

# METACOGNITIVE READING STRATEGIES TO IMPROVE READING COMPREHENSION AND PERFORMANCE

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## ABSTRACT

The purposes of this study were 1) to determine the differences in awareness of metacognitive reading strategies used before and after the strategy instruction; 2) to investigate the effectiveness of using metacognitive reading strategies on students' reading comprehension and 3) to examine the effects of metacognitive reading strategy instruction on students' reading performance. It was hypothesized that instruction using metacognitive reading strategies helped improve the students' reading comprehension and reading performance as students could use the strategies as a tool not only to motivate them to read but also to facilitate their reading.

Data were collected by questionnaires, conversational interviews, and a focus group discussion and then analyzed using descriptive statistics and content analysis. Research findings could be concluded that 1) the students' post-experiment metacognitive reading awareness was significantly higher than their pre-experiment counterpart at the .01 level; and 2) metacognitive reading strategies enabled the students to better understand the reading text, as measured by their post-reading notes, and they also enabled students to improve their reading performance.

**KEYWORDS** : Metacognitive reading strategies, Reading comprehension, Reading performance

## บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อ 1) ศึกษาความแตกต่างของการรับรู้การใช้กลยุทธ์ "การกำกับตนเองในการอ่าน" ระหว่างก่อนและหลังการเรียนกลยุทธ์ดังกล่าว; 2) ตรวจสอบประสิทธิผลของการใช้กลยุทธ์ "การกำกับตนเองในการอ่าน" ที่มีผลต่อการความเข้าใจในการอ่านและ 3) ศึกษาผลการสอนโดยใช้กลยุทธ์ "การกำกับตนเองในการอ่าน" ต่อพฤติกรรมการอ่าน การวิจัยนี้มีสมมุติฐานว่าการสอนการใช้กลยุทธ์ดังกล่าวสามารถช่วยให้นักศึกษาอ่านเข้าใจและมีพฤติกรรมในการอ่านดีขึ้นโดยนักศึกษานำไปเป็นเครื่องมือและแรงจูงใจในการอ่าน

ข้อมูลวิจัยครั้งนี้ได้จากแบบสอบถาม การสัมภาษณ์ และการสนทนากลุ่ม ส่วนการวิเคราะห์ข้อมูลใช้สถิติเชิงพรรณนาและการวิเคราะห์เนื้อหา ผลของการวิจัย สรุปได้ว่า 1) การรับรู้การใช้กลยุทธ์ "การกำกับตนเองในการอ่าน" ของนักศึกษาก่อนและหลังการสอนการใช้กลยุทธ์ดังกล่าวแตกต่างกันเพิ่มขึ้นอย่างมีนัยที่ ระดับ .01 2) กลยุทธ์ "การกำกับตนเองในการอ่าน" ช่วยให้นักศึกษาเข้าใจในเรื่องที่อ่านมากขึ้น วัดได้จากงานเขียนบันทึกหลังการอ่านของนักศึกษา และช่วยพัฒนาพฤติกรรมการอ่านให้ดีขึ้น

**คำสำคัญ** : กลยุทธ์การกำกับตนเองในการอ่าน ความเข้าใจในการอ่าน พฤติกรรมในการอ่าน

## Rationale

Reading has long been valued as a tool to acquire knowledge; however, it is regarded as a difficult task for a large number of EFL students. In most instances, students tend to view reading as a passive process while actually it is an interactive, problem-solving process of making meaning from texts. The process involves the reader, the text, as well as the purpose of reading. In reading, the reader brings to bear on the reading text his/her prior knowledge and experiences of the subject matter, cultural and social backgrounds, as well as his/her knowledge and experiences about reading and language. In this way, meaning is not situated in the text but it is negotiated between the reader and the text.

Reading involves a number of cognitive processes; therefore, awareness and understanding of these processes help readers perform their reading better. To help students improve their comprehension, a primary reason for reading, it is necessary to teach them metacognitive strategies (Baker, 2002; Hartman, 2001; Israel, 2007). Likewise, reading researchers believe that the metacognitive awareness and the monitoring of the comprehension are important to reading comprehension (Mokhtari & Reichard, 2002; Kuhn, 2000; Thomas and Barksdale-Ladd, 2002). By the same token, strategy instruction has demonstrated that students can learn to use metacognitive strategies for better comprehension (Anderson, 2002). More importantly, research results (Baker, 2002; Hartman, 2000; Cooper, 2004; Collins, 1996) indicated that students who received metacognitive instructions not only improved their reading comprehension but also their reading performance.

