TO WHAT EXTENT DO GRADE LEVEL AND ABOVE GRADE LEVEL SEVENTH

GRADE READERS USE METACOGNITIVE READING STRATEGIES IN READING

FICTION AND NON-FICTION?

THESIS

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To Darrell, Nathanael, and Samuel,
for understanding why I was working all of the time,
for encouraging me to finish no matter what,
and for loving me all the way through it.

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ABSTRACT

TO WHAT EXTENT DO GRADE LEVEL AND ABOVE GRADE LEVEL SEVENTH

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READING FICTION AND NON-FICTION?

by

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This study examined grade level and above grade level seventh grade readers'

current awareness and use of metacognitive reading strategies. The sample included a

target group of 12 students—six students from each ability level. Their metacognitive

behaviors were observed using three procedures: a metacognitive self-awareness

inventory, structured student interviews, and student reading journals. Analysis of data

revealed that these readers tended to utilize few metacognitive reading strategies and

depended on "common sense" strategies for comprehension. Overall, they tended to

approach their reading tasks without planning or consciously trying to correct any

miscomprehension they experienced.

INTRODUCTION

Metacognition can play a significant role in the reading comprehension abilities of middle school students by building on the knowledge that students already have and improving the control they can have over their own reading tasks and comprehension. The goal of reading instruction is comprehension, and metacognition is emerging as a critical variable that could influence that comprehension (Abromitis, 1994). Metacognition has been described by Jacobs and Paris (1987) as the knowledge about cognition and cognitive processes that can be communicated between individuals. In fact, Baker and Brown initiated a similar definition of metacognition with their realization that it is also "the knowledge and control one has over his own thinking and learning activities, including reading" (1981, cited in McLain, 1991). Not only should readers share their knowledge of cognitive processes, but they must also exert control over these processes. Finally, metacognition must include strategies that can be implemented in order to successfully control and share reading processes (O'Shea & O'Shea, 1994). Ultimately, the goal of reading instruction is to create active and independent "metareaders" who plan for their reading tasks, use reading strategies, monitor their own understanding, and evaluate their own learning (Heller, 1986).

As a seventh grade reading teacher in an inner-city middle school in central Texas, I did not know how many of my own grade level and above grade level reading students were using metacognitive strategies in their classroom required reading or in their own independent self-selected reading. I realized that some of my students

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succeeded in reading; they were using metacognitive strategies, but I didn't know whether they really had mastered these strategies and were good readers or whether they were so bright and the material so unchallenging that they didn't need and perhaps didn't even know these strategies. Metacognitive strategies are not generally taught prior to middle school, which could then allow them to become more consistently effective readers. Therefore, I didn't know whether to teach my students these strategies or whether they already knew them. A search of the literature revealed little about teaching metacognitive strategies to grade level and above grade level readers. Further, very little of the metacognition research literature targets students as they begin "thinking in a new key" (Elkind, 1984) and developing cognitive control of their mental and behavioral activities (Mandeville, 2000). Mostly found were studies that supported teaching metacognitive strategies to poor readers. The purpose of this study was to discover what it was that grade level and above middle school readers were doing as they approached a reading task. What metacognitive and reading processes were they utilizing to help them comprehend the text? Their current practices and needs required assessment in order to inform classroom instruction and practice.

One of these students' current needs might prove to be to acquire the skills essential to being good middle school readers—reading for a specific purpose. Although elementary students learn to read, middle school students are expected to read to learn—a very different process that requires metacognition. Unfortunately, most middle school teachers do not teach kids how to read to learn, but they expect their students to be able to do it. Consequently, when students come to middle school, they may struggle as readers

and begin to fall behind. Before designing and delivering instruction in metacognitive reading strategies, we must first discover students' current awareness and use of these strategies—which is the purpose of this study.

LITERATURE REVIEW

Understanding the definitions and interrelationships of comprehension and metacognition is essential to understanding the structure of this study. The definition of comprehension that is best suited to the needs of this paper describes comprehension as "a process in which the reader constructs meaning [in] interacting with text . . . through a combination of prior knowledge and previous experience, information available in text; the stance [taken] in relationship to the text; and immediate, remembered or anticipated social interactions and communications" (Ruddell et al., 1994). Metacognition, then, is generally defined as the "awareness and knowledge of one's mental processes such that one can monitor, regulate, and direct them to a desired end" (Harris & Hodges, 1995). Simply, if comprehension is the understanding of content, then metacognition is the understanding that one has understood the content (McLain, 1991). Metacognition is emerging as a powerful tool for improving the reading comprehension of not only poor or at-risk readers but also older, more mature readers. What about the use of metacognitive strategies by good readers and those students who are younger? How are effective middle school readers using metacognitive strategies in their reading tasks? Are good readers really even using metacognitive strategies as they read or are they so bright that they just seem to "get it"? In order to better understand not only metacognition's effects on reading comprehension but also the extent to which it may be used by good middle school readers, two basic and necessary components of metacognition must first be addressed as

well as how metacognition can significantly characterize the reading comprehension of grade level and above grade level middle school readers from poorer readers.

<div align="center">Components of Metacognition</div>

Metacognition can be conveniently divided into two basic categories: knowledge about cognition and regulation of cognition (Abromitis, 1994). These categories could be otherwise explained as awareness of the processes or skills needed for the successful completion of the task and self-evaluation of comprehension and utilizing corrective strategies to help learning (Cooper, 1997). In other words, for metacognition to occur, it is essential that the reader understand what he already knows about the reading process and apply that knowledge to the reading task as well as monitor his comprehension of the content using appropriate strategies to ensure his continued understanding. Fitzgerald (1983) relates four aspects of metacognition that further explain this major division. She writes that metacognition occurs when (1) you know when you know and when you don't know; (2) you know what it is that you know; (3) you know what you need to know; and (4) you know the usefulness of the corrective strategies. In general, for a reader to be successful in comprehension, he must not only utilize what he already knows but also be aware of when he is not understanding so that he can implement intervention strategies for continued understanding.

