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The Effects of Metacognitive Reading Strategies: Pedagogical Implications for EFL/ESL Teachers

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ABSTRACT

Research regarding the teaching of reading for English as a Foreign Language (EFL) and English as a Second Language (ESL) is still ongoing. This study focused on metacognitive reading strategies for these learners, first revisiting the concept of metacognition as proposed by Flavell, and then going on to explain reading strategies that require metacognitive skills within three knowledge dimensions: declarative, procedural, and conditional. Existing literature on metacognitive reading strategies for EFL/ESL learners is discussed, and pedagogical implications for teachers are offered, which include providing learners with explicit instruction as well as a variety of metacognitive reading strategies to help students to become independent learners.

INTRODUCTION

In the process of globalization, English has become a predominate language, and as a result the population of learners who study English has grown. There are two types of English learners: EFL and ESL. The former learn English in non-English speaking countries, and are therefore called English as a Foreign Language (EFL) learners (e.g., Japanese people who learn English in their country are EFL learners). The latter learn English in countries where English is used as a tool for communication and is formally spoken, and are identified as English as a Second Language (ESL) learners. People who live in the US and are immersed in English, such as Hispanic people who are learning English, are ESL learners.

This paper explores reading theories and practices for EFL/ESL learners, and in particular, reading practices from a theoretical framework of metacognition. Schwartz and Perfect (2002) note that there are two types of foundations in metacognition research. The first one is rooted in the study of Hart (1965), who investigated *feeling-of-knowing judgments*, which emphasized memory. The second type originated in the study of Flavell (1976), an American developmental psychologist. Influenced by Piaget, Flavell was interested in how people manage the interplay of consciousness and the cognitive process. Indeed, the term *metacognition* was coined by Flavell (1976).

THEORETICAL FRAMEWORK

What is Metacognition?

Flavell first introduced the term *metacognition* in his 1976 article, saying that metacognition is defined as “one’s knowledge concerning one’s own cognitive processes and outcomes or anything related to them” (Flavell, 1976, p. 232). Flavell further explains that metacognition is “the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective” (p. 232). Flavell (1977), and Flavell, Miller, and Miller (2002) point out that the improvement of metacognitive skills is a key to the success of the *formal operational stage* (in children older than eleven years) in Piaget’s Theory of Cognitive Development, and that metacognition is generally fundamental in a variety of areas, such as oral skills, reading, writing, language acquisition, attention, memory, and social interactions.

Flavell’s Model of Cognitive Monitoring

Flavell’s (1979) model of metacognition is the foundation for research in the field of metacognition today. According to his model, there are four categories: (1) metacognitive knowledge, (2) metacognitive experiences, (3) goals/tasks, and (4) actions/strategies. He reported that people monitor their cognitive process by using components described in these four categories. Metacognitive knowledge, the first category in the model of cognitive monitoring, is a person’s knowledge or beliefs about the factors that impact cognitive enterprises. It is acquired knowledge about one’s cognitive process and the diverse “cognitive tasks, goals, actions, and experiences” (p. 906), and has three variables: person, task, and strategy. The person variable is concerned with any knowledge or awareness about how one learns and processes their cognitive activities. For example, older learners recognize their memory abilities and limitations better than younger ones (Flavell, Friedrichs, & Hoyt, 1970). The person variable also includes the ability of a learner to evaluate strengths and weaknesses in reading; in other words, a person’s awareness of their abilities. The task variable, the second variable in metacognitive knowledge, is knowledge about the nature of the task and the demands of the task. For example, one understands the level of difficulty of the task and how to successfully meet the goal. Another example includes how a learner may know that he or she needs more time in understanding an expository text than others. The strategy task, the third variable, involves the strategies needed for achieving the goals. A learner might know that taking notes is an effective strategy for the summarization of a passage. All three variables of person, task, and strategy are interdependent when learners are engaged in metacognitive activities.

The second category, metacognitive experiences, is internal responses that people have regarding their metacognitive processing. Flavell defined metacognitive experiences as “any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise” (p. 906). For example, when a person is having a conversation with another, he or she might suddenly feel unsure about what the other person said. An individual’s awareness of failure, success, uncertainty, or satisfaction about things is included in this category.

