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Teaching Reading from a Metacognitive Perspective: Theory and Classroom Experiences

Annette F. Gourney

Developmental reading and learning specialists have long understood the importance of assisting in developing a more comprehensive or metacognitive approach to learning. Here, Annette F. Gourney asks, "What are the specific metacognitive skills that developmental college readers need, and how can they be taught?"

In answering these two questions Gourney examines research and theory from the past two decades. From this review, she describes a metacognitive approach to teaching as one that trains a student to identify his or her learning goals and select appropriate methods for achieving them, to monitor understanding of and progress toward those goals, and to clarify misunderstandings leading to the loss of comprehension. Finally, two exercises that promote the development of metacognitive skills are detailed: vocabulary in context and metacognitive reading strategies.

Educators are increasingly recognizing the value of instruction that focuses on the development of comprehensive strategies for thinking and independent learning (Stahl, Simpson, & Hayes, 1992). Included in this formulation are *metacognitive* skills, or skills for fostering awareness and control of one's learning (Baker & Brown, 1984). A metacognitive approach to education involves teaching students to identify learning goals, to choose the most appropriate strategies for reaching those goals, to monitor their understanding and their progress toward their goals, and to clarify misunderstanding when they have lost comprehension (Flavell, 1979; Palincsar & Brown, 1984, 1989; Sternberg, 1986). Students who have developed these skills are more able to understand, retain, and transfer knowledge to new situations than students who have been taught discrete skills without a broader context of strategic learning (Hartman & Sternberg, 1993).

What are the specific metacognitive skills that developmental college readers need, and how can they be taught? This article describes research on metacognitive skills important to reading comprehension, followed by two sample classroom exercises used by the author to teach these skills in a developmental reading course.

Metacognition in Reading

Research on metacognition in reading has focused on strategies for monitoring and improving comprehension. Palincsar and Brown (1984, 1989) have described six strategies found to enhance comprehension: (1) clarifying the purpose of reading; (2) activating relevant background knowledge; (3) allocating attention to the important ideas; (4) evaluating content for internal consistency and compatibility with prior knowledge; (5) self-monitoring to verify comprehension; and (6) drawing and testing inferences. Metacognitively skilled readers seek to establish "meaningfulness" in their reading and value careful selection of appropriate strategies and careful monitoring of their comprehension.

Developmental educators have documented the metacognitive strategies used by proficient, in contrast to less competent, college readers (Long & Long, 1987). Proficient readers see knowledge as an organization of concepts rather than as isolated facts; work to understand meanings and relationships rather than simply to recall details;

anticipate test questions about their reading; engage in self-questioning for understanding and test preparation; paraphrase in their own words; and make inferences. Less competent readers tend to be passive, to underline rather than to reformulate, to follow directions rather than to invent their own strategies.

Other research has verified that independent learning is enhanced when students generate and use their own strategies and self-questions rather than respond solely to teachers' questions and directions (Hartman, 1994; Palincsar & Brown, 1984; Paris, Wixson, & Palincsar, 1986). When developmental college readers were encouraged to create their own questions to identify and integrate the important concepts in a college psychology text, and were trained to differentiate between "knowledge" questions and "analytic" questions, they learned for the first time the difference between cramming facts and understanding meaning (Aldridge, 1989).

Self-questioning helps students both to identify important concepts and to monitor and clarify comprehension difficulties. The reciprocal teaching model (Hartman, 1994; Palincsar & Brown, 1984) emphasizes self-questioning to predict important ideas in the reading, to review important concepts, and to identify parts of text that students do not fully understand. Generating questions forces students to focus on what is important; answering them forces students to rework their understanding until it is satisfactory. Students may use a variety of strategies to rework understanding; some common ones are reading ahead, rereading, relating the text to prior knowledge, and relating ideas that appear in different parts of the passage to draw inferences that are not explicitly stated.