Cognitive awareness can best be described as the knowledge readers have about their own reservoirs of cognitive sources and the compatibility between themselves as readers and the demands of a number of reading situations (Abromitis, 1994). Readers must take inventory of their own personal strengths and weaknesses during learning as

well as the characteristics of the reading task at hand. Part of what designates a good reader is the degree to which she distinguishes herself as a good reader and has a purpose and plan for the reading task (Reading/Language in Secondary Schools Subcommittee of IRA, 1990). Self-knowledge and task knowledge should also be able to be stated by the reader. As stated earlier, metacognition is partially determined by the reader's ability to vocalize his understanding of his own knowledge, experiences, and strategies. In fact, the use of self and task knowledge is highly interactive, involving both the reader and others in the reading comprehension (Garner, 1987). What a reader already knows and can verbalize about herself and the reading task then directly influences the control she has over her own comprehension.

The other important half of metacognition is cognitive regulation, or the amount of control a reader can have over his reading strategies and actions. The significance of knowing what you know can expand dramatically when you know how to control when and what you know (Wagoner, 1983). Cognitive regulation can then be divided into two separate categories: self-monitoring of comprehension and use of corrective strategies to achieve comprehension (Abromitis, 1994). Self-monitoring (or comprehension monitoring) is a way of watching over the entire process of learning as it is happening to make sure that everything is working correctly and processing efficiently (Reading/Language in Secondary Schools Subcommittee, 1990). When a reader is engaged in the reading process, it is essential that he approach the reading task as a problem-solving process that involves critical, flexible, and insightful thinking (Miholic, 1994). He must make a concentrated effort to determine when he doesn't understand

what he has read and then make plans to overcome that obstacle (Cooper, 1997).

Corrective use strategies offer readers a way to defeat many obstacles in their reading by

offering an alternate approach to deciphering information. Consequently, the greater that

a student's inventory of metacognitive strategies is, the more likely the student is to be

successful in reading comprehension. Self-monitoring of comprehension and the use of

corrective strategies are key elements to the regulation of cognition.

Perhaps metacognition can further be understood as what an aware reader does

when she comes to an obstacle in reading (Underwood, 1997). Does she realize when she

is not understanding and then engage in corrective strategy use? When a student knows

how she learns, she can more effectively diagnose her needs and use appropriate

strategies to remedy those needs (Tregaskes, 1989). Possibly, the more aware readers are

of their own thought processes, the more control they can exert over them (McLain,

1991).

<u>Effective Readers</u>

Understanding the basic components of metacognition is the gateway to

understanding how the effective use of metacognitive strategies can characterize average

achieving and higher achieving readers. What essentially separates these readers from

poorer readers is the level of metacognitive thought that is attained and applied during

reading activities. Consider the following analogy: Effective readers are much like

enlightened consumers. They know exactly why they are reading and what they are

looking for (Reading/Language in Secondary Schools Subcommittee, 1990). They

approach the text as thinkers with an active mindset, aware of their own knowledge levels

and matching their reading style to the text structure. Moreover, good readers are quite adept at cognition regulation. They do such things as question the text while reading, verbalize thought processes, and note their success or lack of success in reading comprehension (Abromitis, 1994; McLain, 1991). Good readers also more readily apply their understanding of corrective use strategies because they have actually internalized those strategies and can effectively modify them to fit the particular reading task— whether it be narrative or informational text (Reading/Language in Secondary Schools Subcommittee; Caverly, Mandeville, & Nicholson, 1995; Craig & Yore, 1995). Effective readers generally exhibit more metacognitive tendencies when reading than less effective readers do.

Poor or immature readers have little understanding of what it means to comprehend text. For example, they lack the basic realization that they should be reading for meaning, not just decoding (Garner, 1987; McLain, 1991; Wade, 1990). In addition, because immature readers are not necessarily being active readers, they usually do not demonstrate that they have noticed blocks to their understanding; consequently, they do not employ corrective strategies. Sometimes, though, poor readers do have some ideas about the reading process; unfortunately, these ideas may really be misconceptions about the goals, tasks, and strategies that are associated with reading (McLain). In fact, these readers may not even realize that they are not understanding at all as they read. Then these students may still encounter many of the same reading comprehension problems as those with no comprehension prior knowledge at all.

According to Sternberg (1985, cited in Chan, 1996), "metacognition forms an important aspect of superior intellectual functioning." Generally perceived to be "good" or "effective" readers, higher achieving readers appear to have greater motivation, control, and confidence while reading, which could further enhance their self-monitoring skills. According to a study of Australian intellectually gifted and average achieving seventh graders, it was suggested that teaching metacognitive skills and strategies could be highly significant in strengthening the higher achievers' "perception of control" over their reading processes, which could result in their being more strategic, providing a variety of reading solutions, and being better able to describe the strategies verbally. This superiority of higher achieving readers, however, was not clearly demonstrated in Chan's study (1996). Average achieving and higher achieving readers were reported to display no significant differences in use and knowledge of metacognitive strategies. In another study of average ability sixth grade social studies students, the target group's reading comprehension abilities improved as a result of specific instruction in metacognitive strategies (Piper, 1992). In other words, the implementation of metacognitive strategies by average achieving and higher achieving readers positively influenced and even improved their reading comprehension as well as their own perceptions of their reading processes.

It should also be noted that metacognitive development generally appears to gradually improve as readers grow older. Sometimes younger readers are poor or immature in their reading comprehension only because they have not yet developed the maturity needed to be metacognitively aware and in control of their cognitive processes.