Goals (or tasks), the third category in Flavell’s model of cognitive monitoring, are “the objectives of a cognitive enterprise” (p. 907). For example, in the case of reading, a goal or task may represent a comparison between amphibians and reptiles from a passage.

In the last category, actions (or strategies) are used by learners to achieve their cognitive and metacognitive objectives. That is, metacognitive strategies exist in order for them to monitor cognitive development, to control thinking activities, and to decide whether or not their cognitive aims are met. It should be noted that all four categories of metacognitive knowledge, metacognitive experiences, tasks or goals, and actions/strategies of Flavell's model of cognitive monitoring may be integrated during the process of monitoring and regulating.

Knowledge and Regulation in Metacognition

Subsequent research has revealed that there are two dimensions in metacognition (Baker & Brown, 1984; Brown, 1985; Brown, Bransford, Ferrara, & Campione, 1983; Carrell, Gajdusek, & Wise, 1998; Flavell, 1976, 1978). The first dimension is *knowledge of cognition*. Three factors make up this dimension: declarative knowledge, procedural knowledge, and conditional knowledge (Jacobs & Paris, 1987; Paris, Lipson, & Wixson, 1983; Schraw & Moshman, 1995). Declarative knowledge refers to “knowledge that a person may have about his or her abilities and about the salient learning characteristics that affect cognitive processing” (McCormick, 2003, p. 80). In the example of reading, declarative knowledge indicates a learner's understanding about what reading strategies are; knowing what summarizing, skimming, inferring, and taking notes are is declarative knowledge. Procedural knowledge is identified as “knowledge of how to execute procedures such as learning strategies” (McCormick, 2003, p. 80), or how to use the particular reading strategies. This knowledge requires learners not only to understand what reading strategies are, but also to understand how to actually use them. Conditional knowledge goes further, to include when, where, and why learners use particular strategies and assessments of their effectiveness. For example, readers know which strategies are most suitable for a variety of tasks in order to achieve their reading goals, and they are able to reflect on their use of the strategies.

The second dimension in metacognition is *regulation of cognition*. In the field of reading, regulation of cognition includes planning, monitoring, testing, revising, and evaluating strategies (Baker & Brown, 1984). Hacker (1998) notes that two parts can be recognized in regulation of cognition: monitoring and regulating. Determining tasks, reflecting on the step of task accomplishment, and predicting the results comprise monitoring. Regulation consists of selecting proper approaches and organizing processes of how to effectively conduct these strategies (McCormick, 2003). Van Kraayenoord and Goos (2003) assert that planning, choosing appropriate strategies, monitoring progress, evaluating outcomes, and revisiting employed plans and strategies are involved in the regulatory mechanisms.

METACOGNITIVE READING STRATEGIES

What are Metacognitive Reading Strategies?

Strategies specific to reading can be classified in the following three clusters of metacognition: *planning, monitoring, and evaluating strategies* (Israel, 2007; Pressley & Afflerbach, 1995). Planning strategies are used before reading; activating learners' background knowledge to get prepared for reading is an example of planning strategies (Almasi, 2003; Israel, 2007). Also, previewing a title, picture, illustration, heading, or subheading can help readers

grasp the overview of the text. Readers may also preview the general information in the text and its structure (Almasi, 2003; Paris, Wasik, & Turner, 1991). Learners may check whether their reading material has a certain text structure, such as cause and effect, question and answer, and compare and contrast. Further, setting the purpose for reading can also be categorized as a planning strategy (Paris et al., 1991; Pressley, 2002).

Monitoring strategies occur during reading. Some examples of monitoring strategies are comprehension of vocabulary, self-questioning (reflecting on whether they understood what they have read so far), summarizing, and inferring the main idea of each paragraph (Israel, 2007; Pressley, 2002). Readers may also identify and focus on key information or key words, including *but*, *however*, *on the other hand*, *in addition*, *also*, and *in conclusion*. Determining which part of the passage can be emphasized or ignored based on the purpose of the task is another monitoring strategy (Hudson, 2007).

Evaluating strategies are employed after reading. For example, after reading a text, learners may think about how to apply what they have read to other situations. They may identify with the author, a narrative, or main character, and may have a better perspective of the situation in the book than they did at first.

