**Modeling Thinking About Thinking:**

**Metacognition and Apprenticeship**

***How one teacher studied student minds and found an apprenticeship method.***

by Darin Stockdill, 2014

 As an English and Social Studies teacher working in classrooms with multiple types of readers, I was often frustrated when students engaged in what some researchers have called “mindless reading” (Schooler, Reichle, & Halpern, 2004). I consistently saw some students moving their lips or following along in the text with a finger, looking like they were reading, but reading wasn’t happening. When I would probe their understanding with higher-level questions, they struggled to share anything gleaned from the text. They had been looking at words on the page, but they certainly hadn’t been thinking as they were reading.

Other students could answer basic, literal questions about a text they had read, but when they were required to engage in inferential thinking, they also struggled. Although I already knew that reading should involve lots of thinking, working with these students helped highlight for me the importance of *not* assuming that my students already knew how to read in thoughtful ways. As a middle and high school teacher, I definitely made some assumptions that my students had already “learned” how to read effectively. Recognizing that I needed to know more, I ended up becoming a student again myself to learn more about reading and reading instruction across the content areas.

 I focused my graduate studies on learning more about these issues, and I was able to conduct research with adolescent learners on their reading. When I interviewed young people and had them read aloud to me, asking them to think out loud at certain points in the reading, I saw the same problems I had seen as a teacher. When some students read academic texts, they didn’t engage in the thinking practices to create real meaning from these texts. A clear example of this problem emerged when I asked two different students, both female high school students in 12th grade, to read and think about the same section of text, a paragraph from a *Time* magazine article on the city of Detroit. In this introduction to his 2009 article, the author, Daniel Okrent, creates a “what if” scenario and argues that problems of Detroit—abandoned buildings for example—would have received more media attention if they had been caused by a natural disaster like a hurricane. The paragraph I used is below:

**Detroit: The Death — and Possible Life — of a Great City**

By Daniel Okrent Thursday, Sept. 24, 2009

If Detroit had been savaged by a hurricane and submerged by a ravenous flood, we'd know a lot more about it. If drought and carelessness had spread brush fires across the city, we'd see it on the evening news every night. Earthquake, tornadoes, you name it — if natural disaster had devastated the city that was once the living proof of American prosperity, the rest of the country might take notice.

To read more of the article, [click here](http://www.time.com/time/magazine/article/0%2C9171%2C1926017%2C00.html#ixzz2FQhJQyx3).

The first young woman I asked to read the paragraph read it a bit slowly, struggling a little with words like “ravenous” and “prosperity.” When she finished reading the paragraph, I asked what she was thinking. She stated, “Like if anything, like caused by nature disaster… it’d be on the news every day.” I asked her, “What else are you thinking?”, and she added, “about the violence...there so many violence like they can’t put it all on TV every day.” She went on to state, “If we had the natural disaster we wouldn’t notice, but some people don’t notice about like other things like violence…” I then took her through similar exercises with two more paragraphs that discussed the history of Detroit, and finally asked her to summarize the whole article. She stated,

Detroit was like a great city back then, and now, like, because of people’s decisions and the business that failed, it’s like kind of one of the worst cities in the country, and there’s more unemployment because the business going down, and it used be like one of the of… I don’t how to say it, business industry, because of the GM, and now it went down.

 The second student I interviewed with the same text read it out loud with more fluency than the first young woman, hesitating only on the word “devastated,” but quickly pronouncing it correctly. As she read it, I asked, “What does that make you think about?” She responded, “How global, like, weather or earthquakes, tornadoes, or natural disasters can affect the city.” I asked her to explain what made her think that, and she looked back at the text and pointed out the mentions of natural disasters. I asked what else she was thinking, and she again focused on natural disasters, saying, “That maybe we should become better prepared for other natural disasters…” She then read the next two paragraphs of the article, the same ones as the first student, including a section on the decline of the automotive industry in the Detroit area and the loss of jobs. I then asked, “Would you change your idea now about what the article is about?” She replied, “I still think it’s like the same, because it says years after Katrina has devastated New Orleans, it’s affecting everywhere else, so I do think it’s about how natural disasters might be affecting us.”