These students are coming from elementary school where they were learning how to read—not yet learning to read for meaning (Caverly et al., 1995). Specifically, metacognitive control appears to develop in many young readers around seventh grade (Sawyer, 1988). At that time, metacognitive strategies appear to play a greater role in their reading processes, possibly due to the maturation time as well as the direct instruction of these strategies by some middle school classroom teachers (Chan, 1996). With instruction and practice, it is evident that metacognition can be taught to middle school students and that their reading comprehension can then improve. Although the research is sparse, it seems encouraging that even young children can learn metacognitive skills, which may then continue to develop and change as they become older, more effective readers (Abromitis, 1994; Garner, 1987).

It is apparent that average achieving and higher achieving readers have the capability to use metacognitive strategies well—particularly with direct instruction and guidance from the teacher. But are they really using these strategies independently of the teacher's instruction and guidance? When reading fictional and non-fictional texts on their own, to what extent are grade level and above grade level readers using metacognitive strategies?

METHOD

Subjects

Using both quantitative and qualitative procedures, this study involved two seventh grade reading classes of primarily grade level and above grade level reading students at a central Texas middle school during the fall semester of 2000 for a period of six weeks. One of the classes was comprised of fifteen students, including two Hispanic students and thirteen Anglo students. The other reading class was composed of seventeen students, including four Hispanic students, two African-American students, and eleven Anglo students. In total, there were nineteen males and thirteen females. These students represented a fairly diverse mix of socio-economic levels and ethnicities. Together, these classes made up a subject group that could be substantial enough to determine significant resultant characteristics. In addition, twelve students were selected from both classes together as a target group to participate in a structured interview in order to determine their own metacognitive processes as they read and process text. This selection process was based on their scores on the Gates-MacGinitie Reading Test. Raw scores from all students in both reading classes were ranked from lowest to highest, and six scores were selected from the lower portion as well as six scores from the higher portion. The target group included nine males and three females (nine Anglos, one African-American, and two Hispanics).

<u>Materials</u>

The Gates-MacGinitie Reading Test was used as a diagnostic tool for determining average and above average readers in the classes as well as for identifying and selecting target students for more intensive study. The Gates-MacGinitie Reading Test is a diagnostic examination composed of two parts: a vocabulary section and a reading comprehension section. The two tests are used to assess current vocabulary and reading comprehension levels as well as any significant problems in either of these two areas.

In order to ascertain just where the students were regarding their own reading awareness, Miholic's Metacognitive Reading Awareness Inventory (Appendix A) was administered (1994). Miholic's inventory is a set of ten multiple-choice questions that ask readers to determine in what ways they cope when encountering difficulties while reading. The author encourages the students not to mark what they consider to be the "best" answer but to mark all effective responses, implying the possibility of more than one answer choice being "right". The answers to the questions tended to vary in the degree to which they utilized metacognitive awareness and skills. In addition, Miholic categorizes the ten questions into four domains: regulation and monitoring, conditional knowledge of strategy applications, planning the cognitive event, and evaluation of one's processes. These categories were only somewhat helpful in guiding understanding of the students' awareness and use of metacognitive strategies and further fostered little guidance for designing instruction. Consequently, it was decided to categorize the possible responses as well as the inventory's questions. The answer choices categories

included context awareness, schema awareness, structure awareness, "common sense" awareness, and strategy awareness.

As part of the structured student interviews, the students read self-selected fictional novels. These fictional texts included young adult novels such as J. K. Rowling's <u>Harry Potter</u> books, Lois Duncan's suspense novels, or Gary Paulsen's survival stories.

<div align="center">Assessment Procedures</div>

The study began with the administration of the Gates-MacGinitie Reading Test to both reading classes. By administering this test to the reading students, a determination of which students were at grade or above grade level in their reading comprehension abilities according to their raw scores could be made. Then, these scores could be used to select a group of target students to study through structured interviews. The selection process involved choosing the six highest scores for above grade level study and the six lowest scores for grade level performance.

In addition, Miholic's Metacognitive Reading Awareness Inventory (Appendix A) was administered to all students so that a better understanding of how these students perceived their own reading awareness at the outset of the exploration could be presented. The results of this inventory provided not only a starting point for the students' personal perception but also a picture of the current trends of metacognitive awareness for all students, particularly the target group. The categorization of item responses developed for this study was used to better describe students' awareness of what might be effective reading strategies, that is, metacognitive strategies. Moreover, the Miholic inventory

scores were used to confirm that the students chosen for the two given ability levels were different with regard to their metacognitive reading strategies.

The Gates-MacGinitie Reading Test raw scores were correlated with the Miholic inventory total scores to verify the predictive validity of the Miholic inventory for the population from which the two ability level groups were drawn. The strong correlation between the two scores affirmed the two ability group selections.

Once the test administrations were complete and the target group was established, the individual structured interviews were conducted. In order to better understand how some of the students may or may not metacognitively think through their reading processes, the twelve selected readers were interviewed individually. These brief interviews involved asking the student reading comprehension questions based on the self-selected fictional text he had read. Moreover, Miholic inventory type questions were used as part of the interview to gain insight into the student's metacognitive awareness. These individual structured interviews became a source of specific student's responses to the reading process. The student responses to the structured interview were also used as qualitative data to verify and support the Miholic inventory quantitative data. Could students articulate the same ideas they marked on the multiple-choice inventory? Did students perhaps guess correctly on the multiple-choice inventory but not be able to talk about the same strategies?

While the structured interviews were taking place, all of the students were asked to record their reactions, observations, and thoughts regarding their approaches to their reading tasks in reading reflection journals. They responded to such questions and

prompts as are found in Miholic's inventory. The students could reference either their fictional or non-fictional texts when responding to the questions. These reading reflection journals provided a larger and more comprehensive view of how all of the reading students approached a variety of fictional and non-fictional texts. These journals were particularly helpful in determining what was happening with these students as they learned about and possibly applied new metacognitive strategies in their reading. Finally, the journals were used to verify the interview responses in a non-prompted, non-mediated environment.