According to Hughes (2007), good readers are aware of the cognitive processes involved in reading and consciously control them while some poor readers

continue to read even though they do not comprehend. However, many students are still unaware of how metacognition can improve their reading comprehension and performance. This study; therefore, aimed to 1) determine the differences in students' awareness of metacognitive reading strategies used before and after the strategy instructions 2) investigate the effectiveness of using metacognitive reading strategies on students' reading comprehension 3) examine the effects of metacognitive reading strategy instruction on students' reading performance.

## Review of related literature

Metacognitive reading strategies help improve students' reading comprehension. Reading is a process of concurrently extracting and constructing meaning through interaction and involvement of three elements: the reader, strategies used, and the materials read (Snow, 2002) whereas comprehension is viewed as the result of this process.

Metacognition generally known as "thinking about thinking," has become an important concept in theories of education since it was first introduced by John Flavell in the 1970s. With regard to reading, Mokhtari & Reichard (2002) have defined metacognition as the knowledge of the readers' cognition about reading and the self-regulating text when they read. Similarly, Kuhn (2000) defines metacognition as a process enhancing metacognitive awareness of strategies and how these reading strategies are applied to process new information.

Metacognition has long been recognized as an important role in reading. According to Collins (1996), 92% of his studies found that metacognitive knowledge and reading comprehension were related significantly. Furthermore, metacognitive instruction is found to

improve reading comprehension (Cooper, 2004; Goldman & Rakesteraw, 2002). Other studies have yielded interesting and insightful findings that students can be helped to acquire reading strategies and processes used by good readers, and that this acquisition improves their reading comprehension (Farstrup & Samuels, 2002; Dewitz and Dewitz, 2003).

It is also found that the use of metacognitive reading strategies increases students' reading performance (Anderson, 2002). Mokhtari & Reichard (2002) found that good readers use metacognitive strategies in reading and their high achievements in reading are correlated with high abilities in using these strategies whereas the studies conducted by Pressley (2002) showed that poor readers are less proficient in applying such strategies in their reading. Snow (2002) views that lack of these metacognitive reading strategies is one of the main reasons why some students do not become good readers. He asserts that these metacognitive strategies should be taught to poor readers so that they can use them as a tool to tackle their problems in reading.

It is essential that metacognitive strategies be taught to students at any level, including those in the university (Diket & Abel, 2001; Thomas & Barksdale-Ladd, 2000). In an investigation at a Thai university, Phakiti (2003) found that the use of cognitive and metacognitive strategies had a positive relationship to the reading test performance while highly successful test-takers reported significantly higher metacognitive strategy use than the moderately successful ones.

## Research Methodology

This study was based on the hypothesis that the metacognitive reading strategies used before, during and after reading can enhance the students' reading comprehension as well as their reading performance

This study was conducted in an ongoing regular 'Reading in Business' class at Bangkok University. The 40 participants in this study were fourth-year English major students selected from those enrolling in the course. These samples were divided into two groups-20 good readers and 20 poor readers-based on their grades in 4 previous reading courses. Good readers were defined as those with grades A or B+ whereas poor readers were defined as those with grades C or D. Eventually, 16 students, the top eight from each group, were chosen for study in class observation, conversational interviews, and group discussion.

The following instruments were utilized:

### Instrument 1: MARS

The Metacognitive Awareness of Reading Strategies Inventory (MARS) designed by Mokhtari and Reichard (2002) was used to assess students' awareness and the use of reading strategies while they read. It consists of 30 items of metacognitive reading strategies.

### Instrument 2: Response Scoring Rubric

The rubric based on Illinois Reading Assessment Frameworks (ISBE, 2004) was used to assess the students' improvement in reading comprehension. The rubric consists of 6 items: 1) showing understanding, 2) focusing on key ideas, 3) discussing relevant details, 4) providing supportive reasoning, 5) connecting with personal experience, and 6) indicating interpretation,

### Instrument 3: Checklists

The four checklists based on Illinois Reading Assessment Frameworks (ISBE, 2004) and Reading Performance Level Descriptors (Pennsylvania Department of Education, 2004) were used to determine: Checklist 1-their ability in understanding the texts; checklist 2-frequency using metacognitive reading strategies before, during, and after reading; checklist 3-their attitude and motivation in reading; and checklist