Observation of my own developmental reading students confirmed those of Long and Long (1987) that developmental readers tend to be passive readers: they underline, sometimes highlighting most of the text because they cannot tell which ideas are important; they rely on others for clarification rather than trying to figure out connections for themselves; and they overlook important ideas without even realizing it because they have not engaged in self-questioning or self-testing. Moreover, when they encounter an unfamiliar word, they often skip over it; or they may look it up in the dictionary but still be unclear about its meaning in the broader context of the passage. Without metacognitive skills, students all too often experience frustration and failure and give up prematurely. Therefore, in order to help students develop skills for figuring out vocabulary in context and for predicting ideas, generating and answering self-questions, monitoring comprehension, and clarifying confusion, I developed two collaborative learning exercises. These exercises, their rationale, and their outcomes are described below. Students were freshmen enrolled at a four-year urban public college, placed in an "upper developmental" reading course based on their performance on a vocabulary and reading test.

Exercise I: Vocabulary in Context

All metacognitive exercises have the common purpose of encouraging students to discover and rely on their own reasoning abilities rather than to depend only on external sources. I began with a vocabulary in context exercise both as a prelude to passage comprehension and to help students realize that their own reasoning, in addition to dictionaries, could be an important resource of knowledge: even when they do not know a particular word, they have many cues that they can pull together to figure out meaning.

In order to create a situation in which students would be forced to rely on their own reasoning because outside sources were unusable, I chose Lewis Carroll's poem *Jabberwocky* (Carroll, 1960, p. 136). *Jabberwocky* is composed largely of nonsense words, yet the poem tells an understandable story. Students were divided into collaborative learning groups of four and instructed to read the poem and to help each other find the meanings of as many unfamiliar words as they could. My role was to pose questions to help draw out students' thoughts if they got confused, but not to suggest definitions for them.

Despite the fact that I had told students that the words were made up, the impulse to look them up was so strong that a few students actually took out their pocket dictionaries. When they realized that they would have to reason out the meanings for themselves, they began to list words and their supposed meanings, and correctly defined most of them. At the end of the class period, the groups came together to explain their definitions and how they had derived them.

The following cues were most commonly used to figure out meanings: the sound of the word (e.g. "slithy" sounds like slithery or slimy); the form of the word ("ing" at the end of a word means a verb); the immediate context (e.g. "Twas" implies a description of a time or setting, so "Twas brillig" must describe that setting); and the broader context in the story.

Some sample definitions illustrate how students reasoned out meanings. Since "brillig" describes the setting, they reasoned that it must refer to the weather, or to the land and the creatures or plants in it, which are also alluded to by the other words in that verse. The *Jabberwock* must be some kind of beast: it has claws, teeth, and fiery eyes; one must beware of it, so it is dangerous; it "came whiffling," so it moves fast; it was "burbling," so it makes a characteristic noise; and there was joy when it was killed. The phrase "and with its head/He went galumphing back" describes a victory in battle; "galumphing" is a verb describing how the hero went — either galloping or strutting triumphantly because he had killed the beast and was carrying its head home. And "my beamish boy" must mean good and heroic, because the boy's father is happy and proud of him.

What began as an arduous exercise ended up as a fun and exciting project as students got into the spirit of the poem and discovered

previously unappreciated capabilities for figuring out the meanings of words. It is my belief that if students become dependent on others, whether people or dictionaries, to do their thinking for them, they lose confidence in their own intelligence; if so, then metacognitive exercises may have the dual purpose of expanding students' skills and their self-confidence as thinkers.

Exercise II: Metacognitive Reading Strategies

In this exercise, I adapted the reciprocal teaching model (Palincsar & Brown, 1984, 1989) to help students learn the metacognitive skills of prediction, question generation, comprehension monitoring, clarification of confusing statements, and summarizing important ideas. The context for these skills was a real newspaper article that was chosen because it contained a built-in ambiguity that would force students to examine their strategies for monitoring and clarifying a comprehension failure. The article, "Defiant Bicyclists to Snub S.F. Mayor" (Matier & Ross, 1997, p. A1) described plans for a grass-roots bicyclists' rights movement to stage a demonstration called Critical Mass in San Francisco's business district during the Friday evening rush hour. The ambiguity in the article was that, having been written for informed San Francisco residents, it never explained what Critical Mass was, only focusing on the contentious negotiations between the bicyclists and the mayor.

This exercise took four class sessions to complete. On the first day, students were asked to look over the article quickly and to generate questions on things they wanted to know and predictions of what they thought the article would be about. I made no suggestions and only listed students' ideas on the board, prompting them with "What else?" when there was a lull. The goal was to have students become aware of the many ways they could activate their thinking before and while they read.