Analysis Procedures

Using Statistical Procedures of Social Sciences (SPSS), the Miholic inventory results were analyzed. Item responses were averaged to create total scores. A distractor item analysis was performed for the four possible responses in each item to confirm the validity of the assignment of possible responses to the five categories. The results of the analysis were utilized to determine such items as choice of best strategies, choice of multiple strategies, choice of strategies based on theme of content, and choices of average and above average readers.

Not only did the inventory results need to be adapted for the computer, but they also needed to be ranked according to levels of metacognitive appropriateness and categorized according to types of metacognitive skill required. First, each of the ten items on the inventory had four answer choices that were ranked according to the level of metacognitive appropriateness that each implied—thus helping to determine to what extent a particular metacognitive skill was used. An answer choice that reflected a high

level of metacognitive thought received the highest ranking for that item. The remaining

answers were then ranked sequentially following the highest ranked item. The rankings

were determined through discussion of each answer choice as to how it did or did not

require use of metacognitive skill. The determination of the scores also included the

consideration of Miholic's own designations of what was a "good" answer and what was

a "wrong" answer.

In order to receive a score of "3" on a particular question, the student must have

marked the highest ranked answer choice, all of the other good answer choices, and none

of the wrong, or lowest ranked, answer choices. Then, to receive a score of "2" on a

particular questions, the student must have marked the highest ranked answer choices,

some of the good answer choices, and none of the wrong answer choices. Next, to receive

a score of "1" on a particular question, the student must have marked some of the good

answer choices and none of the wrong answer choices. Finally, in order to receive a score

of "0" for a particular question, the student must have marked at least one of the wrong

choices, regardless of the other choices also made.

The answer choices were then categorized according to the type of metacognitive

skill required (Appendix B). Five categories were determined through discussion of the

answer choices available: context awareness, schema awareness, structure awareness,

strategy awareness, and "common sense" awareness. Each answer choice was then

carefully placed in one of the above listed categories.

These categories of answer choices should be explained in order to understand

exactly where different types of answer choices were placed. First, context awareness

refers to the reader's ability to use surrounding words, phrases, and sentences in order to understand or construct a working definition for unfamiliar words or ideas found it the text. Sample answer choices include using surrounding words to figure out the meaning of an unfamiliar word and checking to see if ideas expressed are consistent with one another when text is confusing. Second, schema awareness includes the reader's ability to engage appropriate prior knowledge and experiences as a way of better comprehending the text being read. Examples include relating new text to something already known and thinking about what is already known about a subject prior to reading. Next, structure awareness involves the reader's understanding of how text is organized and using that understanding to better prepare for effective reading. This category includes knowing which items are the key ideas and understanding which sentences in a paragraph are related to the main idea. Strategy awareness refers to the reader's knowledge and understanding of a variety of metacognitive reading strategies and his ability to independently and appropriately implement those strategies when reading text. Examples would be adjusting the reading pace based on the difficulty of the reading material and self-questioning about the text's important ideas. Finally, the "common sense" awareness category includes those activities which appear to be linked to effective reading comprehension and that good readers seem to naturally do but are not necessarily completely metacognitive in nature. Sample answers include rereading a sentence when not understanding its meaning and temporarily ignoring an unfamiliar word and waiting for clarification. The five category averages for each of the two sample groups were

computed. Statistical significance was deemed irrelevant as well as inappropriate for the limited sample sizes.

Not only were the results of the Miholic inventory analyzed according to the answer choices categories, but they were also analyzed according to Miholic's own designations. He created the inventory questions to represent the four following areas: regulation and monitoring of one's reading and thinking processes, conditional knowledge of strategy applications, planning the cognitive event, and evaluation of one's reading and thinking processes (Miholic, 1994). These four divisions were then used as additional categories for understanding the data from another perspective.

Analyzing the data gathered from the students' reflection journals and individual interviews proved to be a more subjective process. Both when writing in their student journals and when interviewed by the researcher, the target group was asked to describe the ways in which they metacognitively approached reading tasks—both fictional and non-fictional. The data that the group provided in both procedures was read and studied carefully in order to detect any emerging trends among the group of readers. The information was then categorized by these trends as a way to then compare it to the data gathered through the Miholic inventory. Specifically, the student responses during the structured interviews and in their reflection journals were coded to match the five categories of possible item responses.

RESULTS

Miholic's Metacognitive Reading Awareness Inventory

The Miholic's Metacognitive Reading Awareness Inventory results are divided into these classifications: Categories of Answer Choices and Categories of Questions. There are five categories of answer choices (context awareness, schema awareness, structure awareness, "common sense" awareness, and strategy awareness) and four categories of questions (regulation and monitoring, conditional knowledge of strategy applications, planning the cognitive event, and evaluation of one's processes).

Categories of Answer Choices

When presented with context awareness answer choices, the target group on average marked 45% of those choices (see Table 1). Seven of the twelve students, however, marked only two of the possible five choices (three at grade level and four above grade level). The greatest number of answer choices marked—three—was achieved by only four students, three of whom were grade level readers. One above grade level reader marked one choice of the three possible choices.

When presented with schema awareness answer choices, the target group on average marked 42% of those answer choices. Four of the twelve targeted students did not mark any of the schema answer choices at all. One of these students was at grade level while the other three students were above grade level readers. At the same time, half of the students marked one to two choices out of the possible three choices. Only two students, one from each ability level, marked all of the possible choices.