Figure 1: Metacognitive reading strategies used before, during, and after reading

	Reading Strategies	What students do
Before Reading	Previewing	Read the title, the introduction and conclusion Identify what they were about to read.
	Activating Prior Knowledge	They think of what they know about the topic to make their reading meaningful.
	Setting purpose	What they want to know or what they have to do (some tasks-to answer questions, to give response)
During Reading	Self-questioning	Ask questions and look for answers to clarify their understanding.
	Using fix up strategies	Reread, use prior knowledge, visualize the text and identify key words, adjust speed
	Summarizing	Summarize main points to check if they understand the text
After Reading	Reflecting	Discuss what they have learned
		Reflect and write their reading response

4-Improvement in their reading performance.

**Instrument 4: Questions for conversational interviews**

The questions (adapted from Grabbe, 2001) were used in the conversational interviews to check what reading strategies the students used to better understand the text and to improve their reading performance.

**Instrument 5: Questions for focus group discussion**

The questions (adapted from Grabbe, 2001) were used to find out how the use of the metacognitive approach before, during, and after reading and how the reading strategies help students improve their comprehension and their performance.

The procedure and the instruments applied during the 12 weeks of study can be summarized as follows: in the first week, students were given guidelines on what they would do and the benefits they would get. They completed MARS1 to find out the awareness of

their reading metacognition. Each week students were provided with an article to read and practice using metacognitive approach before, during and after reading together with selected reading strategies. They then discussed the main points and wrote reading responses to show their understanding. By the 4th week, they were expected to be able to self-regulate with metacognitive approach before, during and after reading and to use different strategies to help them better understand the texts.

At the end of each session, their reading responses were assessed by a designed reading scoring rubric to check their comprehension level. Conversational interviews were conducted after classes. Towards the end of the study, all students participated in a focus group discussion to talk about their own performance.

**Analysis and Findings**

First, to determine if their awareness of the metacognitive reading strategies had developed after

the strategy instruction, data from MARSJ were analyzed. All participants' responses (N = 40) were scored for the 30 items of reading metacognitive reading strategies. The means and standard deviation were reported to determine if differences existed between before and after the strategy instruction. Tables 1 - 3 reveal that all participants have developed more awareness in these strategies in all three subscales.

The results of MARSJ in Tables 1, 2, and 3 show that metacognitive awareness in reading of both good and poor readers increased after the strategy instruction. The mean scores of both groups significantly increased in global reading strategies (Table 1) and in support reading strategies (Table 3) while the mean scores in problem-solving reading strategies (Table 2) increased

slightly. Students admitted in their interviews that they used problems solving reading strategies before while some global and supporting reading strategies were not familiar to them at first; however, they learned to use them more often later.

Table 4 shows that the mean scores of overall metacognitive awareness in reading before and after instruction are significantly different with mean scores higher (3.55) than before the strategy instruction (2.99). Significance was established at the 0.01 level.

Secondly, to check if students' reading comprehension had improved as a result of using these strategies, reading responses, class observation and conversational interviews were analyzed. Eight reading responses from 16 participants were assessed by a

**Table 1** Mean scores of metacognitive awareness (Global reading strategies) before and after the instruction

No.	Reading Strategies	$\bar{X}$ (Good)		$\bar{X}$ (Poor)		$\bar{X}$ of N = 40	
		before	after	before	after	before	after
1	I have a purpose in mind when I read.	2.45	3.50	2.75	3.60	2.60	3.55
3	I think about what I know to help me understand.	2.90	3.85	3.40	4.00	3.15	3.93
4	I preview the text to see what it's about.	2.90	3.25	3.05	3.65	2.95	3.45
7	I think about whether the content of the text fits my reading purpose.	2.20	3.05	3.05	3.35	2.63	3.20
10	I skim the text first by noticing organization.	3.20	3.55	3.00	3.65	3.10	3.60
14	I decide what to read closely and what to ignore.	2.90	3.55	2.75	3.30	2.83	3.43
17	I use tables, figures, and pictures in text to increase my understanding	3.30	3.50	2.95	3.40	3.13	3.45
19	I use context clues to help me better understand.	3.10	3.65	3.25	3.85	3.18	3.75
22	I use typographical aids to identify key point.	2.80	3.30	2.25	2.75	2.53	3.03
23	I critically analyze and evaluate the text.	2.45	3.00	2.00	2.60	2.23	2.80
25	I check my understanding when I come across conflicting information.	3.10	3.75	2.95	3.40	3.03	3.58
26	I guess what the material is about when I read.	3.20	3.75	3.15	3.65	3.18	3.70
29	I check to see if my guesses are right or wrong.	2.55	3.40	2.80	3.65	2.68	3.53
	Overall for this subscale	2.85	3.47	2.87	3.45	2.86	3.46