In summary, metacognitive reading strategies are classified into three groups of planning (pre-reading), monitoring (during reading), and evaluating (post-reading) strategies, and each group has a variety of strategies that require readers' metacognitive processing.

Research on the Effectiveness of the Metacognitive Reading Strategies

The following studies address the question: Can EFL/ESL learners improve their reading English comprehension using metacognitive reading strategies?

O'Malley, Russo, Chamot, and Stewner-Manzanares (1998) conducted a study in the US in order to identify different kinds of strategies used in the ESL classrooms, and to examine the relationship between the task and the proficiency level of the ESL students. The participants of this study were 70 high-school ESL students at the beginning and intermediate levels (ages 14 to 17). The students were from Vietnam, Puerto Rico, and Central and South America, consisting of approximately half boys and half girls. They were interviewed regarding their English learning experiences, particularly in reading. Spanish speaking ESL students were allowed to use their native language, if necessary. Their teachers were also interviewed regarding their students' learning strategies to gain a better understanding of the students' learning experiences. From the interviews, three categories were recognized: *metacognitive*, *cognitive*, and *social affective categories*. The metacognition category included planning (e.g., advance organizers), monitoring (including self-monitoring), and evaluating (including self-evaluation). The results of the interviews showed that subjects in the beginning stage employed metacognitive strategies 27.4% of the time, while participants in the intermediate stage used them 34.9% of the time. Furthermore, the findings indicated that the metacognitive strategy, planning, was most applied (82.3%) among both groups of ESL students, compared to other metacognitive strategies of monitoring and evaluating (9.4% and 8.3 %, respectively).

In another study (Upton, 1997), 11 beginning and intermediate Japanese ESL college students (ages 20 to 36) in the US were chosen based on their academic statuses (i.e., students at the ESL institute and students enrolled in college classes) and the levels of English proficiency evidenced by the results of the Test of English as a Foreign Language (TOEFL). The ESL students had lower TOEFL scores than those enrolled in college. The participants were asked to

try to think aloud in Japanese when they were processing in Japanese or to think aloud in English when they were processing in English. After the think-alouds, the subjects were interviewed regarding the results of their tape-recorded think-aloud tasks, and asked to explain how they were processing and why they were thinking in either English or Japanese while reading the passage. These interviews were conducted in Japanese. In this study, Upton looked at the role of the first and second languages in reading comprehension, and how students with diverse levels of English proficiency used the languages differently. The analysis of the think-aloud protocols indicated that there was a difference in using metacognitive strategies between more and less proficient students: Global strategies (such as prediction, identifying a text structure, integration, questioning about the text, interpretation, relating, commenting, and monitoring) are used more often among advanced participants than among less advanced ones. Not only did students in the more advanced group show more frequency of using these global metacognitive strategies, but they also depended more often on English (their second language) rather than Japanese (their first language) while processing these strategies. Learners in the lower level of the group depended on more local strategies, (such as paraphrasing, questioning of clause, questioning of word meaning, and word solving) rather than the global strategies. Upton's study suggested that ESL students with high levels of English proficiency used more metacognitive strategies.

Sheorey and Mokhtari (2001) examined differences in awareness of metacognitive strategies among ESL and native English speakers (of three hundred subjects, approximately half were ESL and half were native English-speakers), with average ages of 21.75 and 19.14 years, respectively, who were studying at a university in the US. They were given a survey asking questions regarding their awareness of reading strategies. Of the ESL subjects, more than half were from Asian regions, about 6% from the Middle Eastern areas, about 4% from Latin America, and the rest from the other places in the world. In their study, metacognitive reading strategies consisted of the following: (1) setting goals for reading, (2) previewing a book before reading, (3) monitoring the appropriateness of the textbook for the purpose, (4) identifying text structure, (5) determining important information in the textbook, (6) utilizing supplemental features (such as tables), (7) using cue words and typographical support (e.g., italics), (8) inferring, and (9) confirming predictions. The findings revealed that both ESL and native English readers in the more advanced groups were applying metacognitive strategies more often than those who were in the less advanced groups. Moreover, among ESL and native English readers, ESL learners applied metacognitive strategies more often. Overall, the study supported the effectiveness of using metacognitive strategies for both types of learners. The study also showed a correlation between high-proficiency students and the high frequency use of the strategies.