Table 1
Miholic Inventory: Categories of Answer Choices
Awareness and Use of Metacognitive Skills in the Reading Task

I.D.	Context	Schema	Structure	"Common Sense"	Strategy	
	Number of choices picked out of five (5)	Number of choices picked out of three (3)	Number of choices picked out of four (4)	Number of choices picked out of five (5)	Number of choices picked out of nine (9)	Total possible choices = 26
Grade Level						
01	2 (40%)	2 (67%)	0 (0%)	2 (40%)	3 (33%)	9 (35%)
02	3 (60%)	0 (0%)	4 (100%)	3 (60%)	1 (11%)	11 (42%)
03	2 (40%)	2 (67%)	1 (25%)	2 (40%)	3 (33%)	10 (38%)
04	3 (60%)	1 (33%)	2 (50%)	2 (40%)	1 (11%)	9 (35%)
05	3 (60%)	1 (33%)	1 (25%)	3 (60%)	4 (44%)	12 (46%)
06	2 (40%)	3 (100%)	2 (50%)	4 (80%)	4 (44%)	15 (58%)
Above Grade Level						
07	1 (20%)	1 (33%)	1 (25%)	3 (60%)	3 (33%)	9 (35%)
08	2 (40%)	3 (100%)	0 (0%)	1 (20%)	1 (11%)	7 (27%)
09	3 (60%)	0 (0%)	1 (25%)	3 (60%)	4 (44%)	11 (42%)
10	2 (40%)	0 (0%)	1 (25%)	2 (40%)	3 (33%)	8 (31%)
11	2 (40%)	2 (67%)	3 (75%)	3 (60%)	4 (44%)	14 (54%)
12	2 (40%)	0 (0%)	1 (25%)	3 (60%)	1 (11%)	7 (27%)
Average Percent of Choices Picked						
	45%	42%	35%	52%	30%	38%

When presented with structure awareness answer choices, the target group on

average marked 35% of those answer choices. Half of the target group only chose one

structure awareness answer choice, while only one participant marked all possible structure awareness answer choices. This sole participant was a grade level reader. Three readers chose two or three of the possible choices, and two readers chose none at all.

When presented with "common sense" awareness answer choices, the target group on average marked 52% of those answer choices. While none of the students marked all of the possible answer choices, half of the target group marked three of the five possible choices (two at grade level and four above grade level). Four students marked two of the five possible choices (three at grade level and one above grade level), and an above grade level student and a grade level student each marked one and four choices respectively.

When presented with strategy awareness answer choices, the target group on average marked 30% of those answer choices. While none of the students marked all of the possible answer choices, four of the twelve targeted students chose four of the nine possible answer choices (two at grade level and two above grade level). Four students also marked three answer choices (two at each level) as well as one answer choice (two at each level).

Categories of Questions

The categories of questions are based on a weighted scoring system devised by the researcher. Previously, all answer choices had been ranked according to levels of metacognitive appropriateness and assigned a score to reflect that ranking. Then, a scoring system was created based on those rankings (see Table 2).

The first category was comprised of six questions regarding regulation and

monitoring of cognition. On average the students in the target group received only about

35% of the possible points they could have scored. The maximum score possible was

Table 2
Miholic Inventory: Categories of Questions
Items with Weighted Scores

I.D.	Item 1	Item 2	Item 5	Item 7	Item 8	Item 9	Sub Total	Conditional Knowledge of Strategy Application Item 3	Planning the Cognitive Event Item 4	Item 6	Item 10	Sub Total	Total Score
Grade Level													
01	0	0	0	1	1	2	4	1	3	0	0	0	8
02	2	3	2	0	2	1	10	1	0	0	0	0	11
03	0	3	0	0	0	2	5	2	0	0	0	0	7
04	2	0	2	0	1	2	7	1	0	2	0	2	10
05	0	3	1	0	1	1	6	1	1	2	1	3	11
06	2	3	1	0	1	0	7	2	0	1	0	1	10
Above Grade Level													
07	2	2	1	1	1	1	8	2	0	1	1	2	12
08	2	2	0	0	1	1	6	2	2	1	0	1	11
09	0	3	0	1	1	1	6	1	0	1	0	1	8
10	0	3	0	0	1	1	5	1	0	1	2	3	9
11	2	3	0	0	2	1	8	2	0	1	0	1	11
12	2	2	2	0	0	1	7	1	0	2	0	2	10
Average Percent of Points Scored							35%	47%	17%			22%	33%

Key: "3" = marked best answer choice, all other good answer choices, and no wrong answer choices
"2" = marked best answer choice, some good answer choices, and no wrong answer choices
"1" = marked some good answer choices and no wrong answer choices
"0" = marked at least one of the wrong answer choices, regardless of other choices marked

18 points while the average score was 6.6 points. The highest score was 10 points and

achieved by a grade level reader. The next highest score was 8 points and achieved by

two above grade level readers. Six readers (three of each ability level) scored six to seven

points while three readers (two at grade level and one above grade level) scored four to

five points. No one scored below four points in this category.

The second category included only one question regarding conditional knowledge

of strategy application. On average the students in the target group received 47% of the

possible points they could have scored. The maximum score possible was 3 points while the average score was 1.42 points. The highest score recorded was 2 points and accomplished by five students—both grade level and above grade level readers. The rest of the target group scored one point in this category (four at grade level and three above grade level).

The third category also included only one question referring to planning the cognitive event. On average the students in the target group received 17% of the possible points they could have scored. The maximum score possible was 3 points while the average score was .5 points. One grade level reader achieved the maximum score while nine others received a score of zero. One grade level reader and one above grade level reader scored a one and a two, respectively.

The fourth category included two questions concerning the evaluation of one's processes. On average the students in the target group received 22% of the possible points they could have scored. The maximum score possible was 6 points while the average score was 1.33 points. The only scores of zero were achieved by three grade level readers. Two students, one grade level and one above grade level, scored the highest number points with a score of 3. The rest of the target group scored one to two points in this category.

<u>Structured Student Interviews</u>

The structured student interviews occurred as a regular part of normal classroom instruction. Based on the self-selected fictional book that the student was currently and independently reading, he or she responded to three basic questions: (1) Before you start

to read, what kind of plans do you make to help you read better?; (2) When you come across a part of your book that is confusing, what do you do?; and (3) Do you adjust your reading pace depending on the difficulty of the book or do you generally read at a constant, steady pace?