**Table 2** Mean scores of metacognitive awareness (Problem-solving reading strategies) before and after the instruction

No.	Reading Strategies	$\bar{X}$ (Good)		$\bar{X}$ (Poor)		$\bar{X}$ of N = 40	
		before	after	before	after	before	after
8	I read slowly but carefully to be sure I understand what I'm reading.	3.95	3.90	3.75	3.80	3.85	3.85
11	I try to get back on track when I lose concentration.	3.75	4.25	3.05	3.85	3.40	4.05
13	I adjust my reading speed.	3.00	3.60	2.55	3.35	2.78	3.48
16	When the text becomes difficult, I pay closer attention to what I'm reading.	4.12	4.17	3.41	3.88	3.76	4.03
18	I stop and think about what I'm reading.	3.20	3.35	3.20	3.85	3.20	3.60
21	I visualize to help remember what I read.	2.80	3.30	2.60	3.45	2.70	3.38
27	When text becomes difficult, I reread to increase my understanding.	3.95	4.50	3.60	4.45	3.78	4.47
30	I try to guess the meaning of unknown words	2.95	3.80	3.35	4.25	3.15	4.03
	Overall for this subscale	3.47	3.86	3.19	3.86	3.34	3.86

**Table 3** Mean scores of metacognitive awareness (Support reading strategies) before and after the strategy instruction

No.	Reading Strategies	$\bar{X}$ (Good)		$\bar{X}$ (Poor)		$\bar{X}$ of N = 40	
		before	after	before	after	before	after
2	I take notes while reading to help me understand what I read	2.35	3.25	2.15	3.20	2.25	3.23
5	When text becomes difficult, I read aloud to help me understand.	2.95	3.00	2.95	2.70	2.95	2.85
6	I summarize what I read to reflect on important information in the text.	2.45	3.15	2.35	3.15	2.40	3.15
9	I discuss what I read with others to check my understanding.	3.45	3.85	2.95	3.40	3.21	3.63
12	I underline or circle information in the text to help me remember it.	3.95	4.35	3.80	4.00	3.88	4.18
15	I use reference materials such as dictionaries to help me understand.	4.00	3.80	3.90	3.95	3.95	3.88
20	I paraphrase to better understand what I read.	2.35	2.90	2.35	2.95	2.35	2.93
24	I go back and forth in the text to find relationships among ideas in it.	3.10	3.70	2.55	3.40	2.83	3.55
28	I ask myself questions I like to have answered in the text.	2.40	3.25	2.05	3.15	2.23	3.20
	Overall for this subscale	3.00	3.47	2.78	3.32	2.89	3.40

response scoring rubric. The scores obtained from each response were calculated in percentage and the mean scores were used to check the levels of comprehension.

Table 5 shows improvement in students' reading comprehension after the strategy instruction although some students (25%) still showed low comprehension. It was explained in their conversational interviews that they were able to get the main idea and identify key ideas. They felt that their comprehension as a whole had improved. However, it didn't imply that they could understand everything in the reading text. One of the reasons why they didn't score well in the reading rubric was that most of them didn't connect their personal experience in their reading responses. In their conversational interviews, they revealed that it was due to the time constraint given in class. In some cases, they admitted they didn't have much personal experience on the topic.

Meanwhile the three poor readers scored at an average level of comprehension admitted in the conversational interviews that some articles were too difficult due to vocabulary difficulty, complication of texts or concepts, and their lack of background knowledge on the topic. However, it is interesting that one of the poor readers could improve his reading comprehension up to a good level. This was explained later in the interviews in which he acknowledged that the strategy instruction helped him know what strategies to use and how to use them; as a result, it improved his reading comprehension.