Students used the title, subtitle, inset caption, headings and phrases that quickly caught their eye to generate the following lists, which actually captured many of the significant points in the article:

Questions

1. What is Critical Mass?
2. What does the mayor have to do with bicyclists?
3. Where is "everyone invited"?
4. Is there a demonstration?
5. Will there be a new rule about "hats and bats"? Will it apply to the police or to the cyclists?
6. Will there be a new law for cyclists?

Predictions

1. This is about bicyclists defending their right to ride.
2. There will be a boycott of talks with the mayor.
3. The bicyclists are going against the mayor.
4. It is political because the mayor is involved.
5. The cyclists will ride Friday.
6. They are affecting traffic control.
7. There may be violence.
8. The article will probably describe the traffic problems between the cars and the cyclists, maybe describe an accident.
9. The article will probably describe the political issue: The mayor will emphasize the traffic problems and the cyclists will emphasize their rights.
10. The article will discuss security measures.

On the second day I had students form groups of four. They were to read the article, search for the answers to their questions, verify the accuracy of their predictions, write down any new questions and try to answer them, and note any places where they got confused and what they did to clarify their confusion. These directions were listed on the blackboard. I asked each group to select one facilitator to see that everyone in the group contributed to the discussion and one secretary to write down and report the group's findings.

Whereas the first day generated enthusiasm, the second day generated frustration. Students quickly realized that the article never explained what "Critical Mass" was. Typical reactions were: "Is this the whole article? Is there something missing?" "What does 'hats and bats' refer to?" "We can't figure it out, we need a clue." "Why can't you just tell us the answer?" "How is this going to be useful to me?" Students were focused on getting the right answers to the questions, but had great difficulty identifying and describing the processes they used to find the answers. I had to repeat the instructions and give examples of what I meant by the instruction to describe not just the answers but *how* they got them. I also had to reassure them that the thinking process they used was more important than the answers, that they could do it, and that going through this would be beneficial to them because it would enable them to figure out the meaning of difficult reading passages when a teacher was no longer present to tell them. With encouragement and prompting, students began to work together to describe their answers and the steps they took to find them.

On the third day, each group reported their experiences. All agreed that "Critical Mass" was never explicitly defined and that they had to figure out its meaning. Here are some strategies they used:

1. *Think about what the words mean.* "Critical" means important; "mass" means amount; therefore, "critical mass" means to reach an important amount, i.e. enough cyclists to have an impact. (No one had heard the term "critical mass" in reference to atomic reactions.)
2. *Put together all the facts or phrases mentioned throughout the article and then see what they add up to.* For example, "demonstration," "lots of cyclists," "will block traffic," "will assert their right to ride" taken together paint a picture of a confrontational demonstration for cyclists' rights.
3. *Guess; then reread the confusing part of the passage and see if it makes sense.* For example, one student said he read the section headed "Hats and Bats," found the statement containing this phrase ("It's going to be hats and bats . . . with arrests") and concluded that it must refer to the police making arrests. In response to my prompt, "What will that be like?" they answered, there will be physical violence, like nightsticks against bicycle helmets.

At this point I commented that reading is not a sequential process, but a back-and-forth process. Pre-reading activates and focuses your thinking; then you jump around the article and relate different parts to each other as you look for the answers to your questions.

On the fourth day, we reviewed some guidelines for summarizing (write in paragraph form, include all the main points but not all the details, examples, or dialogue in the original article). How did they decide what to include? They answered:

1. Use the questions that you created before reading to help you read.
2. Use the section divisions of the article and work with the main ideas in each section.
3. Use the quotes in the article, but not word for word — just to identify what the people want.
4. See what the article is mainly speaking about.
5. Use the title, headings, subheadings, and insets for clues.
6. Find the outcome of the main idea — what happened.

A few of the summaries were excellent, a few too detailed, most too terse. The most common outcome was to state what the conflict was

without telling the *events* described in the article: what the parties did and what those parties predicted would happen next. Summarizing is hard, and the hardest aspect for students was to go beyond obedience of the rule that a summary should be short to a thoughtful consideration of what ideas are important. Development of good summarization skills requires a great deal of practice, possibly more than any of the other skills.