When asked about making plans for reading their texts, the majority of the target group responded by explaining that no plans were needed for reading. Five grade level readers and three above grade level readers determined that they had no need for making a plan for reading. On the other hand, five readers—including both ability levels—said that they often planned to study particular sections of the novel while reading, while some above grade level readers stated that they intended to read for understanding and other grade level participants for important details from the story.

When asked what steps they took when confronting a confusing portion of the text, the most popular answer—given by both grade level and above grade level readers—was rereading the text until they felt they had understood it completely. An almost equally popular answer was to read on in the text until further clarification was attained. Other responses given were to look up unfamiliar words in a dictionary or to refer to other materials for clarification as well as to concentrate harder to monitor understanding.

Finally, when asked about the pace at which they generally read, nine of the twelve target group members stated that they usually read at a constant steady pace. Of those nine readers, four were above grade level readers and five were at grade level. The

remaining three students—two above grade level and one at grade level—felt that they slowed their reading pace at the difficult parts of the text.

Many comments made by the target group students could be dealt into the five categories of answer choices designated for the Miholic inventory. While no students mentioned any specific strategies related to context or schema awareness, they did relate examples of structure, common sense, and strategy awareness. For instance, some students stated that they often planned to read for important details from the story— evidence of structure awareness. Then, others said that they used such common sense strategies as adjusting their pace based on the difficulty of the reading task and referring to dictionaries and other materials for clarification of unfamiliar terms. Further, certain students also demonstrated their strategy awareness by realizing they needed a plan for reading, such as reading for understanding or remembering.

<u>Student Reading Reflection Journals</u>

In addition to completing the Miholic inventory, the target group of twelve students was asked to write in their own reading reflection journals. They were instructed to respond to two different questions regarding how they perceived their own metacognitive activities and processes while reading fictional texts as well as non-fictional texts.

The students' first reflection question was "When you are reading a fictional book, what do you do to make sure that you have understood the content correctly?". The most popular answers written by the students tended to fall into the "common sense" awareness category of the Miholic inventory. For example, seven students, somewhat

evenly divided between the two ability levels, responded to the question by writing that they monitored their understanding by "rereading chapters, paragraphs, or sentences" when they did not understand the text. Also, three readers explained that they depended upon "reading on [in the text] for further explanation when not understanding". Not only was their apparent "common sense" awareness noted but also their knowledge of some metacognitive strategies involving structure and schema. For instance, one above grade level student wrote that he would preview the novel by reading the book summary on the book jacket to get his mind thinking about the contents of the book as well as what he might already know about it. Other examples of strategy use were self-questioning, focusing on the details of the story, and summarizing after reading the novel—all demonstrated by both ability levels.

The students' second reflection question was "What would you do with a non-fictional text to make sure you have understood the content correctly?". This particular question elicited a wide variety of responses from the target group. Again, one of the most popular answers given by both ability levels of the group was the "common sense" awareness process of rereading the text until comprehension was mastered. In addition, some above grade level students shared such strategies for tackling non-fictional texts as highlighting important text items and reading at a slower pace, while other grade level readers approached these texts by looking up unfamiliar words in the dictionary and reading seriously and concentrating on the text. Although not all of the students responded with metacognitive strategy use, most readers demonstrated an understanding

of how to monitor their comprehension in some strategic, structural, or schematic ways.

Evidence of strategy use in the context awareness category was not apparent.

DISCUSSION

The primary objective of this study was to understand to what extent grade level and above grade level seventh grade readers used metacognitive reading strategies in reading fictional and non-fictional materials. In a sense, this project has helped to pave the way for further research into what metacognitive strategies can really work with and be beneficial for middle school readers by just studying what they are currently doing in their own reading tasks. The research gained through student inventories, journals, and interviews regarding metacognitive perceptions and activities yielded some expected information and, at the same time, some surprising results as well. Four areas of discussion will attempt to make some sense of these findings: the readers' weak planning prior to the reading task, the readers' heavy reliance on "common sense" awareness strategies, the emerging differences between the two ability level groups, and the readers' different approaches to fictional and non-fictional reading tasks.

Weak Planning Prior to the Reading Task

It seems as though average and good readers would also be naturally good organizers and planners; otherwise, how would they get to be such capable readers and generally successful students to begin with? This assumption has proved to be most inaccurate particularly in regard to the grade level and above grade level students who were studied. The results of the Miholic inventory and structured interviews in particular point in exactly the opposite direction; these average and good readers are not making a specific plan before reading any kind of text (see Table 2). They are just jumping into the

material headfirst without regard to purpose or plan. Effective readers have been described as ones who know why they are reading and what they are seeking to learn from the text. These average and good readers, apparently effective as well, demonstrate the opposite by devising no plan for the reading task at hand. They may not understand why they are reading, and they most definitely will have difficulty determining exactly what is and what is not important in the text—especially without a plan in place. Possibly, due to their higher level of reading ability, these students feel that they do not need a plan. Maybe it just slows them down or maybe they are just reading for pleasure and see no point in creating a plan. Moreover, they could also be creating a plan subconsciously and not even realize they are doing it because it is such a natural part of their reading experience. In any case, these average and good readers demonstrated a lack of planning for the reading task, which then tends to cloud their success with other metacognitive strategies.

<u>Reliance on "Common Sense" Awareness Strategies</u>

Not only did the target group exhibit weak planning skills prior to the reading task, but they also tended to rely primarily on "common sense" awareness strategies, rather than metacognitive strategies, when approaching their reading tasks. These common sense awareness strategies are different from metacognitive strategies because they tend to originate in what is naturally done by readers to solve a comprehension problem. As stated earlier, metacognitive strategies involve awareness and knowledge of one's mental processes (Harris & Hodges, 1995). In order to monitor and regulate mental

processes, one must be aware of these processes, an awareness that is often attained through instruction and practice.