The class observation and conversational interviews supported the findings from students' reading responses. Checklist 1 revealed that most participants reported high *abilities in using the strategies* to help in their comprehension with mean scores ranging from

**Table 4** Mean scores of overall metacognitive awareness in reading before and after strategy instruction

Reading Strategies	Before		After		t	p
	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
Global	2.86	.552	3.46	.572	-8.831	.001**
Problem-solving	3.34	.554	3.86	.544	-7.153	.001**
Support	2.89	.489	3.40	.568	-6.979	.001**
Overall	2.99	.453	3.55	.510	-8.849	.001**

\*\*Significance at 0.01 ( $p < .01$ )

**Table 5** Levels of comprehension as measured by the reading response scoring rubric

Levels of comprehension	%	No. of Participants (before)	No. of Participants (after)
Very Good	86 - 100	-	5 (31.25%)
Good	75 - 85	5 (31.25%)	4 (25%)
Average	60 - 74	2 (12.50%)	3 (18.75%)
Low	50 - 59	4 (25%)	4 (25%)
Very Low	Below 50	5 (31.25%)	-

3.62 - 4.81. The two strategies they did well were *determining the writer's purpose* (4.68) and *identifying the main idea/main points* (4.81). The reason might be that these two strategies did not require much detail from the text to process while *recognizing cause-effects* (3.68) required more thorough details to do. Participants mentioned in the interview that they understood the main points but not all the details. All in all, learning how to use these reading strategies gave them tools to try when they didn't understand what they were reading. They all admitted that using these reading strategies helped them better understand the text.

Finally, in order to find out if the metacognitive reading approach in which they self-monitor before, during, and after reading enhances their reading performance checklist, conversational interviews, and a focus group discussion were analyzed.

Checklist 2 revealed a high *frequency of using the strategies* with mean scores ranging from 3.56 - 4.81. Participants often used *fix-up strategies* (4.81) when they did not understand the text. They revealed in the focus group discussion that these fix-up strategies were not difficult to use once they learned and practiced how to use them. They also admitted that using the metacognitive approach before, during, and after reading not only made them get involved but also motivated them to read since the approach guided them what to do. Besides, learning to use different reading strategies helped them improve their comprehension and reading performance. They remarked in their interview that after the instruction, they learned that if one strategy didn't work, they would try another strategy. They didn't get stuck but moved on when they read. These were some of the reasons why they considered themselves as better readers especially the poorer ones.

Checklist 3 showed that participants had high *reading motivation* with mean scores ranging from 3.37 - 4.75 and a positive attitude with mean scores ranging from 3.5 - 3.87. Regarding their reading motivation, it was explained in the focus group discussion that the approach helped them get involved and motivated them to read. At the same time, their attitude had changed to be more positive towards reading. Before being exposed to the metacognitive approach, most of them had low motivation and negative attitude caused by one or more of the following reasons: difficult vocabulary, long or complicated sentences, no prior knowledge, no interest in business issues, dislike for figures, etc.

Checklist 4 demonstrated the *improvement in participants' reading performance* at a high level with mean scores ranging from 2.58 - 3.0 This was explained in their conversational interviews and focus group discussion in which most students stated that the strategy instruction helped them get involved, understand purposes of reading; know what strategies to use; know what they understood and what they did not; and know what to read and what to ignore. The observation also indicated noticeable improvement in their performance as they assumed more responsibility for their own reading.

The results of this study have implications for students in the realm of TEFL. That is, students should be taught to use different metacognitive reading strategies to facilitate their reading since strategy instruction has positive results on reading comprehension (Houtveen et al., 2007). Paris & Fluke (2005) also note that better understanding of what reading strategies are and how to use them can help readers overcome their reading difficulties. From the findings above, it can be concluded that strategy instruction has a positive effect on college students, especially on poor readers. They can use these



strategies as tools not only to unlock their difficulty in comprehension but also to encourage them to get involved in reading.

## Conclusion and Discussion

Metacognition, based on the findings of numerous studies, is a tool of wide application for solving learning difficulties. When applied to the field of reading, metacognition contributes to understanding how reading comprehension occurs and how instructional strategies facilitate reading comprehension. Apparently, it is necessary to teach metacognitive reading strategies to help students, particularly poor readers. If they fail to develop their reading strategies in comprehension, they will tend to dislike reading and will, in turn, avoid further reading. This research was conducted to find out whether metacognitive strategies and metacognitive strategy instruction have positive effects on reading comprehension and performance or not.