Finally, I asked students for their reactions to this holistic approach vs. the textbook exercises they had done previously to identify the topic, main idea, and supporting details of an isolated paragraph. Two to one, the majority preferred the holistic method, for two reasons: (1) You can get the big picture of what the article is about and that can help you to understand each paragraph. (2) You can get clues about the meaning of a paragraph by reading ahead or by looking back to other parts of the article. This, in a nutshell, captures the process of actively thinking to construct meaning from a written text.

Conclusions

These exercises demonstrate a holistic approach to reading, that is, reading with the whole context in mind. It is likely that good readers take this approach; they do not focus narrowly on the meaning of a word or the main idea of a paragraph in isolation, without paying attention to the meaning and direction of the whole piece. If we want to prepare students for real reading, we should teach reading skills in context, not in isolation, so that students can employ the full range of their thinking skills. Many of the skills attributed to proficient readers, such as constructing knowledge as an organization of concepts rather than as isolated facts, understanding meanings and relationships rather than recalling details, predicting the development of ideas, drawing inferences, and clarifying confusion (Long & Long, 1987; Palincsar & Brown, 1984, 1989) can best be built when students work with complete passages that have a fully developed conceptual structure. Attempting to develop students' comprehension using isolated paragraphs may seem simpler, but for my students who wanted to put clues together from the larger context of the article, it was actually more difficult.

Moreover, developing metacognitive reading skills is not a single-stage process. These skills require much repeated practice, and have to be learned many times over with different reading passages in order to become more comfortable and habitual. When I repeated this procedure using progressively lengthier and more technical passages, students still struggled to master the metacognitive skills, and needed to review them again and again. Students need to be prodded to read actively with each new piece, to overcome their resistance to thinking through their confusion and to changing old habits. Yet, only by struggling with

these skills over time did they begin to develop the confidence that they *could* figure out meaning for themselves.

Students initially found the metacognitive process arduous and frustrating because it forced them to think in ways they were not used to. However, as they worked together, they became more excited and enjoyed what they did, and afterward they were proud of what they had accomplished. They smiled as they reported what they had figured out. And the experience stayed with them: while reviewing these skills later with subsequent passages, they would frequently exclaim, "Oh, it's like Critical Mass!" The article that was initially frustrating became their symbol of struggle and success.

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Using a Model of Direct Instruction to Teach Summary Writing in a College Reading Class

Martha E. Casazza

In this article, Martha E. Casazza presents the theory-based direct instruction model EMQA, along with a description of how to use its component steps: explanation, modeling, questioning, and application. Casazza also illustrates the use of this model with a version of Brown and Day's well-researched summarization strategy for developing comprehension skills. In conclusion, the advantages of teaching summarization with the EMQA direct instruction model are provided.

One of the primary goals of a reading program offered at the post-secondary level is to assist students in becoming successful learners. The program needs to produce active, thoughtful readers who can monitor their own comprehension and who have a set of strategies for interacting with text and organizing the information into a meaningful context. These strategies increase both comprehension and later retrieval.

One strategy that reinforces this interaction and manipulation of text is writing summaries. Through it, students can almost see the cognitive process that underlies successful comprehension. In addition, they are practicing critical thinking skills, often for the first time. As Rose (1989) asserts, "I couldn't imagine a more crucial skill than summarizing: we can't manage information, make crisp connections or rebut arguments without it" (p. 138).

While Rose speaks from direct experience with adult learners, Kintsch and van Dijk (1978) and Irwin (1986) provide a theoretical foundation. Irwin has described macroprocessing, the procedure one uses to construct meaning, as "the process of synthesizing and organizing individual idea units into a summary or organized series of related general ideas" (p. 5). Good readers distinguish the most important ideas in a passage and summarize them according to an appropriate organizational pattern. Irwin suggests that the major purpose of this activity is to enhance recall of the material by organizing it and by decreasing the number of ideas that need to be remembered.

Using a model of direct instruction to teach summarizing provides a natural framework for emphasizing to students that it is their responsibility to bring meaning to the text. Through direct instruction, there is a gradual release of instructor support as students become capable of applying the strategies independently. Vygotsky (1984) laid the foundation for this concept of release through his "zone of proximal development" where the learner, with external assistance, progresses