When presented with common sense strategy options in the Miholic inventory, the target group chose these strategies more than half the time as a means of comprehending text (see Table 1). In addition, the students' responses in their reflection journals and individual interviews often included rereading the text and reading on for further clarification when confused by the text. These activities are really just common sense processes, not inherently metacognitive activities. Effective readers have been described as demonstrating their ability to know when they are and are not understanding the text and then employing a variety of situation-appropriate metacognitive strategies to remedy the situation. These average and good readers are obviously monitoring their cognition— a metacognitive skill—but they are not regularly utilizing metacognitive strategies to correct the situation. Instead, they are turning to natural, familiar ways of fine-tuning their understanding. Moreover, they keep returning to these same common sense strategies without really assessing the comprehension problem and the text structure in order to determine which strategy would really be appropriate and useful. Perhaps they have not been taught to use a variety of strategies and are relying on what they know and can use effectively. Occasionally, a member of the target group would use self-questioning, summarizing, or previewing the text but not with any consistency or confidence which would indicate even an adequate knowledge and understanding of metacognitive strategies.

Differences Between Average and Good Readers

Throughout this discussion, average and good readers have been lumped together as the "target group" without regard to what each has individually demonstrated. As previously discussed, these readers have relied primarily on "common sense" awareness strategies as a means of comprehending text. On the other hand, they have also, at times, utilized metacognitive strategies to approach the text. It seems apparent that both levels of readers have somewhat equal awareness of a few metacognitive strategies, such as summarizing, using context clues, or accessing prior knowledge. The difference between the two sets of readers lies in how this metacognitive awareness is manifested in their reading. Average readers tended to use these metacognitive strategies more readily than the good readers did. For example, concerning the category of context awareness answer choices on the Miholic inventory, four readers chose the greatest number of context awareness choices—three (see Table 1). Of those four readers, three were average grade level readers, possibly indicating their greater use of context-oriented metacognitive strategies. Then, regarding the structure awareness category of answer choices, one grade level reader in particular marked every correct possible answer choice for that category, indicating a strong awareness and use of those particular metacognitive strategies. Concerning the good readers, however, half of the group consistently marked none of the schema related answer choices for that category, showing that perhaps they either have no knowledge or experience with these types of strategies or that they have difficulty verbalizing exactly what it is that they are doing mentally—as the structured interviews demonstrated. Or perhaps they have awareness of these metacognitive strategies, yet they

are such good readers that they do not take the time to utilize them for fear of being slowed down by the steps of the process. In any case, it was interesting to note that, overall, they average readers tended to activate their awareness by putting these metacognitive strategies to work, while the good readers tended to disregard them or forget about them altogether.

Approaches to Fictional and Non-fictional Reading Tasks

As the findings of the student reflection journals and structured interviews in particular were examined, it became increasingly evident that the target group tended to approach fictional and non-fictional texts in slightly different ways. Whether "common sense" or metacognitive awareness related, the strategies that the group chose to use with each type of text differed accordingly. For example, when dealing with their fictional texts, the students seemed to be more laidback and relaxed in their approach, thus employing few strategies at all. They might choose to reread passages if they were confused or to write a summary of each chapter completed, but in general, they did not demonstrate any active meaning making processes. It is possible that the reason for this lack of strategy use is due to the nature of the reading task. Fictional reading is usually easier for them, more fun for them, and of their own choosing. All of these reasons accentuate the ease with which the students remember details and deal with confusing text. They are enjoying the reading task and consequently have little difficulty with reading comprehension. Non-fictional tasks, though, presented the target group with a different text structure and comprehension goals. Most of the readers realized that reading non-fiction generally meant that it could have unfamiliar terminology and

lengthy passages as well as elicit a final assessment of some kind. All of these factors tended to stimulate their use of metacognitive strategies. They knew they needed a plan of sorts in order to effectively read these texts and remember them, too. The target group listed such strategies as using prior knowledge and experiences, highlighting important text items, understanding the purpose of the task, reading at a slower pace, and looking up unfamiliar words in the dictionary. Their use of these specific metacognitive strategies revealed their understanding of the difference between reading fictional texts and non-fictional texts.

Changes, Questions, and Teaching Implications

As with any lengthy project or study, problems do occasionally arise. Although the study progressed remarkably well, by the time that I reached the analysis segment of the study, I determined that there were some areas that could have used some improvement. The first change that I would have made would have been to lengthen the study. Such a short period of time worked well for my own schedule but might not have allowed for additional classroom research. For example, the target group only wrote in their reflection journals one time. Had there been more time, they could have written several entries in them over a greater variety of topics. The next change involves the structured student interviews. Because they involved the students discussing their metacognitive strategies with regard only to their fictional novels, they never had the opportunity to discuss verbally how they metacognitively approached their non-fictional pieces. Moreover, these interviews could have been even more aligned with the Miholic inventory in terms of the kinds and number of questions asked for easier correlation

between the two. The desire for such changes as these only came about as the analysis of the findings began. Perhaps that is a normal progression of a research study, from which I can then learn and use in subsequent studies.

Not only were there changes that could have been made, but there are also some new questions that have arisen since the completion of the study. For instance, how can the metacognitive abilities and skills of above average readers really be observed and studied when these readers seem to struggle to describe their own metacognitive processes? Do they really have difficulty in expressing what exactly they do while tending to a reading task because it does come to them so naturally? Also, why do the average readers tend to utilize more of the metacognitive strategies than the above average readers? Are these readers looking for reading strategies that will help to "equalize" them in ability? Or is it possible that they just work at a speed that allows them to implement metacognitive strategies more easily and effectively? Questions such as these may eventually guide me in a future research study.