The findings of the study yield positive results. First, the study indicates that after the strategy instruction, participants were more aware of the metacognitive reading strategies. The mean scores before and after strategy instructions were significantly different at the level of 0.01; the mean scores increased from 2.99 to 3.55 (Table 4). This finding was in agreement with Collins (1996)'s assertion that awareness of metacognitive strategies can be learned by instruction and can be integrated into instruction to make students take an active role in reading.

All participants reported using most strategies at a high level in MARSJ although some strategies were actually used more often than others. It is interesting that poor readers tended to follow the approach more rigorously since they normally did not have tools to help them read while some good readers did not strictly

follow the approach as they might have had their own strategies to achieve comprehension.

Secondly, participants admitted that knowing how to use different reading strategies helped them improve their comprehension. The reading scoring rubric reveals that their comprehension improved from the first reading response to the later ones although it did not increase consistently. This is due in part to the complexity of and unfamiliarity of some texts, as explained in their conversational interviews.

It can be concluded that strategy instruction affects the readers' comprehension. Not only does metacognitive reading instruction facilitate reading comprehension but it is also strongly associated with successful reading development (Cooper 2004; Goldman & Rakesteraw, 2002). In the same respect, Collins (1996) who examined 13 studies on the relation between metacognition and reading comprehension found that all studies except one reported a statistically significant effect of reading strategy instruction and students' reading comprehension. Reading strategies are an important aspect of learning to read and knowing how to use multiple reading strategies is an important metacognitive role in reading as Pressley et al (2002) pointed out if students were given a set of strategies to apply at their disposal, their reading comprehension improved.

In terms of reading performance, participants in this study showed evidence of substantial improvement resulting from the use of metacognitive approach before, during and after reading-as well as a host of reading strategies. This finding corresponds to Cooper (2004)'s view that explicit teaching of metacognitive strategies to students contributes to improving students' reading performance as well as to the view expressed by Anderson (2002) that the use of metacognitive

strategies encourages students to plan, control, and evaluate the strategies they use when reading and led to improved reading performance.

The results showed that students preferred to use basic strategies than more advanced ones. The most cited strategy used is *rereading* (Table 2, #17) which is a very basic and traditional strategy although some of the participants stated that they reread with a purpose- they only reread and focused on the important part. The least cited strategies used by poor readers are *analyzing and evaluating* the text (Table 1, # 23) as these were more advanced strategies. These findings were in agreement with previous metacognitive research which found that poor readers use less sophisticated reading strategies during reading (Baker and Brown, 1984). Evidently, there seems to be a strong relationship between reading strategies used by readers, metacognitive awareness, and reading performance.

This study showed that using the Metacognitive approach before, during, and after reading had been effective especially with poor readers. Poor readers revealed they were motivated when they followed the metacognitive approach as it encouraged them to process the text in a purposeful way. This finding corresponds to those found by Griffith & Ruan (2005) and Anderson (2002) that instruction on using specific strategies benefits low performing readers more than high performing readers.

The findings of this study have important implications for reading instruction, assessment, and research. They can be useful in designing teaching-learning reading environments in the future. Firstly, teachers should incorporate reading strategy instruction in their reading classes. When students reflect upon their reading strategies, they become better prepared in making decisions about what they can do to improve

their reading as researchers have suggested that teaching readers how to use specific reading strategies is important in teaching reading (Anderson, 2002).

Secondly, Metacognitive reading strategies should be explicitly taught to students. They should be informed of the benefits of the strategies through direct explanation with explicit teacher modeling over a period of time so that the strategies become their regular, habitual reading practice as Brown et al. (1995) suggested, extensive time for practice is needed for metacognitive reading strategies to become part of a student's performance.

Finally, the results of this study lend credibility to the notion that EFL students should be challenged to develop and utilize metacognition in reading as it enhances their reading comprehension and performance. This is in line with the results of research suggesting that international students receiving metacognitive tutoring improved in reading comprehension and did better than those who did not receive it (Hartman, 2000).

Future research should 1) examine the effects of integrating metacognition in other skills such as listening and writing; 2) find out the effects of longer periods of strategy instruction on students to determine if they can transfer the application of the strategy to other situations as a part of their reading process in college.

## REFERENCES

- Anderson, N. 2002. **The role of metacognition in second language teaching and learning.** Retrieved May 18, 2004, from <http://www.cal.org/resources/digest/0110anderson.html>.
- Baker, A. 2002. "Metacognition in comprehension instruction." In Block, C. & Pressley, M. (2002). **Comprehension instruction: Research based best practice.** 77-95. N.Y.: Guilford.

