

DOINGWHATWORKS



Presentation

FULL DETAILS AND TRANSCRIPT

Using Metacognitive Logs in Science

Three Fires Middle School, Michigan • February 2009

Topic: Adolescent Literacy

Practice: Engaging Text Discussion

Highlights

- Three Fires Middle School has adopted a schoolwide approach to teaching reading across the content areas that features explicit instruction and modeling, think alouds to strengthen students' comprehension skills, and opportunities for students to practice text discussion around science content.
- Heather Howlett, an eighth grade science teacher, uses a two-column, reflective, metacognitive reading log to help students organize their questions and observations and make text connections.
- A primary goal of this astronomy lesson was for students to gain understanding of the important information in the science text through participating in text discussion in order to hear other students' connections, questions, and visualizations about what they had read.
- Student understanding is evaluated based on metacognitive log entries, pair-share worksheets, and self-reflections and written summaries that pull together facts from text and related classroom activities and reading.

About the Site

Three Fires Middle School

Howell, MI

Demographics

95% White

2% Hispanic

1% Black

1% Asian

1% Native American

16% Free or Reduced-Price Lunch

Three Fires Middle School is a member of the Livingston Educational Service Agency (LESA), a regional education service agency in Michigan that has been successful at developing a professional learning community based on the Reading Apprenticeship model and focused on adolescent literacy among its member schools. The Three Fires Middle School demonstrates strength in the areas of explicit instruction in comprehension strategies, the use of text discussion in the content areas, and teaching vocabulary in the context of reading across content areas. Important features for improving reading skills at this site include:

- Teaching reading through the content areas,
- Explicit instruction, teacher modeling, and thinkalouds to strengthen students' comprehension skills,
- Text discussion that uses a gradual release of responsibility until discussions are more student-driven,
- Use of collaborative models such as pair-share, small-group discussions, and large-group share-out methods to enhance text discussion,
- Emphasis on talking-to-the-text and note-marking techniques,
- Use of metacognitive logs during text discussions,
- Vocabulary instruction embedded in all content classrooms, and
- A systemic approach to professional development.

Full Transcript

Presentation Title: Using Metacognitive Logs in Science

Slide 1

Welcome to Using Metacognitive Logs in Science.

Slide 2

My name is Heather Howlett, and I teach eighth-grade science at Three Fires Middle School in Howell, Michigan.

Slide 3

Text discussions are probably the best practice that I have done in my teaching career. I've seen the most growth, the best results from it. I've seen students—especially those at-risk kids that don't receive any special needs services, that tend to fall through the crack, that really struggle with getting their work in, with just understanding, and usually they're not the best readers for whatever reason—I've seen the most growth with those kids.

Slide 4

My goals for this lesson are for students to see another person's perspective of what the important information is from our science text and how someone else's connections or questions or visualizations can help them to make sense of it all.

Slide 5

Students of all ages are very social, and so to channel that energy into a text-related activity or discussion has really been a useful way to meet that need, that social need that they have. They really enjoy explaining and exploring each other's misconceptions as well, especially in science. There's so many misconceptions kids have about different topics. And so for them to be able to, first of all, read, pull out what they think is important, and then talk about what that reminds them of, what they aren't sure of, what they have questions of, etc. has really been a powerful thing for them.

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One of the things that we do all the time are metacognitive logs—the two-column system of the left side being the information from the text that they thought was important and then the right side being their thoughts, or questions, connections.

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In this lesson, students paired up and were asked to compare their partner's metacognitive log with the

information in the book. And then I had a self-evaluation rubric but actually had the students evaluate each other's and then also looking at that right hand side, that metacognitive side of the log where they can see how the other person—what kind of questions did they ask about the text, what kind of connections did they make, any pictures that they drew as far as visualizing what the text was discussing.

Slide 8

I had the students, again in pairs, talk this out and share with each other: "Why did you write that?" "What reminded you of this thing that we did last year?" "What made you think of that picture in your brain?" And then after, we came back as a whole group and shared some highlights and insights from their conversations.

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I often like to use the Socratic method of questioning just to lead the group to what their next steps of comprehension should be. So, if they kind of just offer, "Well, I didn't put anything there because I didn't know what to put. I didn't get it."

"Well, what didn't you get about it? Can you explain?" And then just keep questioning them to slowly lead them to where they figure it out for themselves.

Slide 10

I assess students' understanding of our text or of any lesson by conferencing with them individually on a regular basis to see what's their progression through the material. But also, in this particular lesson, I review their metacognitive logs that they've been filling out for this chapter, the self-evaluation rubrics that they completed actually regarding their partner in this particular instance.

Slide 11

Also, the pair-share worksheets that they completed, which is a summary of the discussion that they had with their partner about what did they get stuck on in this chapter and then how did they reconcile that and also what they think their next steps could be.

Slide 12

At the beginning of the year, a lot of students didn't understand, "Why are we doing all this reading stuff

in science? I don't get it. It's science. It's not reading." And I tried to explain to them, "Well, reading is the most important thing you can do, no matter what subject area it is. If you can't read and understand, you're going to struggle. So, we're going to take a lot of time here to help you to understand and to be a better reader." And then I also like to tie it into high school and to explain to them that you can use these techniques next year and in the high school to really improve your comprehension of what you are reading and just make your work so much easier. They really appreciate that.

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To learn more about using metacognitive logs in science, please explore the additional resources on the Doing What Works website.