Because my study was primarily an observational study, I can offer only suggestions inferred from the findings of this study for classroom teaching. I found that many of the target group students had no real reservoir of metacognitive skill knowledge from which to draw when confronted with a reading difficulty. It might be effective for all classroom teachers to consider offering direct instruction in specific metacognitive strategies, such as self-questioning or predicting, as a regular part of their courses. In addition to this instruction, guided and independent practice with the strategies should also be provided. In this way, the students may become more comfortable with a variety

of strategies that they can then use independently. Not only should readers become aware of and practiced in metacognitive strategies, but they should also understand exactly where and when to use these specific strategies. I found that the target group studied tended to rely on the same metacognitive strategies, regardless of the reading task. Perhaps if they had matched the appropriate strategy with the reading task, they would have comprehended the text more effectively and easily. Finally, it seems apparent that learning how to plan for a reading task prior to actually tackling the text is a skill that needs attention. Teachers of all subjects should provide planning time and hints for their students as a way to assist them in effectively reading and comprehending the text. Again, direct instruction as well as practice should be offered so that the students can understand the importance of such a strategy and become more adept at implementing it. These ideas for improving metacognitive strategy awareness and usage appear to emerge from the findings of this study, but they are only suggestions for teaching.

CONCLUSION

Trying to understand just exactly what grade level and above grade level seventh

grade readers are doing metacognitively when they approach a reading task has proven to

be quite interesting and somewhat vague at the same time. At the start of this study, it

appeared that these average and good readers would behave just as previous research had

said they would—metacognitively approaching each and every reading task with an

appropriate strategy and plan in mind. That, of course, is not exactly what happened. The

target group gradually revealed that they did not treat every reading task in the way that

they were "supposed to" or even encouraged to. Often, they disregarded a plan or strategy

altogether, perhaps in their desire to just read without the encumbrance of procedures or

in their basic ignorance of strategy how-to. Other times, they felt a plan was needed, and

they called upon common sense to assist them—not metacognitive reading strategies.

This target group of average and good readers revealed that they do use some

metacognitive reading strategies if the situation is obviously calling for them, but in

general, they tend to plunge into their reading without consciously trying to correct any

miscomprehension they experience.

APPENDIX A

Miholic's Metacognitive Reading Awareness Inventory

There's more than one way to cope when you run into difficulties in your reading. Which ways are best? Under each question here, put a check mark beside *all* the responses you think are effective.

1. What do you do if you encounter a word and you don't know what it means?

   a. Use the words around it to figure it out.
   b. Use an outside source, such as a dictionary or expert.
   c. Temporarily ignore it and wait for clarification.
   d. Sound it out.

2. What do you do if you don't know what an entire sentence means?

   a. Read it again.
   b. Sound out all the difficult words.
   c. Think about the other sentences in the paragraph.
   d. Disregard it completely.

3. If you are reading science or social studies material, what would you do to remember the important information you've read?

   a. Skip parts you don't understand.
   b. Ask yourself questions about the important ideas.
   c. Realize you need to remember one point rather than another.
   d. Relate it to something you already know.

4. Before you start to read, what kind of plans do you make to help you read better?

   a. No specific plan is needed; just start reading toward completion of the assignment.
   b. Think about what you know about the subject.
   c. Think about why you are reading.
   d. Make sure the entire reading can be finished in as short a period of time as possible.

5. Why would you go back and read an entire passage over again?

    a. You didn't understand it.
    b. To clarify a specific or supporting idea.
    c. It seemed important to remember.
    d. To underline or summarize for study.

6. Knowing that you don't understand a particular sentence while reading involves understanding that

    a. the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.
    b. the writer may not have conveyed the ideas clearly.
    c. two sentences may purposely contradict each other.
    d. finding meaning for the sentence needlessly slows down the reader.

7. As you read a textbook, which of these do you do?

    a. Adjust your pace depending on the difficulty of the material.
    b. Generally, read at a constant, steady pace.
    c. Skip the parts you don't understand.
    d. Continually make predictions about what you are reading.

8. While you read, which of these are important?

    a. Know when you know and when you don't know key ideas.
    b. Know what it is that you know in relation to what is being read.
    c. Know that confusing text is common and usually can be ignored.
    d. Know that different strategies can be used to aid understanding.

9. When you come across a part of the text that is confusing, what do you do?

    a. Keep on reading until the text is clarified.
    b. Read ahead and then look back if the text is still unclear.
    c. Skip those sections completely; they are usually not important.
    d. Check to see if the ideas expressed are consistent with one another.

10. Which sentences are the most important in the chapter?

    a. Almost all of the sentences are important; otherwise, they wouldn't be there.
    b. The sentences that contain the important details or facts.
    c. The sentences that are directly related to the main idea.
    d. The ones that contain the most details.

APPENDIX B

Miholic's Metacognitive Reading Awareness Inventory
Answer Choices Categorized

Context Awareness	Schema Awareness	Structure Awareness	"Common Sense" Awareness	Strategy Awareness
1a. Use the words around it to figure it out.	3d. Relate it to something you already know.	5d. To underline or summarize for study.	1c. Temporarily ignore it and wait for clarification.	1b. Use an outside source, such as a dictionary or expert.
2c. Think about the other sentences in the paragraph.	4b. Think about what you know about the subject.	8a. Know when you know and when you don't know key ideas.	2a. Read it again.	3b. Ask yourself questions about the important ideas.
6a. The reader may not have developed adequate links or associations for new words.	8b. Know what it is that you know in relation to what is being read.	10b. The sentences that contain the important details or facts.	5a. You didn't understand it.	3c. Realize you need to remember one point rather than another.
6c. two sentences may purposely contradict each other.		10c. The sentences that are directly related to the main idea.	5c. It seemed important to remember.	4c. Think about why you are reading.
9d. Check to see if the ideas expressed are consistent with one another.			9a. Keep on reading until the text is clarified.	6b. The writer may not have conveyed the ideas clearly.
				7a. Adjust your pace depending on the difficulty of the material.
				7d. Continually make predictions about what you are reading.
				8d. Know that different strategies can be used to aid understanding.
				9b. Read ahead and then look back if the text is still unclear.

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VITA

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