- Baker, L. & Brown, A. 1984. "Metacognitive skills and reading." In P.D. Pearson (Ed.), **Handbook of reading research**, 353-394, NY: Longman.
- Brown, R. et al. 1995. "Transactional strategies." **Educational Leadership**, 52: 8.
- Collins, V. et al. 1996. "Metacognition and its relation to reading comprehension: A synthesis of the research." **National Center to Improve the Tools of Educators**. Retrieved May 18, 2004, from: <http://idea.uoregon.edu/~ncite/documents/techrep/tech23.html>.
- Cooper, S. 2004. **Metacognition in adult learner**. Retrieved May 18, 2004, from <http://www.lifecircles-inc.com/metacognition.htm>.
- Dewitz, P. & Dewitz, P.K. 2003. "They can read the words, but they can't understand." **The Reading Teacher**, 56: 422-435.
- Diket, R., & Abel, T. 2001. "Metacognitive instrument for tracking graduate student learning in gifted education." **Gifted Child Quarterly**, 45: 24-34.
- Farstrup, A. & Samuels, S. 2002. **What research has to say about reading instruction**. (3 ed). IRA
- Goldman, S. & Rakestraw, J. 2002. "Structural aspects of constructing meaning from texts." In M. Kamil, P. Mosenthal, P. Pearson & R. Barr (Eds.), **Handbook of reading research**. 2: 311-335, Mahwah, NJ: Erlbaum.
- Grabe, W. & Stoller, F. 2001. **Teaching and researching reading: Applied Linguistics in Action**. Pearson
- Griffith, P. & Ruan, J. 2005. "What is metacognition and what should be its role in literacy instruction?" In Israel, S. et al. **Metacognition in literacy learning**. NJ: Lawrence Erlbaum.
- Hartman, H. 2000. "Metacognition in Learning and Instruction: Theory, Research, and Practice." **Chapter 8 Dordrecht**, The Netherlands: Kluwer Academic Publishers, 33-36.
- Houtveen et al. 2007. "Effects of metacognitive strategy instruction and instruction time on reading comprehension." **School Effectiveness and School Improvement**, 18:2, 173-190.
- Hughes, J. M. 2007. **Teaching language and literacy, K-6**. Retrieved July 5, 2012. From <http://faculty.uoit.ca/hughes/ReadingProcess.html>
- Illinois State Board of Education. 2004. **IRA frameworks**. Retrieved May 18, 2004, from <http://www.isbe.state.il.us/assessment/IAFIndex.htm>.
- Israel, S. 2007. **Metacognition in literacy learning**. NJ: Lawrence Erlbaum.
- Kuhn, D. 2000. "Metacognitive Development." **Current directions in psychological science**, 9: 178-181.
- Mokhtari, K. & Reichard, C. 2002. "Assessing students' metacognitive awareness of reading strategies." **Journal of Educational Psychology**. 94:2, 249-259.
- Paris, S. & Fluke, J. 2005. "Assessing children's metacognition about strategic reading." In Israel, S. et al. **Metacognition in literacy learning**. NJ: Lawrence Erlbaum.
- Peirce, W. 2003. **Metacognition: Study strategies, monitoring, and motivation**. Retrieved May 18, 2004, from <http://academic.pg.cc.md.us/wpeirce/MCCCTR/metacognition.htm>.
- Pennsylvania Department of Education. 2004. **Reading Performance Level Descriptors**. Retrieved May 20, 2004, from [www.pde.state.pa.us/.../ReadingPerformanceLevelDescriptors.pdf](http://www.pde.state.pa.us/.../ReadingPerformanceLevelDescriptors.pdf).

- Phakiti, A. 2003. "A closer look at the relationship of cognitive and metacognitive strategy use to EFL reading achievement test performance." *Language Testing*, 20:1, 26-56.
- Pressley, M. 2002. "Metacognition and self-regulated comprehension. In A.E. Farstrup & S.T. Samuels (Eds)." *What research has to say about reading instruction* (3rd ed., 291-309). Newark, DE: IRA.
- Snow, C. 2002. *Reading for understanding: Toward an R & D program in reading comprehension*. Santa Monica, CA: Rand.



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