacognitive conversation itself—the place where students have an opportunity to learn new approaches to reading comprehension from one another and from you, in a collaborative inquiry into reading where all students' experiences are valued.

### **Using Think-Aloud to Teach Subject-Specific Thinking Processes**

When students seem to understand the think-aloud routine and how to participate in a metacognitive conversation about reading, and once they have had experience working together to comprehend a few different kinds of passages, move to content-area texts that are part of your course curriculum. In working with these texts, initially you will want to make connections to the kinds of inquiry conversations and collaborative problem solving that students have done with the introductory texts above (student-brought texts or texts of compelling interest you have provided). Quickly, however, you will want to begin to mentor students in the specific approaches to reading that are a part of more skilled, subject-area reading. As noted toward the beginning of this article, this is what we call a reading apprenticeship.

In a history class, for example, you may want to work on identifying rhetorical devices or author slant (the point of view from which historical events are told) or the source and authoritativeness of particular texts. In a science class, you may want to work on visualizing structures and interactions, comprehending data arrays or models, identifying evidence and evaluating explanations offered in science texts, or forming inquiry questions based on these texts. Here is where teachers' metacognitive awareness of their own discipline-based reading proficiencies benefits students—through the mentoring and apprenticeship process during metacognitive conversation around course texts.

To apprentice students into more skilled subject-area reading, choose a content-area text for supported practice with think-aloud and metacognitive conversation.

- Read the content-area text closely, keeping in mind the potential challenges and learning opportunities for students. This is a very important part of the planning process. To orchestrate a conversation about the thinking processes required by a particular text with a classroom full of students, you need to have identified the challenges you think students will have, as well as the learning opportunities afforded by the text that you want to draw out in the lesson.

- Read the text closely while attending to the mental processes you engage in to comprehend and interact with the text. As you read, be alert to the particular thinking processes you are using. Here is where your expertise as a skilled reader in your discipline can shed light on the particular kinds of comprehension strategies most useful in tackling particular texts. All readers ask questions as they read to clarify confusions, to increase engagement, and to anticipate the content of the text they will read. However, readers of history, math, science, and literature ask different kinds of questions that are informed by the disciplines they teach.
- Make note of the particular comprehension strategies you use. Be specific. For instance, write “asking questions about point of view” or “wondering about word choice,” rather than simply writing, “asking questions.”
- Identify one or two key strategies or approaches you want to teach your students.
- Prepare to work with students by dividing the content-area text into chunks for modeling and guided practice.
- Make a transparency of the first several chunks of the content-area text, or scan them into the computer for display on the classroom monitor. Just as you did with the introductory texts, model the target thinking strategies as you think aloud with the text.
- Model think-aloud with the first chunk of content-area text on the overhead or computer screen, demonstrating the target thinking strategies aloud and writing notes about your thinking processes, as before.
- Invite students to add to your think-alouds, and add their thinking processes, questions, responses, etc., to the notes you are taking.
- Assign students to work in pairs on the next chunk of text, perhaps using sentence stems to practice target thinking strategies. As students work together, move around the room to listen, coach, and monitor student practice.

### **Metacognitive Conversation Apprentices Students to Subject-Area Reading**

Over time, you can use think-aloud strategically (and sparingly!) to focus on new thinking strategies you want your students to acquire. A repertoire of metacognitive routines can help move students toward independence. For example, Matthew’s chemistry teacher introduces new thinking and reading strategies over the year, initially using think-aloud, then moving to writing thoughts in the margins of a text (a practice we call *talking to the text*) when reading independently, and finally progressing to dual-entry reading logs (what I read/what I think) as students gain greater metacognitive control of their reading process and more experience as readers of challenging academic material. All these routines are accompanied by ongoing classroom inquiry and metacognitive conversation, not only about what the class is reading, but about how the students and their more experienced teacher are tackling the reading materials. Metacognitive conversation becomes apprenticeship, and students grow as readers, thinkers, and learners.

Matthew told us that his reading improved over the year he was enrolled in his chemistry class. At first he had trouble pinpointing the change, saying, “It’s just better.” But when pressed, he noted that in the past, he “just read it, not really focused on what it’s saying.” In contrast to his belief in the beginning of the year that understanding just happens for people with the right kind of brain, he concluded, “It’s better when I think.”

### **Reference**

Schoenbach, Ruth, Greenleaf, Cynthia, Cziko, Christine, & Hurwitz, Lori. (1999). *Reading for understanding: A guide to improving reading in middle and high school classrooms*. San Francisco: Jossey-Bass.

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