Zhang (2001) looked at awareness of metacognitive strategies for different English-proficiency levels of Chinese EFL college students who were learning English in their country. Based on the results of the College English Test Band II, 10 students (five subjects from each group of high and low English-proficiency levels) were selected from the larger group of 312 in the study. These 10 participants were asked about their awareness and strategies of reading, using the interview prompts, which were based on Flavell's (1979) model of metacognition and created by the author. These semi-structured interviews, during which the author occasionally asked the participants for further clarification, were conducted in Chinese to ensure clear communication. Zhang reported that after the analysis of the interviews, twelve kinds of awareness about metacognitive strategies emerged. They included (1) predicting content in the text, (2) monitoring, (3) acknowledging deficiency of vocabulary knowledge, (4) admitting inadequate prior knowledge, (5) skimming for key information, (6) translating into the first

language, (7) re-reading, (8) using a dictionary, (9) inferring, (10) conducting grammatical analysis, (11) cooperating with others for better meaning-making, and (12) interacting with the text and author. There was a significant difference among more advanced and less advanced participants: the former group was aware of their strengths and weaknesses in reading strategies, while the latter was not. It was reported that the participants in the high scoring group used strategies such as monitoring their reading comprehension, skimming for the key ideas, and guessing meaning, while the subjects in the low-scoring group noted that they depended on a dictionary for word meaning, and translated passages from English into Chinese. The common themes found for both groups were that they were struggling with insufficient knowledge of vocabulary, and that they re-read sentences or paragraphs for clarification of the meaning. Similar to the finding of Upton's (1997) study, Zhang's study found that more advanced EFL students tend to use global strategies, while less advanced ones depend on local strategies. Zhang called for further research on using metacognitive strategies for specific tasks.

Salataci and Akyel (2002) explored the effectiveness of instruction for metacognitive strategies in both Turkish and English among Turkish learners. They were interested in whether or not an explicit training for metacognitive strategies would make a difference in reading comprehension for EFL learners. Twenty EFL learners at a university in Turkey participated in the study. They took pre- and post-tests both in Turkish (their first language) and English (their foreign language). Observation and interviews were also included in the study, and eight of the subjects also employed think-aloud tasks. For four weeks, in a three-hour-per-week class, the participants were taught how to use metacognitive strategies, especially how to activate background knowledge and how to monitor their reading process. Differences of reading strategies before and after the training were found in the study: local strategies (such as using a dictionary and focusing on grammar or word meaning) for reading in both Turkish and English were used less often after the training than before, and after instruction, the use of global strategies (including predicting, skimming for main ideas, and summarizing) increased for reading in both languages. In other words, the explicit training positively influenced the use of the global strategies for the EFL students.

Fung, Wilkinson, and Moore (2003) studied whether or not learning metacognitive strategies in the first and second languages of ESL students would make a difference for their English reading comprehension. Twelve sixth- or seventh-grade Chinese ESL students in New Zealand participated in an intervention for metacognitive reading strategies in both Chinese and English. During this training, instructors explicitly taught how to monitor reading progress, summarize, question, clarify, and draw inferences. Each session was approximately thirty-five minutes long and conducted on a daily basis for fifteen to twenty days. Both languages were used in turns (on the first day, the participants were instructed in Chinese; on the second day, their instruction was in English; the third day, Chinese instruction was used, and so on). After the training, student performance in the think-aloud protocols indicated that their use of metacognitive strategies when reading expository passages in both languages tremendously increased. Specifically, their abilities to draw inferences from the text in both languages were developed through *reciprocal teaching support*. The authors concluded that ESL students benefited from the treatment of metacognitive reading strategies in their first and second languages, and developed appropriate usage of these strategies. Their study is distinctive in that all students showed great improvement, whereas in other studies, only the high-level students improved the most.