 The differences between these two young women’s comprehension were striking to me. The first student, despite having minor issues with fluency, clearly grasped the big picture of the article from the outset and understood the use of natural disasters as part of a comparison of Detroit to New Orleans and a critique of the media coverage of Detroit. The second student, however, seeing natural disasters mentioned at the beginning of the section, and then again at the end (Hurricane Katrina was mentioned in the third paragraph) got stuck on these ideas and did very little higher-level processing. She read the words, but she didn’t really think about the big picture. I ended up doing similar interviews with around thirty students, and I saw this problem again and again.

 Along with being able to observe students’ reading practices more closely through these interviews, I was also able to take the time to review the research and practice recommendations related to reading and thinking. I had heard of some of these ideas while teaching, but I never really had time to process them and think about how I could use them in my practice. One of the more important theoretical frameworks I began learning about involved the idea of apprenticeship and metacognition, as well as the related reading strategy of Think-Alouds. The more I learned about these ideas, the more I wished that they had been on my radar when I was teaching in the classroom. I’ll share my understanding of these ideas in the section below. I hope that others find them as valuable as I do.

**Apprenticeship, Metacognition, and Think-Alouds**

 Historically speaking, apprenticeship was the process in which expert craftsmen and artisans took young people under their wings and taught them their skills or an art over a period of years, first showing them how to do the work and then giving them increasing responsibility to do the work themselves. As applied in educational settings, apprenticeship refers to the process whereby novices, those without much skill and background in any particular area, can learn from more experienced others, including experts, through observation, participation and feedback (Rogoff, 1990). Participation starts out more as observation, and then proceeds with supported tasks, and then becomes more independent work.

 Fisher and Frey (2008) have written about a similar model referred to as the Gradual Release of Responsibility, and they present the instructional progression shown below:

* I do it
* We do it together
* You do it together
* You do it independently

The teacher models a practice, the teacher uses this practice *with* students; students practice it *together*, perhaps in cooperative group work or pairs; and then students do it independently. This idea follows the general approach to apprenticeship in that novices in any community need to see how something is done first, then they need to have practice guided by an expert, and then they can practice with peers then they can take on the challenge independently.

 This model works particularly well for reading across the content areas at the level of secondary education. Reading in middle and high school presents new challenges to students as they are asked to read a wider range of texts with a wider range of purposes. For example, what demands are being placed on students if they are first asked to read a technical report on earthquakes in science class, then go to history class and read a law written in 1798, and then go to English and read a poem? Reading across the content areas requires a range of knowledge and skills, and the ways we want students to think about text as they read differs as well. The idea of apprenticeship offers us an effective approach and suggests that we should provide students meaningful practice in a learning community where an expert (the teacher, maybe other students at some times, a parent) models a new practice, students practice it collaboratively with appropriate supports, and then they take on more independence.

 The idea of apprenticeship for content area literacy has been taken up very successfully by the organization WestEd with their Reading Apprenticeship (RA) program. In Reading Apprenticeship classrooms, students are “apprenticed” into more complex reading processes and ways of thinking across their core content area courses. This happens through a focus on thinking, in particular metacognition, as a core part of reading. Metacognition, which is often described as thinking about thinking, or as being aware of one’s own thinking, is necessary for thoughtful reading and engagement with text. As explained in the RA book *Reading for Understanding*, “At the heart of the Reading Apprenticeship classroom is metacognitive conversation: an inquiry into how readers make sense of text” (Schoenbach, Greenleaf, & Murphy, 2012, p. 89). These conversations are “both internal, as individual readers observe their own minds in actions, and external, when readers discuss what they are noticing, what they are stumped by, and how they are solving reading problems” (p. 90).

These conversations are different across different classrooms as well, and the types of thinking and questions that emerge depend in some ways on the disciplinary practices needed in the different content areas. RA provides a “map” for metacognitive conversations (Schoenbach, Greenleaf, & Murphy, 2012), which lists out the following practices in which students should engage when reading:

* noticing your thinking
* focusing on reading
* taking charge of reading
* becoming aware of subject area discourse

In other words, to become effective readers, students need to pay attention to their own thinking, they need to read mindfully and with a clear purpose, they need to have some initiative and responsibility for their own reading, and they need to become aware of how words and reading change across subject areas. In addition to these practices identified by RA, there are several practices that reading researchers, in general, tend to agree on as being important things to do while reading:

* generate questions
* visualize or create mental images
* compare and contrast
* make predictions
* summarize
* monitor comprehension and recognize when it breaks down

 One way to make these practices “visible” for students is for teachers to use think-alouds to model these practices. Think-Alouds are just what they sound like, moments when someone reasons through a reading problem while voicing their thoughts out loud. To learn what the practices above are, and how one goes about employing them, teachers can talk through their own processes with engaging and focused examples of the different practices. For example, while reading a description of global wind patterns, a teacher might think out loud and draw on the white board to show visualizing the winds on a globe might help understand the text better. Below is a detailed description of what think-alouds are and how they can be implemented.

Think-Aloud

*Description:*

A Think-Aloud is a strategy where the teacher reads a short sample of content-area text while pausing to make statements that reveal the teacher-as-reader’s thoughts about the text and strategies they are using to make sense of it. Afterward, students can practice making their own thinking visible by engaging in a Think-Aloud exercise with another student who takes notes on the strategies and approaches they use with the text.

The Think-Aloud strategy can serve a number of key purposes:

* + To model for students how reading strategies can be applied to content-area text,
	+ To develop students’ proficiency in content area/disciplinary thinking,
	+ To provide students practice managing their attention and application of strategies,
	+ And/or to make student thinking visible to themselves and their teacher, thereby informing helpful feedback.

Sometimes Think-Alouds are used for more general reading processes, such as comprehension monitoring or defining a new word using context clues. These strategies are appropriate with many different types of texts across all content areas.

Think-Alouds can also serve more content-based or disciplinary functions, such as when a reader of an historical primary document questions the source, or when a reader of a work of prose fiction thinks about the author's craft as represented in descriptive word choice.

Classroom Procedure:

*See the Think Aloud Model Script as an example of what you might model for students.*

* + During teacher modeling, the teacher should use one or two of the following Think-Aloud approaches and can progressively model different ones over several lessons.
		- Scanning the text and voicing predictions about its content and structure
		- Scanning the figures and captions as a pre-reading survey of the content
		- Asking questions and making predictions about the claims of the text
		- Identifying the main point versus supporting details
		- Making connections of new content to prior knowledge
		- Identifying the evidence behind scientific claims
		- Describing images that to come to mind
		- Modeling specific thinking important in the content area: for example, in science class, the teacher might model a questioning, skeptical stance; use of precise, objective terms; an emphasis on evidence; and/or comparing competing ideas. In history, a teacher might voice questions about the source of a document, including the authority and legitimacy, or a teacher might compare evidence in the document with evidence in another or versus a timeline or events.
		- Modeling reflection and synthesis when finished with a section by summarizing and drawing personal conclusions.
	+ Applying to student use:
		- Use this protocol occasionally with a focus on a particular objective, such as teaching pre-reading strategies or how to identify the main idea. Return to the protocol later with a different focus.
		- After teacher modeling, have student pairs perform the Think-Aloud in turn.
		- One student takes notes while the other student speaks. Each should record the strategies, analysis and reflections they hear the other student speak to.
		- Prompt students to conduct two or three rounds, using different prompts to guide the exercise.

References:

Fisher, D. & Frey, N. (2008). *Better learning through structured teaching: A framework for the gradual release of responsibility*. Alexandria, VA: ASCD.

Okrent, D. (2009, September 24). Detroit: The Death — and Possible Life — of a Great

 City. *TIME.com*. Retrieved from http://www.time.com/time/nation/article/0,8599,1925796,00.html.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social*

 *context*. New York: Oxford University Press.

Schoenbach, R., Greenleaf, C., & Murphy, L. (2012). *Reading for* *Understanding: How reading apprenticeship improves disciplinary learning in secondary and college classrooms*. San Francisco, CA: Jossey-Bass.

Schooler, J. W., Reichle, E. D., & Halpern, D. V. (2005). Zoning-out during reading: Evidence for dissociations between experience and meta-consciousness. In D. T. Levin (Ed.), *Thinking and seeing: Visual metacognition in adults and children* (pp. 204 –226). Cambridge, MA: MIT Press.

WestEd. Reading Apprenticeship (RA) program. <http://www.wested.org/service/reading-> apprenticeship-introduction/.