As the above studies show, intervention for metacognitive strategies is advantageous for EFL/ESL learners. However, this was not the case for Janzen's (2003) study of strategic training for third-grade Navajo students. Twenty-one students in an intervention group and 18 students in a control group participated in the study. The former group received a thirty-minute intervention (on average) per week. They learned strategies such as guessing, previewing, questioning, determining goals for reading, and activating background knowledge through whole class discussion and group work. Students in the control group received more traditional instruction and while the students still worked in groups and received the teacher's instruction focusing on decoding and word meanings, there was no discussion about specific reading strategies. Research shows that the style of instruction employed in the control group was typical for Navajo learners (Hartle-Schutte, 1992). Data was collected from standardized reading tests, questionnaires about reading behaviors (prior to and following the intervention), and think-aloud protocols (after the intervention). After one year, the post-reading test indicated that there was no significant difference between the subjects in the training and control classes. However, from an analysis of the questionnaires, it was discovered that consciousness of reading strategies in the intervention group did increase, and that more metacognitive strategies were performed during the think-aloud task among these subjects than among those in the traditional group.

In summary, although Janzen's study did not directly support the effectiveness of teaching metacognitive reading strategies, the other previously discussed studies illustrate its positive influence for EFL/ESL learners. Learning what strategies are, how to use them, when and where to use particular strategies, and the importance of evaluating their use is, therefore, key to the development of reading comprehension for students whose first language is not English.

PEDAGOGICAL IMPLICATIONS FOR TEACHERS AND CONCLUSION

How can teachers support learners whose first language is not English? Teachers regularly use metacognitive reading strategies with their students, expecting students to also use them independently, which may or may not be the case. Three suggestions may be offered for teachers: First, teaching metacognitive strategies explicitly is a key for success. As studies demonstrate, students benefit from receiving a direct explanation of strategies that facilitate their reading outcome (Anderson & Roit, 1993; Baker, 1996; Dole, Duffy, Roehler, & Pearson, 1991); that is, teaching strategies step by step is important. Moreover, clarifying why it is important for the students to learn a variety of strategies helps them understand—and want to learn.

Second, it is recommended that EFL/ESL teachers use diverse metacognitive reading techniques during classroom instruction. A *picture walk* for previewing texts is one example; it consists of looking at pictures to gain an understanding of what a story is about before it is read. Teachers and students may look through the text together and discuss any ideas students come up with from the pictures. Teachers may expand the ideas by adding further prompt questions for preparation of the actual reading, activating their background knowledge. Using *semantic mapping* to organize ideas may be applied before, during, and after reading. Semantic mapping is defined as “a graphic display of a cluster of words that are meaningfully related” (Harris & Hodge, 1995, p. 230). Students first draw a map to describe what they already know about a topic they are about to explore, then during reading, they may add information obtained from a passage, modifying their map as they read. After reading, they may reflect on whether activating

their prior knowledge about the topic was useful or not. This strategy helps students not only reflect on their learning process, but also confirm their understanding of the text.

Another metacognitive teaching technique is utilizing *graphic organizers*, which are visual representations or illustrations that organize the information of a text. For example, they can be used for teaching expository text structures, including cause and effect, question and answer, simple listing, chronological order, compare and contrast, and description. Students who understand how a text is structured have better ideas about what information comes next, or what information they are expected to look for. It is important that teachers employ a variety of methods, appropriately selecting strategies in order to achieve specific goals.

Equally important, teachers are encouraged to model metacognitive strategies, supporting students as they learn how to use them, then reducing that support as students learn how to use them independently. Revisiting the model of Vygotsky's zone of *proximal development*, Pearson and Gallagher (1983) introduce *gradual release of responsibility*: teachers first teach what a strategy is and model how to use it before students actually try. At first, teachers may elicit input while they model strategy use. As students become familiar with the strategies, they continue to work with teacher assistance and, lastly, students will independently employ strategies without any support from their teachers. In this process, teachers' involvement is gradually reduced, while students' engagement in the strategy increases.

Finally, metacognition—thinking about thinking—is key to reading comprehension. Based on Flavell's (1979) model, this paper has explored the role of metacognitive reading strategies for EFL/ESL learners. Students would do well to acquire not only declarative knowledge (knowing what strategies are) but also procedural knowledge (knowing how to use the strategies) and conditional knowledge (knowing when, where, and why to use the strategies and evaluating their use). For EFL/ESL teachers, it is essential to teach metacognitive strategies explicitly, provide diverse methods, and facilitate students' learning to help them become independent practitioners. Exploring the role that both first and second languages play in developing students' metacognitive strategies remains a fertile ground for further research.

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